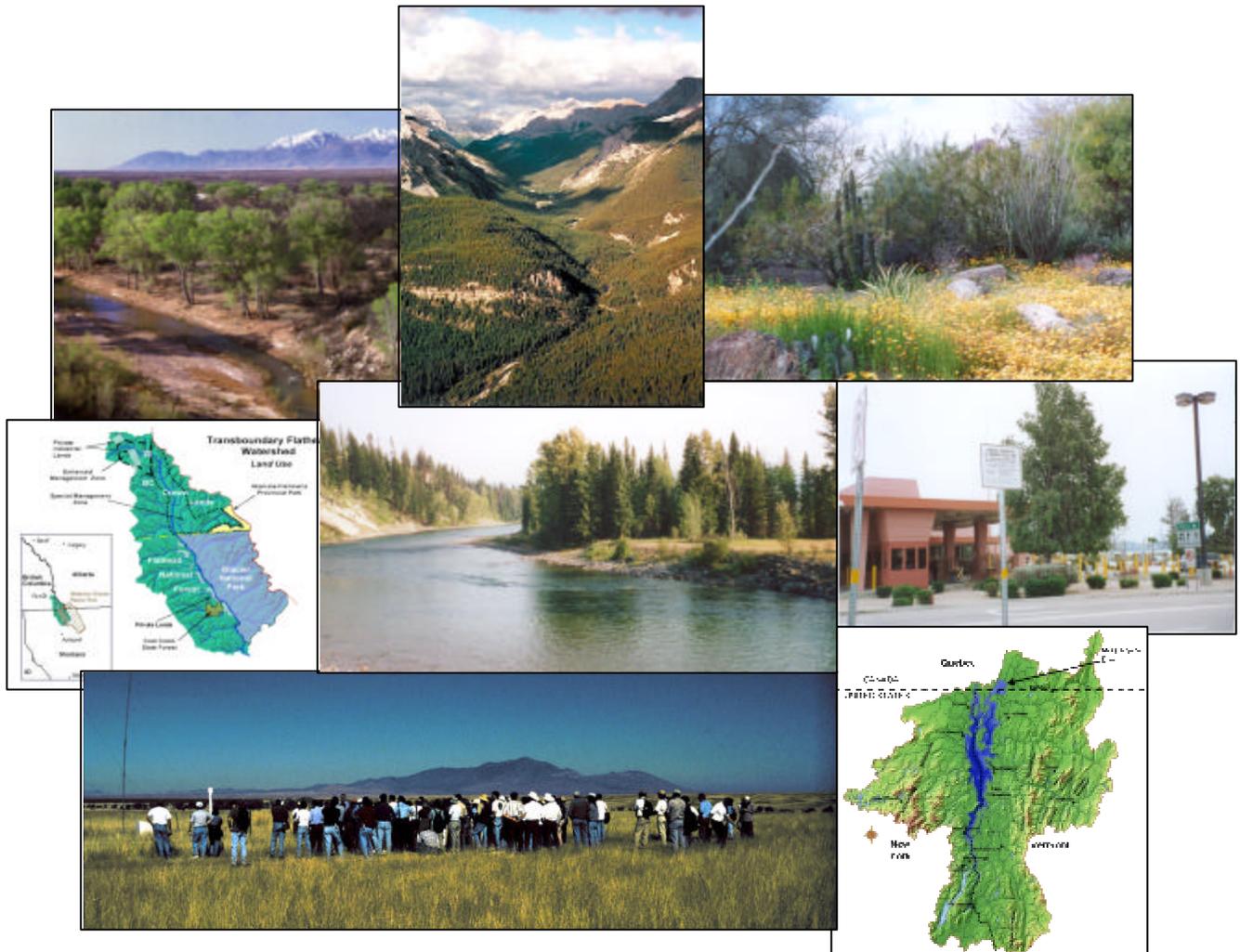


Transboundary Collaboration in Ecosystem Management: *Integrating Lessons from Experience*



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ABSTRACT

Following natural boundaries rather than political borders, many resource management problems have been complicated by a lack of coordination between the policies and practices of different jurisdictions. This disconnect magnifies the importance of collaboration among stakeholders on both sides of the divides that have compartmentalized them. However, effective collaborative resource management is not easily achieved, and when the ecosystem in question spans an international border, complications are exacerbated. The legal, social, and economic differences that can exist between nations add layers of complexity to the challenges that any collaborative effort faces. Despite these obstacles, transboundary ecosystem stewardship is occurring in an international context. This study highlights the experiences of eight such efforts operating across either the U.S.-Canada or U.S.-Mexico borders. Among other things, these cases illustrate the primary importance of an organized collaborative process and strategic stakeholder involvement in affecting positive ecological outcomes. In addition, they indicate that international treaties are not the only means of achieving transboundary ecosystem management. In fact, the case studies convey that varying levels of government endorsement, coupled with a range of organizational structures and activities, can be effective in encouraging the shared stewardship of cross-border resources. They also indicate that transboundary ecosystem management efforts need not have authoritative decision-making power in order to affect real ecological outcomes. Instead, the recommendations they can provide by working within existing legal frameworks are often adopted in policy. In summary, the case studies developed under the umbrella of this research project reveal webs of conservation activities occurring throughout many transboundary ecosystems. The lessons distilled from the eight collective efforts outlined in this report have general applicability but have also been targeted at addressing the transboundary ecosystem management challenge facing practitioners in the Flathead River Basin of southeastern British Columbia and northwestern Montana.

EXECUTIVE SUMMARY

THE TRANSBOUNDARY DILEMMA

In the face of natural resource problems that are becoming more politically, legally and ecologically complex, many communities are finding it necessary to take a broader look at their natural resource base and consider the full range of ecosystem processes that provide and sustain those resources. This more holistic, expanded view of ecosystem management often requires more coordination between different agencies, stakeholders or governments who must work across jurisdictional boundaries. Running counter to many of our traditional paradigms of natural resource management, community, and government, this approach must overcome numerous barriers to effective stewardship. When the jurisdictional boundaries that separate a natural resource system comprises an international border, those barriers are ever more profound.

The Flathead Basin of northwestern Montana, U.S., and southeastern British Columbia, Canada, provides an interesting example of this shared resource dilemma. The Flathead Basin is recognized to be a critical component of the greater “Crown of the Continent” ecosystem, harboring pristine ecosystem conditions that provide habitat for numerous wildlife species. Threats such as private development in the U.S., and industrial logging and mining in Canada increasingly threaten the processes and habitat connectivity that sustain this ecosystem. In recent years, stakeholders on both sides of the border have been working to protect this transboundary ecosystem, but have been struggling to develop a collaborative process that can overcome those barriers to transboundary resource management.

PURPOSE

The purpose of this study was to look at how collaborative resource management is different when an international border is involved, and then evaluate existing efforts that are dealing with transboundary resource issues. With a greater understanding of existing transboundary efforts, we drew lessons from those efforts that would be useful to stakeholders in the Flathead Basin and other areas that are facing transboundary resource issues.

The following overarching questions drove this study:

- How is the management of natural resources across international borders similar to and different from cases that involve domestic ecosystem management?

- Recognizing that collaboration is essential to ecosystem management, how is collaboration across international borders different from and similar to collaboration within a single nation?

By developing and analyzing case studies of existing collaborative transboundary efforts, we were able to draw several lessons about their structure and dynamics. Our case study analysis has focused on some of the following elements of these transboundary programs and efforts: How they were initiated, how they are structured, how they gain legal and institutional legitimacy, what barriers they have come across, and how they have been able to overcome some of those barriers. This analysis has given us a cross-section of experiences that can be useful to professionals and citizens in the Flathead basin, and elsewhere who are working to better manage their natural resources across an international border.

CASE STUDIES

After gaining a cursory understanding of the situation in the Flathead basin, we identified and researched over 22 areas along the U.S.-Canada and U.S.-Mexico borders where transboundary resource management efforts were in place. After evaluating those candidate cases we selected eight of these case studies for in-depth analysis. The case studies that were selected demonstrated a broad range of experiences and approaches to transboundary collaboration.

The case studies represent a broad range of institutional and programmatic approaches to transboundary collaboration. Two of the case studies, the Red River Basin Board and the ManOMin watershed demonstrate programs that are nested under the binational authority of the International Joint Commission (IJC). In the Red River Basin example, the IJC had facilitated cooperative efforts to manage water flows in the Red River. However, in response to increasing frustration with the IJC's inability to respond to local issues, local stakeholders spearheaded an international, grassroots effort called the **Red River Basin Board**. This case illustrates the strength that such a forum can bring to a transboundary collaborative effort by empowering the participation of local stakeholders to deal with local concerns.

Case Studies

- **International Sonoran Desert Alliance**
Arizona, U.S. & Sonora, Mexico
- **Gulf of Maine**
Maine, U.S. & New Brunswick, Canada
- **Upper San Pedro River Basin**
Arizona, U.S. & Sonora, Mexico
- **Lake Champlain Basin Program**
New York and Vermont, U.S. & Quebec, Canada
- **ManOMin Watershed**
Minnesota, U.S. & Manitoba and Ontario, Canada
- **Okanagan River Basin**
Washington, U.S. & British Columbia, Canada
- **Puget Sound – Georgia Basin International Task Force**
Washington, U.S. & British Columbia, Canada
- **Red River Basin Board**
Minnesota, North Dakota, and South Dakota U.S. & Manitoba, Canada

In the **ManOMin watershed**, the U.S. and Canadian governments have cooperatively managed these boundary waters under the authority of the IJC since the 1920's. In recent years, several other interrelated collaborative efforts, including one spearheaded by a First Nation, have arisen to improve the stewardship of this transboundary ecosystem. This case illustrates how the development of communication channels between stakeholders and jurisdictions can help expand resource management efforts to consider the entire ecosystem.

In the absence of an international authority like the IJC to provide a foundation for transboundary collaboration, several cases demonstrated the effectiveness of a formal organizational structure and non-binding international agreements. With a highly formal organizational structure and a diverse base of stakeholders, the **Gulf of Maine Council** has provided a central focus for coordinating the management of the region's economic and ecological resource base. As a long-standing transboundary organization, the Council has been effective in improving cross-border communication. Similarly, the **Lake Champlain Basin Program** has made noticeable progress towards improving the lake system with a formal collaborative process that is bolstered by several state-state and state-province agreements. This program is a good example of how a such a formal process can maintain broad stakeholder representation and achieve positive ecological outcomes.

Differences in governmental structures are an inherent difficulty with transboundary collaboration. Recognizing this barrier, several of the case studies have adapted to work with, rather than against the existing governmental and institutional structures. Created under an international state-province agreement, the **Puget Sound-Georgia Basin International Task Force** brings together government agency and tribal representatives to mitigate the inherently transboundary threats to the ecosystem. With a formally organized parallel structure, the Task Force illustrates that joint management efforts can work within existing governmental frameworks and realize tangible ecological results.

The **Okanagan Basin** provides a more grassroots example of this approach. Recognizing the imperiled status of transboundary sockeye salmon populations, resource managers in the Okanagan basin have been able to incorporate transboundary ecosystem goals into a larger regulatory framework. While the Okanagan case represents a relatively young effort, it is a strong example of how existing institutional structures can be shaped to address transboundary resource protection.

While the transboundary efforts along the U.S.-Mexico border demonstrate many of the similar themes as the other cases, they take place in a much different cultural and economic context. These examples, however, demonstrate several different and creative approaches to facilitating transboundary collaboration. Despite the numerous barriers to transboundary collaboration in the **San Pedro Basin**, several separate but interrelated programs have made significant progress towards protecting the basin's shared natural resources. These efforts provide a good example of how the influence of political leaders can help build the momentum for improved collaborative management of this important transboundary resource.

Stakeholders in the western Sonoran Desert have been able to facilitate transboundary collaboration from the ground up. Aimed at encouraging community based environmental stewardship, the **International Sonoran Desert Alliance (ISDA)** has established a number of environmental education and sustainable business initiatives throughout the region. ISDA is an interesting example of a transboundary collaborative effort that has attracted attention and funding because of its local, citizen-based approach.

FINDINGS

The case studies revealed a variety of different approaches to facilitating transboundary collaboration. While there were similarities between these eight approaches, none of them conformed to any prescribed approach or structure. Instead, each was uniquely tailored to fit the existing natural, cultural, political and economic situations in the area. These efforts revealed several aspects of transboundary collaboration that are no different than any collaborative efforts, and also demonstrated how collaboration is different when the dynamic of an international border is added to the process.

The transboundary efforts in the case studies exhibited many of the same barriers to collaboration that exist in a domestic arena, and utilized many of the same strategies to overcome those barriers. However, what is different about transboundary situations, is that the international border amplifies some of those barriers. While this added complexity makes it much more difficult to develop a collaborative process, it also necessitates such a process to effectively address transboundary natural resource issues.

There are four main types of barriers that appeared be much more prominent in transboundary situations. These barriers are:

- Legal and governmental differences that complicate coordination and implementation;
- Barriers to communication, movement, and information;
- Social and cultural differences including language differences that inhibit the development of trust and a common sense of community; and
- Economic disparities that constrain certain stakeholders' willingness or ability to participate in the process.

In order to overcome these barriers to transboundary collaboration, the case studies illustrate the following strategies.

- **Overcoming Legal and Governmental Differences**
 - *Transboundary Agreements*, such as Joint Declarations and Memoranda of Understanding that can facilitate commitment to transboundary goals and also leverage funding and legitimacy for an effort.
 - *International Institutions*, such as the International Joint Commission or the Commission for Environmental Cooperation to provide forums for dialogue or channels for management decisions.

- **Political Champions**, who have included Bruce Babbitt in the San Pedro basin and several Senators in the Lake Champlain basin can help bring recognition, resources and legitimacy to an effort.
- **External Recognition and Legitimacy**, which can come through existing protected areas, legislative recognition, or focal species recognition can help demonstrate that the resources of a transboundary region are valuable and are worth protecting.
- **Overcoming Communication Barriers**
 - **Interpersonal Contact**, through structured meetings, information sharing, or informal networks can be important in developing and sustaining communication channels.
 - **Conferences**, such as those that were held in the ManOMin watershed and the San Pedro basin can be a major boost to relationships, information exchange, and public engagement.
 - **Facilitating Communication**, through such strategies as resource directories or bilingual materials which can keep participants informed and engaged.
- **Overcoming Social and Cultural Barriers**
 - **Developing and Strengthening a Greater Sense of Community**, through means such as utilizing existing social relationships or, or capitalizing on a region’s shared history, can help strengthen transboundary relationships, and develop a more cohesive sense of community.
 - **Integrating Native Communities**, can help overcome barriers if they have existing social and cultural links across the border, or can bring in a perspective that helps convene a process in a transboundary situation.
- **Overcoming Economic Barriers**
 - **Recognizing Different Priorities**, can help facilitate collaboration by helping to reconcile conflicting economic connections to transboundary resources.
 - **Facilitating Participation**, of governments and stakeholders who do not have the economic means to participate can empower them to become long-term partners in a transboundary effort.

The cumulative result of all of the barriers to transboundary collaboration is a slow and sometimes tedious process. Despite the many approaches that we saw in the case studies to overcome the barriers to collaboration, transboundary efforts can be difficult. In order to keep stakeholders moving forward towards eventual resource management outcomes, the case studies demonstrated the importance of an effective transboundary collaborative process.

- **Maintaining an Effective Transboundary Process**
 - **Organizational Structure**. While some case studies made significant progress through an informal, ad hoc process, a more structured effort can be useful in facilitating representation and participation, providing a structured forum for addressing more difficult issues, and attracting resources and legitimacy to the effort.
 - **Patience**. The case studies demonstrated that transboundary collaboration can be

extremely slow, and it can take many years to achieve procedural outcomes, let alone ecological ones, so it is important that participants remain patient and committed.

What are the Implications for the Flathead Basin?

For several years, stakeholders in the Flathead Basin have been working to develop a grassroots approach to transboundary collaboration in ecosystem management. From these efforts, there are already a number of ingredients for transboundary collaboration in place, including an exciting and effective vision, some preliminary ecological successes, and a growing transboundary infrastructure. The findings from the case studies suggest that in order to continue to develop an effective transboundary process, the stakeholders in the Flathead Basin should focus on three things:

- Strengthening the role of British Columbia in the effort by engaging political leaders and utilizing existing transboundary agreements.
- Broadening existing linkages by securing active participation in the effort, building from existing partnerships, and developing new channels for collaboration.
- Including Native communities, such as the Confederated Salish and Kootenai tribes in the U.S. and the Canadian Ktunaxa/Kinbasket First Nation.

As more communities, such as those in the Flathead Basin, face transboundary natural resource challenges, there will be an increasing need for transboundary collaboration and a better understanding of how it works. This study provides a cross-section of experiences from North America's borderlands, these communities develop more effective transboundary collaborative processes that will facilitate positive ecological outcomes.

Conclusion

The case studies revealed four specific lessons that stood out as particularly interesting or unconventional.

- First, while international agreements were very useful in facilitating transboundary collaboration, international treaties were not necessary in these situations.
- Second, none of the programs that we investigated had decision-making authority over the management of transboundary resources. Instead, they generally focused on collaborative decision making and improving coordination with existing governmental agencies and authorities to implement ideas.
- Third, many of the case studies were comprised of more than a single organization or entity carrying out transboundary ecosystem management. Instead, many illustrated an interconnected web of activities, efforts and organizations that are all moving toward common transboundary objectives.
- Finally, while some of the case studies are beginning to see positive ecological outcomes, early successes are measured in terms of procedural outcomes.

The findings from this study raise a set of issues that we believe should be considered by individuals or organizations hoping to establish sustainable transboundary collaboration and ecosystem management. One of the strongest lessons from this study is that the international border is not an insurmountable barrier and, as the case studies demonstrate, effective transboundary collaboration and ecosystem management is indeed possible.

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PART I

BACKGROUND, ANALYSIS, AND INTEGRATION

INTRODUCTION

Over the past three decades, the issue of boundaries has become increasingly important to those interested in the long-term viability of natural systems. Individuals interested in stewardship confront arbitrary divisions on a daily basis: distinctions between different management agencies, limited communication across the different program areas within a single agency, and political lines drawn across a map, just to name a few. Whether the barriers to working across these boundaries are real or perceived, they certainly complicate management efforts.

Nevertheless, federal agencies, environmental groups, and even some extractive industries departed from the traditional fixed jurisdiction conception of nature, symbolized by individual species or single stands of trees. This old paradigm was replaced with a growing understanding of the existence of a larger, yet more fundamental *ecosystem* upon which these organisms rely. Several new management paradigms grew out of this evolution, such as watershed management and ecosystem management.

Unfortunately, implementing these management paradigms is much more difficult than simply changing the definition of the problem.¹ A rich literature has developed around formalizing definitions for these paradigms, identifying obstacles, and offering solutions.² Early attempts at implementation confronted significant obstacles, such as different conceptions of what large-scale management means, a lack of funding, and working across jurisdictional boundaries. This study examines a particular subset of attempts to implement these more holistic management paradigms that confront the traditional obstacles while working across an international border.

The Problem of Borders

Political and administrative boundaries have real impacts on the ecology of natural landscapes. Jurisdictions on either side of a border are likely to have different values for resources that manifest themselves into differential policies and priorities for how lands are used. These different land use practices inevitably create distinct zones in a greater ecosystem that reflect the anthropogenic priorities. Unfortunately, these zones can alter the movement of such things as animals, plant seeds, water, and nutrients.³

Borders also have distinct impacts on the social perception and interaction with both the landscape and human residents of neighboring jurisdictions. These ecologically arbitrary lines fracture both human and natural communities, even if only by creating the perceived separation. Maps are particularly problematic at reinforcing this idea. When the nightly weather report broadcast to communities in northern Montana within 50 miles of the border with Canada does not include Canadian cities, it makes a statement that adjacent areas are irrelevant to Montanans.⁴

Ironically, although borders are created to promote organized and efficient government, borders can make it exceedingly difficult to coordinate behavior among the individuals,

organizations, and communities separated by that boundary. When an ecologically connected resource spans a border, this lack of coordination and information exchange can lead to inefficient, inconsistent, and even conflicting resource management regimes.⁵

The presence of an international border presents additional challenges to the already complex process of managing natural resources across multiple jurisdictions. Differing laws, customs, and languages exacerbate the situation. Transboundary conflicts often include differences in government structure, culture, linguistics, and economics.⁶ These differences are clearly apparent across North America's international borders.⁷

Conventional Solutions

The traditional solution to environmental problems within the U.S. has been through federal government policy and protracted legal battles.⁸ The federal government is relied upon to adequately balance the competing demands for common property resources, both within generations and between generations, thus avoiding a 'tragedy of the commons scenario'. Since it has jurisdiction over the entire U.S., it alone is in a position to create national priorities and require states to keep pace. The U.S. federal court system is often characterized as the engine in this system, since so many statutes require judicial interpretation to harmonize the various layers.⁹

It is often assumed that a similar solution is appropriate for transboundary environmental problems.¹⁰ This logic has been a point of departure for attempts at transboundary management in the past. From the Boundary Waters Treaty of 1909 to the 1999 addendum to the Pacific Salmon Treaty, legally binding international treaties were negotiated between the U.S. and its neighbors. There were few, if any, environmental concerns included in these treaties. Instead, they divvied up natural resource stocks and balanced naturally asymmetric relationships, such as rivers flowing from the U.S. into Mexico.

The new management paradigms do not fit with this approach. The complex bureaucratic machinery required to negotiate a treaty is not flexible enough to incorporate the rapidly changing base of scientific knowledge that drives the new paradigms. This fact removes the potential for an overarching government institution to police the behavior of individual actors in adjacent nation-states. According to conventional wisdom, without the possibility of an overarching institution it becomes exceedingly difficult to harmonize differing values.

However, the U.S. experience is unlike that of its neighbors. Canada, for example, has a relatively weak federal government with minimal enforcement authority. Instead, the power rests at the provincial level. Environmental policy is crafted through a much different process, often involving extended multiparty negotiation. Legal remedies, compared to the U.S., are rarely used since relevant parties all had a hand in shaping the policy. For these reasons, using institutional international treaties to create a binational situation similar to that in the U.S. is not warmly embraced in Canada.

Looking Across Borders

As the world seemingly shrinks with the rapidly increasing number of linkages between countries, the necessity of working across these borders becomes inevitable. The need to find a new method for working across borders to deal with natural resource issues grows larger each year. In many cases, stakeholders have unwittingly implemented a promising decision-making model that relies upon cooperation, coordination, communication, and adaptability in *spite* of the traditional divisions. Several cases in point include:

- A fisheries biologist for a Native American tribe and a Canadian provincial biologist cooperated to create a transboundary fish hatchery along the Kootenay River, where hatchlings from the U.S. are reared in Canadian lakes and eventually returned to the U.S. where they live out their adult lives.
- A group of like-minded state and provincial coastal managers from the U.S. and Canada turned an informal annual meeting into the Gulf of Maine Council on the Marine Environment.
- In response to concerns highlighted by the 1983 La Paz Agreement regarding poor sewage treatment practices within the binational Tijuana River watershed, academics on both sides of the border have come together to compile a common environmental quality data set through the creation of a transboundary geographic information system.

Interest in determining ways in which effective collaboration across borders might occur motivated this study. On its face, the small number of transboundary projects in and of itself seemed to suggest that the international border presented insurmountable obstacles. However, the theoretical framework captured by the new management paradigms *should* circumnavigate an international border in the same fashion it negotiates agency jurisdiction or domestic political borders.

Research Objectives and Questions

The difficulties described above are apparent in regions all along both U.S. borders. This project began when stakeholders in Montana raised concerns about the management of the Flathead Basin, which falls in the state of Montana and the Province of British Columbia. The Montana Wilderness Association (MWA), a statewide non-profit environmental organization, has been struggling to find ways to enhance transboundary attention to the Flathead Basin ecosystem. Consequently, they asked project members the simple question “What have others done?” They were interested in what triggered transboundary efforts in other places as well as in what forms these efforts took. MWA wondered what the experiences of the other efforts might suggest for enhancing transboundary management in the Flathead Basin. Our overall objective in this study is to help groups like MWA understand the particular challenges inherent in international transboundary collaboration and to learn from other groups that are surmounting these challenges in different ways.

MWA had a number of concerns particular to the Flathead Basin. There are very different land management practices and priorities between the two jurisdictions. These differences have profound effects on the natural resources in the region. Migratory

animals such as the grizzly bear and the wolf do not stop for an international border and were not being protected equally on each side of the 49th parallel. Another concern was the quality of water in the region and the ability of the state of Montana to maintain its water quality without the cooperation of its Canadian neighbor.

In order to address the concerns of MWA as well as similar concerns in other transboundary regions, we focused on two primary questions. Answering these overarching questions led to insights into how transboundary collaboration in the Flathead region might be facilitated. In order to improve management of a region such as the Flathead Basin, we found that it is necessary to begin with collaboration. Not only could our findings be useful to the stakeholders in Montana, but we were also able to glean general lessons about working across international borders from the answers to these overarching questions. These general lessons are applicable to transboundary efforts throughout the U.S.

Working Definitions

Transboundary— *across or beyond an international border*

Collaboration— *a multi-stakeholder approach to consensus based natural resource problem solving*

Ecosystem management— *a new approach to resource management that considers a broader, more holistic view of ecological systems, processes, and management activities*

These primary questions include:

- **How is the management of natural resources across international borders similar to and different from cases that involve domestic ecosystem management?**
 - Does the presence of an international border have an effect on the coordinated stewardship of shared natural systems in ways that are different from transboundary efforts that do not involve an international border?
 - How are international management efforts different from or similar to domestic efforts to manage across jurisdictional boundaries?
- **Recognizing that collaboration is essential to ecosystem management, how is collaboration across international borders different from and similar to collaboration within a single nation?**
 - What are the unique barriers present with transboundary collaboration?
 - What are the facilitating factors that led to international cooperation?
 - Does organizational structure matter when working across borders? Is a particular structure necessary to facilitate cooperation across international borders?
 - Does the level of “institutionalization” of an effort matter? Is it necessary to have a treaty or binding agreement between the federal governments in order to make progress towards collaboration?

OVERVIEW OF THIS STUDY

This report has two major parts. Part I contains the background and analytical pieces of the study while Part II includes detailed descriptions of eight transboundary case studies.

Chapter One introduces the study and highlights our objectives. Chapter Two is a brief description of the current situation in the Flathead River Basin. It is important to understand this region because this is where our client is located. MWA is interested in learning more about what facilitates transboundary collaboration and how efforts in other regions can inform their efforts.

Chapter Three contains an overview of the existing literature on a number of relevant topics including collaboration, ecosystem management, and the difficulties inherent in working across international borders. Chapter Four describes the methodology used for the entire project, including an explanation of the ways in which we narrowed the cases down to the eight finalists that were considered in-depth.

Following the methodological description is the cross-case analysis in Chapter Five. This chapter includes a synthesis of the findings from all of the eight case studies. These findings are broken into two categories, those that are relevant to any collaborative effort and those that are unique to transboundary collaborative efforts.

Chapter Six brings the project back to the Flathead River Basin. This chapter applies the findings from the cross-case analysis to the specific circumstances present in the Flathead region suggesting factors that MWA should consider as it continues its efforts to encourage transboundary collaboration in that basin.

Chapter Seven, the conclusion, describes some of the elements of transboundary collaboration that we found to be particularly interesting, surprising, and useful. This chapter, which ends Part I, also poses some preliminary questions for individuals or organizations hoping to establish a sustainable transboundary collaborative process.

Part II contains the eight in-depth case studies developed for this project. It provides a brief overview of the cases, followed by individual chapters for each case. The case study chapters, Chapters Eight through Fifteen, include a general description of the area under study, a survey of the history of collaboration in the region, an explanation of the current transboundary efforts in the region, as well as lessons that come from each specific case.

Finally, there are two Appendices. Appendix A includes a two to three page summary of each of the fourteen original cases that were not considered in-depth. Appendix B is the list of questions used to guide the interviews for our in-depth case studies.

ENDNOTES

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⁹ See Zygmunt J.B. Plater, Robert H. Abrams, William Goldfarb, and Robert L. Graham, *Environmental law and Policy: Nature, Law, and Society*, (St. Paul, Minn.; West Publishing Co., 1998), 301-322, 375-438, and 965-982.

¹⁰ Oran Young, *International Governance: Protecting the Environment in a Stateless Society*, (Ithaca, N.Y.: Cornell University Press, 1994).

THE FLATHEAD SITUATION

INTRODUCTION

Situated at a crossroads between the skewed environmental management structures of the U.S. and Canada, the Flathead River Basin is an area ripe for transboundary action. The near-pristine quality, abundance, and majestic character of this region's natural resources support the economic interests and ecological processes which capture the very essence of this unique area. Threats to the integrity of the Flathead ecosystem have increased over time, reaching the point where resource protection and the sustainability of extractive industries must be proactively addressed. Bisected by the U.S.-Canada border, the Flathead watershed requires binational commitment to its preservation. This chapter summarized the nature of the various resource-related problems faced by the Flathead River Basin, as well as current and potential transboundary actors and the avenues through which they are hoping to "save" the Flathead.

BACKGROUND

The 1,600 square mile (2574.4 square kilometer) transboundary Flathead basin follows below the west flank of the Continental Divide from southeastern British Columbia to northwestern Montana. This basin drains the North Fork of the Flathead River from its headwaters in British Columbia (where it is called the Flathead River) south for 78 miles¹ where it joins the Middle and South Forks upstream of Flathead Lake in Montana. There are fewer than 100 year-round residents living within the Basin, but this number can more than double during the summer months.² Currently, all year-round residents live in the U.S. portion of the basin.³ Because of its physical setting, high quality habitat, and naturally functioning predator-prey system, the Flathead Basin is one of the most biologically rich and ecologically important areas in North America.⁴

Any discussion of the Flathead Basin must address its larger context. At the continental scale, the Basin lies within the heart of what is often considered to be the Yellowstone-to-Yukon (Y2Y) ecoregion, which spans the Rocky Mountains from Yellowstone National Park in the U.S. to Yukon Territory in Canada. In the center of this ecoregion, several core protected areas are found along the U.S./Canada border. These include Glacier National Park and the Akamina-Kishinena Provincial Park, which provide critical wildlife migration corridors between these areas, the Bob Marshall Wilderness complex to the south, and the Banff area national parks to the north. This interconnected network is often referred to as the Crown of the Continent ecosystem.⁵

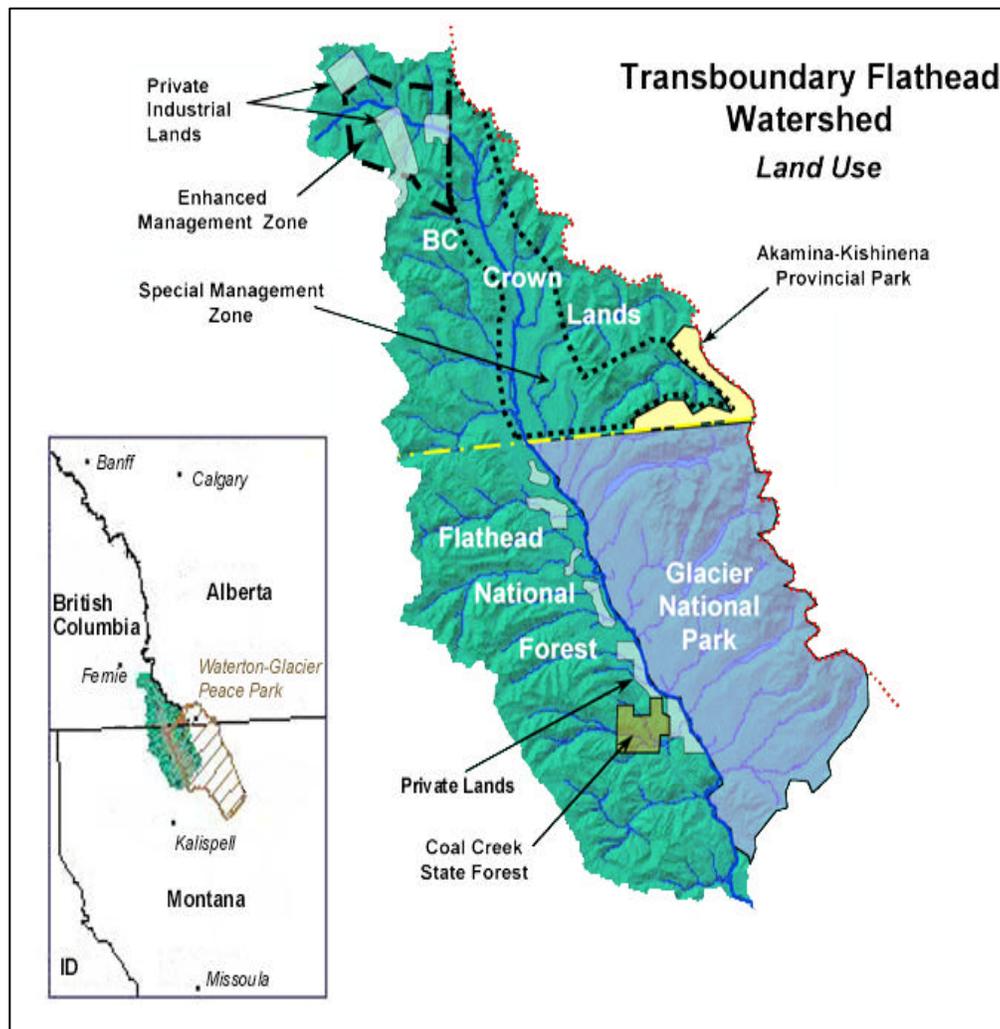
Besides its publicly managed parks, the Flathead Basin is comprised of a mosaic of land ownership patterns that includes Flathead National Forest, as well as State and privately owned lands on the U.S. side of the border. In British Columbia, the Basin is almost entirely comprised

of Crown Lands, administered by the Provincial government. The diversity of landowners in the Basin gives rise to several different federal and non-federal land management practices.

Land Ownership and Management

In Montana, the Federal government manages 93.5% of the land within the Flathead Basin. Most of the eastern part of this portion of the Basin, from the river to the crest of the Divide, is located within Glacier National Park. The National Park Service manages this area as wilderness in order to provide habitat for wildlife and to preserve the rustic character of the valley.⁶ The Flathead National Forest is similarly managed for habitat purposes, remaining semi-primitive “in order to preserve its charm.”⁷

The North Fork of the Flathead River itself is designated a National Wild and Scenic River. This status protects the river by prohibiting development within ¼-mile of its banks.⁸ A patchwork of privately owned lands along the valley floor comprises 2.7% of the land area. These lands have



been under increasing pressure for residential development and have the potential to carry over 400 additional home sites in the valley.⁹ The State of Montana administers almost 4% of the land area, including Coal Creek State Forest and other holdings.¹⁰

Within British Columbia, most of the basin is Provincial Crown Land administered by the British Columbia Ministry of Forests, which controls two-thirds of the public lands in the Province. Exceptions include the Akamina-Kishenena Provincial Park which lies adjacent to Waterton Lakes National Park. This Park is managed by the Ministry of Environment, Lands and Parks, an agency with a resource protection mandate. In addition, there are several scattered private holdings, such as the old Flathead Townsite, that are owned by logging and mining companies.¹¹

Land use planning on Crown Lands is administered by the Land Use Coordination Office (LUCO). In the early 1990s, the Provincial government initiated a collaborative planning process for its lands called the Commission on Resources and Environment (CORE). The CORE process, which has since been abandoned, resulted in the East Kootenay Land Use Plan. Besides the designation of the Akamina-Kishenena Provincial Park as a protected area, this Plan also designated other resource management zones for the Flathead Basin. The *Special Resource Management Zone*, which includes the Flathead River's riparian corridor, is open for development but must be managed to respect sensitive areas. The *Enhanced Resource Management Zone*, which covers the northwest corner of the basin, emphasizes resource extraction above natural resource protection.¹²

Future management considerations in the Canadian portion of the Flathead need to recognize that the Basin falls into the traditional territory of the Ktunaxa-Kinbasket First Nation and is included in the "statement of intent" for treaty negotiations over the settlement of aboriginal land claims.¹³ While the B.C. government expects that these treaties will result in the conversion of about 5% of the land base to First Nations, a great deal of uncertainty looms over the settlement of these claims as well as the future of the lands that are involved.¹⁴

Ecological Values

The most significant ecological values of the Flathead Basin lie within the riparian corridor that follows the river through the broad valley floor. This corridor is recognized to be one of the world's richest and least disturbed floodplain ecosystems. The intact Flathead watershed maintains nearly pristine water quality, and is home to the highest diversity of aquatic invertebrate species in the region.¹⁵ Providing habitat for a number of federally listed species like the threatened bull trout, this corridor is vital to the survival of the region's wildlife. It houses North America's highest density population of non-coastal grizzly bears and also supports a source population of gray wolves that have re-colonized the Northern Rockies of the U.S.

Because of their rarity, vulnerability, and social and ecological significance, the grizzly bear, gray wolf, and bull trout have been the focus of conservation efforts in the basin.¹⁶ However, the Flathead basin is also recognized for its overall species and habitat diversity. Basin habitats support several rare plant communities and old-growth forest areas and was home to the woodland caribou, which was last seen in 1936.¹⁷ The basin also provides important habitat for more common predators such as black bears, cougars, and lynx, as well as prey species including bighorn sheep, elk, moose, mountain goats, mule deer, and white-tailed deer.¹⁸

Ecosystem Threats

Since the late 1800's, resource extraction has defined the regional economies on both sides of the border. While both Montana and British Columbia have supported prosperous logging, mining and fossil fuel industries, logging has been the only significant extractive industry within the Flathead basin. However, the potential for industrial mining, specifically within the Canadian portion of the basin, poses serious threats to the integrity of the ecosystem.

In recent years, the Canadian Flathead watershed has been the focus of plans for large-scale, open pit coalmines. Fording Coal Ltd., Canada's largest coal mining company, currently owns three potential mine sites in the basin. While some exploratory drilling has occurred, there are currently no planned mines.¹⁹ The development of coalmines in this area could have significant impacts on the ecosystem, ranging from habitat destruction and fragmentation to water quality impacts from sedimentation, heavy metal leaching and chemical contamination.²⁰

A more immediate threat to the basin lies in large-scale timber production that is planned on the BC Crown Lands. Besides the consequences of clear cutting and old-growth removal, the most significant impacts of logging come from the associated road building.²¹ Besides habitat fragmentation, forest roads contribute to erosion and stream sedimentation, and also improve hunting and poaching access to remote wildlife habitat areas. In Montana, commercial logging has steadily declined over the last decade, and the U.S. Forest Service is now focused on maintaining habitat for grizzly bear.²²

The Flathead Basin has been eyed for oil and gas production for over a century, though no significant quantities have ever been found. While exploration is currently at a standstill, the Geological Survey of Canada estimates the potential for massive quantities of gas, oil and coal bed methane in and around the Flathead Basin.²³

Recreational activities ranging from backcountry camping to the use of motorized off-road vehicles on forest roads have cumulative impacts on quality wildlife habitats. Regulated hunting and trapping occur throughout the basin (with the exception of Glacier National Park), and in British Columbia, the hunting of grizzly bears and wolves is permitted.²⁴ The Endangered Species Act protects these species from hunting in the United States.

While large-scale resource extraction is the largest threat to the Canadian part of the Flathead Basin, continued residential development in the United States is also a formidable threat to the ecosystem. Privately-owned lands in the U.S. constitute a small portion of the land base, but their location along the valley floor make them critical to the maintenance of habitat and corridors for numerous wildlife species.²⁵ The subdivision and development of these lands, and the infrastructure developments that they would require, could severely impact the function and connectivity of the basin ecosystem, as well as its connections to surrounding areas.

Although the direct impacts of all of the above threats are generally local, the repercussions of their indirect impacts would likely be felt throughout the region. This underscores the transboundary nature and vulnerability of the basin's ecological resources, as well as the need for coordinated binational management of the watershed. This interconnectedness is illustrated by the following observation:

“What Canada does is the key to all conservation efforts in the North Fork. If British Columbia should develop a coal mine along the Canadian North Fork, all efforts in the basin would be endangered in spite of any activities to preserve the area in the U.S.”²⁶

Incidentally, the converse is also true, as pointed out by a representative of The Nature Conservancy when she says: “It behooves us on the U.S. side to show that we’re serious about conservation on our own side before we start telling the Canadians what to do.”²⁷ These sentiments have been summarized in the following statement made by the International Joint Commission: “It should also be expected that the country invoking a higher standard take every possible measure to maintain that standard in its own territory.”²⁸

Emergence of Transboundary Conservation Strategies

In the 1970s, Sage Creek Coal Ltd. proposed developing an open-pit coal mine and town near the confluence of Cabin Creek and the Flathead River, six miles north of the international border.²⁹ This proposed mine galvanized environmental and community activists downstream in Montana, who were concerned about the impacts that the mine would have on the North Fork Flathead River and Flathead Lake. The ensuing controversy prompted Montana’s Governor Ted Schwinden (R) to recommend the designation of an International Conservation Reserve.³⁰

Meanwhile in 1984, Montana’s Senator Max Baucus (D) successfully campaigned to have the situation reviewed by the International Joint Commission (IJC). After four years of study, the IJC recommended that the mine should not be developed because of its transboundary impacts. The IJC went further to advise that both countries develop a “creative, binational approach... for defining and implementing compatible, equitable and sustainable development activities and management activities in the upper Flathead River basin,” in effect, endorsing the concept of an International Conservation Reserve.³¹

Since the demise of the Cabin Creek mine in 1988, the saliency of the Flathead has disappeared in the public eye. Behind the scenes however, many organizations have been steadily working to protect the Flathead ecosystem against continued residential development on the U.S. side and the ever-present threat of another mine in the Canadian Flathead. In Montana, The Nature Conservancy has been very active in the basin, targeting private lands in the U.S. for conservation.³² In Canada, the East Kootenay Environmental Society (EKES) has been working with logging companies to ensure that logging plans protect ecologically important natural areas.³³ In addition, these organizations and others have been working together to develop a better understanding of the basin’s resources and advocating for their protection.³⁴ In recent years, the Montana Wilderness Association (MWA) has been working with EKES to rejuvenate efforts to protect the Flathead basin as a holistic ecosystem. This alliance has spawned the formation of an informal group of organizations, agencies and individuals that calls itself the Flathead Transboundary Network.

PRINCIPAL STAKEHOLDERS AND PARTNERSHIPS

Many people maintain strong attachments to the region defined by the drainage basin of the North Fork of the Flathead River. Their concerns range in nature from economic resources to

environmental values and cultural heritage. Likewise, the stakeholders themselves vary widely, including governmental institutions on one end to local citizens on the other.

Government

International

Due to the unique and pristine nature of the region's natural resources, the Flathead has captured the interest of international governmental groups like the United Nations Environmental, Scientific, and Cultural Organization (UNESCO) which designated both Glacier and Waterton Lakes National Parks International Biosphere Reserves in the mid-1970s.³⁵ While such distinction is an honor, it is the U.S. and Canadian governments, at all their various levels, that play the critical role of managing these world-class resources. As mentioned earlier, the majority of land on both sides of the border is under public control.³⁶

Federal

At the federal level, the U.S. government is more intimately involved in the Flathead region than the Canadian government. Within the U.S. portion of the basin, Glacier National Park is managed by the National Park Service while Flathead National Forest falls under the jurisdiction of the U.S. Forest Service. The coordinated management of these adjacent reserves as one ecosystem unit has been complicated by the fact that these agencies operate under separate departmental mandates with different priorities. The Park Service, located within the Department of the Interior, strives "to preserved unimpaired...natural and cultural resources and values...for the enjoyment, education, and inspiration of this and future generations," while the U.S. Department of Agriculture's Forest Service takes a more utilitarian approach in its attempt "to achieve quality land management under the sustainable multiple-use management concept to meet the diverse needs of people."³⁷ Additionally, the Confederated Salish and Kootenai tribes, considered federal level entities under U.S. law, own the southern half of Flathead Lake and have long used this resource to support their sustenance fishing traditions.³⁸

Provincial

In Canada, the national government overall plays a much smaller oversight role than that of the federal government in the U.S., as a large amount of power and discretion is delegated to provincial authorities. As discussed earlier, practically all of the land within the Canadian portion of the Flathead basin is provincially managed crown land.³⁹ Unlike the United States, where the federal government sets minimum regulatory standards for environmental protection, the Canadian federal government hands over complete authority on this issue to the provinces. The B.C. Ministry of Forests has primary jurisdiction over the Flathead's crown lands and is mandated to: "a) encourage maximum resource productivity; b) manage resources responsibly to achieve the greatest short- and long-term social benefits; c) practice integrated resource management; d) encourage a globally competitive forest industry; and e) assert the financial interest of the Crown."⁴⁰ Additionally, the Ministries of Environment, Land, and Parks (ELP) and Energy and Mines are peripherally involved in the Flathead watershed.

State

The State of Montana, while not as directly involved in the on-the-ground management of Flathead basin lands as the Province of B.C., has created an entity which has had significant

regional impact in monitoring environmental quality. This quasi-governmental actor is the Flathead Basin Commission (FBC), created by the Montana legislature in 1983 in response to a controversy surrounding the siting of a coal mine within the Canadian Flathead watershed. Officially located within the Governor's office, FBC's founding mission is the "help address concerns about the environmental impact of proposed development and resource extraction in the B.C. portion of the Flathead drainage."⁴¹ The membership of the FBC includes representatives from local, state, tribal, and federal agencies. Once very active and community driven, the FBC has lost some of its influence in recent years due to its institutionalization within the state bureaucracy.⁴²

The Flathead Transboundary Network

In order to balance the overwhelming federal government presence in the binational Flathead region, two non-governmental, nonprofit organizations, the Montana Wilderness Association (MWA) and the East Kootenay Environmental Society (EKES) have forged a working alliance with each other and additional stakeholders through the Flathead Transboundary Network (FTN). Initiated in 1998, the FTN is a loosely organized consortium of conservation groups, Flathead landowners, individuals, and agency representatives whose self-appointed mission is "to identify the ecological values of the Flathead and threats to the transboundary watershed."⁴³

To date, their primary goal has been the establishment of an International Conservation Reserve (ICR) for the Transboundary Flathead. An ICR, as defined by the FTN, is a legally binding agreement between the U.S. and Canadian governments which would designate the Transboundary Flathead as an "internationally significant ecological watershed."⁴⁴ Such designation, while not creating new government agencies or ministries, would necessitate a commitment by both governments to ensure the protection of critical habitats and holistic ecosystem functions on their public lands within the region. The specific objectives of an ICR include:

- Establishment of a Transboundary Council to develop and implement a transboundary management plan for the basin.
- Designation of ecologically important areas on public land for "specific conservation objectives."
- Protection of habitat quality and connectivity on private lands, while discouraging inappropriate activities.
- Maintaining traditional human uses, including recreation, rustic residential living, and traditional First Nations and Native American uses of the basin.
- Continue to expand the development of technologies that conserve sensitive species and allow for commodity production.⁴⁵

According to the current proposal, the ICR would either be designated by the U.S. and Canadian governments under the authority of the 1909 Boundary Waters Treaty, or through a Memorandum of Understanding between the Federal, State and Provincial governments. Once established, the ICR would be administered by the Transboundary Council which would include the heads of the State and Provincial governments, and citizens appointed by various Federal, State/Provincial, and local governmental bodies.⁴⁶

FTN members have taken it upon themselves to educate the public and pertinent government entities about the ICR's potential to save all that is ecologically precious about the Flathead

basin. They advocate that the strict and enforceable nature of an ICR is what is needed to preserve the ecological integrity of the Transboundary Flathead from the sprawling development and resource extraction projects that threaten to destroy the region's resources irreversibly.⁴⁷

Yellowstone-to-Yukon Conservation Initiative

Cited by the FTN as the “jewel” in the greater Crown of the Continent ecosystem, the Flathead basin maintains an integral position in the efforts of larger landscape conservation efforts. Decisions regarding if and how to collaborate with such projects has presented the FTN with certain programmatic and focus-related challenges. However, FTN's commitment to securing local support and international recognition simultaneously could be furthered through strategic partnerships with more prominent coalitions. For example, the internationally acclaimed Yellowstone-to-Yukon Conservation Initiative (Y2Y) is actively interested in the binational Flathead region. Although the purview of this program stretches from the Yukon's Mackenzie Mountains to Yellowstone National Park, the Flathead River basin is indisputably an essential link in this chain. Initiated by the Canadian Parks and Wilderness Society (CPAWS) and the U.S.-based Wildlands Project, Y2Y seeks to engage conservation practitioners in “restor[ing] and maintain[ing] landscapes and habitat connectivity...by establishing a system of core protected wildlife reserves that are linked by...habitat and movement corridors.”⁴⁸ While not operating on the same scale, FTN can clearly benefit from Y2Y's work in their region. As a result, several FTN members are now participating in Y2Y's transboundary work group.

Local Efforts

The challenge of coordinating with related efforts exists at the local level as well as internationally. The depth of personal connections to the Flathead region, whether they be environmentally or economically driven, has stimulated the development of numerous local citizens groups. While defending issues ranging from water quality to public land management to economic development, these efforts have the same focus area and should capitalize on this commonality. Collaborative decision making and partnerships can help bridge current interests as well as enhance the capacity of agencies and communities to deal with problems in the future.⁴⁹ Although easier said than done, a commitment to cooperation could enhance the legitimacy of a group like the FTN in the eyes of all regional residents.

Other Important Stakeholders

The variety of stakeholders in the Flathead basin calls for wide representation of these various sectors in any attempt to successfully protect the ecological resources of the region in a sustainable manner.

Non-governmental Organizations

In addition to MWA, EKES, and the myriad of local efforts referred to previously, there are other non-governmental organizations active in the Flathead basin. For example, The Nature Conservancy of Montana (TNC) has established itself among locals as a trustworthy voice of reason in the debate over sound management of the Flathead's natural resources.⁵⁰ TNC has worked with many of the landowners along the Flathead's riparian corridor in the U.S. to secure conservation easements on these properties. They have also initiated transboundary protection strategy discussions with their Canadian counterparts. In Canada, groups like the Canadian

Parks and Wilderness Society (CPAWS) are working on their side of the Flathead basin to protect the environmental integrity of existing wilderness areas.⁵¹ Regional and local land trusts in the U.S. have also taken a special interest in preserving the biodiversity and cultural heritage of the Flathead area. In particular, the Flathead Land Trust and the Montana Land Alliance are working in northwest Montana to protect “the scenic landscape, fish and wildlife habitat, and productive agricultural lands.”⁵² The Montana Agricultural Heritage Commission is assisting these efforts through a new state program which provides grants “to fund acquisition of conservation easements from willing sellers and donors to help stem the loss of critical farm, ranch, and forest lands to inappropriate development.”⁵³

Industry

There are also a number of groups and individuals that have been resistant to conservation efforts in the Flathead region, fearing that such actions would be detrimental to resource-based economic development. The timber and mining industries in B.C. have been particularly vocal.⁵⁴ In addition, real estate developers and private property rights advocates in the U.S. have expressed concern over what they would consider to be “takings” enacted by any government agency attempting to revoke more land from private hands to further their conservation mandates.⁵⁵ U.S.-based organizations like Montanans for Multiple Use and Women in Timber are working hard to advocate the interests of mining, logging, farming, ranching, and motorized recreation in the region. Issues surrounding public lands access for snowmobiles, off-road vehicles, hunting, and fishing are currently very hot topics of debate. In general, the political sentiment surrounding the greater Flathead area, particularly on the U.S. side of the border, is conservative and leery of federal government restrictions of any type.

Academic and Research Institutions

The Flathead drainage is part of a large ecological unit that is home to some of the “last vestiges of North America’s great biological heritage.”⁵⁶ For this reason and others, there are numerous ongoing research projects that use the Flathead River basin as its laboratory. The opportunity to study “landscape species,” those animals with a large home range like the grizzly bear and gray wolf, has long attracted researchers to the region.⁵⁷ In addition, the patchwork of public and private lands within the basin has allowed for various studies of human environmental impacts to be conducted.⁵⁸

COLLABORATIVE INFRASTRUCTURE

Despite the inherent differing interests among members of the greater Flathead community, all stakeholders are connected “as much by their concerns and problems as they are by the region’s common flora, fauna, and natural forces.”⁵⁹ Rarely is a problem one-sided, meaning that some level of cooperation among opposing forces is needed in order for any type of sustainable solution to materialize. Luckily, the Flathead region enjoys a strong and varied collaborative base from which to build.

Facilitating Factors

Not only has Montana TNC established very good relationships with locals in the Flathead region, it has also forged partnerships with a number of other critical stakeholders. Currently,

the northwest field office is working with the provinces of B.C. and Alberta to protect a critical wildlife migration corridor at Crowsnest Pass. TNC has also partnered with the U.S. Forest Service to help secure the Wild and Scenic designation for the North Fork of the Flathead River. Due to their efforts to acquire conservation easements along the riparian zone, TNC has been cited as a primary conservation partner by the Flathead National Forest. In the face of decreasing Land and Water Conservation fund monies which typically support such acquisition programs, the Forest Service would be unable to protect these critical lands without TNC's help.⁶⁰

Like TNC, EKES is also working closely with a number of different partners. For one, EKES is collaborating with Tembec, Inc., a B.C.-based logging company, to secure greater protection for critical natural areas in the East Kootenay region.⁶¹ EKES has also partnered with the Land Trust of B.C. to help acquire conservation easements. While EKES is founded upon principles of environmental protection, it has been careful not to exclude the interests of the many hunting and fishing organizations that are prevalent in the region. Without involving them and taking their input into consideration, EKES could have faced tremendous opposition in every step taken to achieve their goals.⁶²

Existing Barriers

Although the tradition of partnerships has been successfully initiated by groups in the region like TNC and EKES, the Flathead basin still has to sort through its historical barriers to collaboration. In the mid-1990s, members of Flathead County's local planning board received death threats in response to their proposed master plan, which recommended increased zoning and other land-use strategies to curb the negative impacts of growth in the region.⁶³ Feeling that this government regulation was going to impinge upon their private property rights, master plan opponents launched a fierce counterattack against any attempts to manage the Flathead region on a watershed or ecosystem basis.⁶⁴ Despite their attempts to educate and engage the public in the development of the plan, County officials could simply not get groups like Montanans for Property Rights to even consider the idea.

Conversely, although equally as frustrating, has been the reluctance of the B.C. government to participate in joint resource management efforts initiated by the Flathead Transboundary Network. In the fall of 1999, the FTN approached the International Joint Commission regarding the potential for establishing an international watershed board in their region.⁶⁵ The watershed board concept is one of the IJC's newer initiatives, aimed at engaging local stakeholders in effective ecosystem management.⁶⁶ The FTN felt the greater Flathead area was ripe for such a board. However, the B.C. government expressed unwavering resistance to having the federal government involved in any aspect of natural resource management, which is traditionally under provincial jurisdiction. Without express consent from B.C. officials, the IJC did not feel it was appropriate to test the international watershed board concept in the Flathead region.

In addition to the obstacles illustrated by these two cases, the Flathead basin must also contend with other challenges to collaboration, such as those presented by the uneven distribution of the region's population and the lack of an institutionalized transboundary framework coordinating the work of government agencies. Without a shared sense of place, it is difficult to inspire cooperation among stakeholders with inherently different values. While environmentalists on

both sides of the border are largely united in the effort to protect the *entire* Flathead watershed, the fact that the Canadian Flathead is largely uninhabited presents few opportunities to motivate a shared sense of stewardship for the region's transboundary resources among the general citizenry.

This disconnect can also be seen among the forestry agencies in the region. For instance, a U.S. Forest Service official with the Hungry Horse Ranger District, which is in the Flathead basin, points to the fact that rangers in his district cannot even cross the border into Canada without getting prior approval from the regional or even sometimes the national office of the agency. Such restrictions clearly set a precedent and inhibit any type of spontaneous transboundary collaboration.⁶⁷

CONCLUSION

Although the challenges to transboundary resource management in the Flathead River Basin abound, there are advocates on both sides of the border who have been and will continue to pursue the implementation of binational activities aimed at sustaining this region's critical natural resources. There are clearly aspects of the Flathead situation that make it unique when compared to other transboundary efforts, but, as this report hopes to demonstrate, there are commonalities across cases and lessons that can be learned from previous experiences. With such advice in hand, those who are committed to finding transboundary solutions to the protection of the Flathead will be supported in their pursuit of sustainable natural resource management across an international divide.

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LITERATURE REVIEW

INTRODUCTION

Political borders were not imposed to follow the contours of natural systems. For this reason, humans have negotiated the management of ecosystems across various jurisdictions as long as maps have been drawn. From homesteaders' debates regarding irrigation water rights to the development of the Pacific Salmon Treaty, transboundary efforts in North America appear on different spatial scales. A host of theories derived from a diverse set of academic fields strive to address the truly interdisciplinary problems raised by cross-border environmental conflicts. This literature review attempts to capture the essence of transboundary ecosystem management by bounding the intellectual problem, analyzing social responses, and suggesting new frameworks for thinking about the problem.

Defining Transboundary Resources

A variety of disciplines, from economics to psychology, have brought their expertise to bear on how societies treat transboundary resources and why.¹ Not surprisingly, establishing a common understanding of the problem of managing ecosystems that transcend borders is not a simple matter. International relations scholar Oran Young laid out a classification system for international environmental problem sets that is useful as a first step. He writes that environmental problem sets are “clusters of interactive situations in which groups of interdependent actors are likely to suffer mutual losses or fail to reap joint gains in the absence of effective governance systems.”²

Young sorts potential transboundary environmental problems into four sets: commons, shared natural resources, transboundary externalities, and linked issues.

Commons problems consist of physical or biological systems that lie wholly or largely outside the jurisdiction of any one member of a society but are valued resources for the society as a whole. *Shared natural resources* problems consist of physical or biological systems that extend into or across the jurisdictions of two or more members of a society—this can involve nonrenewable or renewable resources, or complex ecosystems. *Transboundary externalities* problems arise when activities that occur wholly within one society member's jurisdiction produce results that affect the welfare of adjacent members. *Linked issues* problems consist of the unintended consequences of social institutions created to deal with environmental concerns (or vice-versa).

<p><i>Commons</i> ozone layer clean atmosphere healthy oceans</p> <p><i>Shared Natural Resources</i> complex ecosystems migratory wildlife populations</p> <p><i>Externalities</i> sulfur dioxide pollution</p> <p><i>Linked</i> international trade invasive species</p> <p><i>Source: Young (1994).</i></p>

On the whole, the literature on transboundary environmental problems aggregates these problem sets into a general class of common property problems, rarely making the distinction that Young does. Although the subtleties might seem trite, effective policy or management response to these categories are quite different: a true commons appears to require centralized authority; externalities seem to require only a method of balancing the asymmetric relationship (usually through economic compensation); shared natural resources seem to require coordinated management of the resource; and linked issues require a blended response.

Attempting to Implement Theory

Based on this analysis, the theoretical solution to the transboundary resource management is simple: coordinated cross-border activities to effect joint gains. However, this answer begs the question of why it is so difficult to coordinate management across an international border? An aspiring transboundary effort must navigate a host of obstacles to bring about this solution. These hindrances are discussed below.

Tragedy of the Commons

The general body of literature on common property is centuries old. The earliest mention of the problem appears around 350 BCE in Aristotle's *The Politics* when he writes:

For that which is common to the greatest number has the least care bestowed upon it. Every one thinks chiefly of his own, hardly at all of the common interest; and only when he is himself concerned as an individual. For besides other considerations, everybody is more inclined to neglect the duty which he expects another to fulfill; as in families many attendants are often less useful than a few.³

This element of human behavior was canonized by ecologist Garrett Hardin in his parable of the “tragedy of the commons.”⁴ Hardin observed that, if overuse of a resource offers an immediate benefit of +1 to the individual appropriator, but costs -1 *distributed amongst the general public*, it would be foolhardy for that individual not to overuse the commons—especially when costs are not realized immediately. Such action destroys the resource in the long term and thereby creates an irrational social dilemma.⁵ Humans are rational animals, but that rationality is most often applied to maximizing individual gain—not solving shared or regional problems.⁶

The Problem of Political Boundaries

Traditional governmental and societal institutions have stressed hierarchy, control, fixed jurisdiction, and a reliance on formal rules to organize themselves. This “Liberal Order” can be seen in most units of society, ranging from families to companies to governmental agencies. These institutions are central to our society and their laws and are responsible for the creation of many of the boundaries that divide our landscape into jurisdictional units.⁷ As understanding of the landscape and the ecological and social systems that depend on them has increased, so too has the recognition of some of the more problematic impacts of these divisions.

In terms of the natural environment, jurisdictions on either side of a border are likely to have their own policies for resource governance, giving rise to varying patterns of land ownership and management. When land use practices across a given ecosystem are different they inevitably create distinct ecological zones that mimic surrounding administrative boundaries. These zones can alter the movement or passage of such things as animals, plant seeds, water, and nutrients.⁸

From a social perspective, borders dramatically alter how the perception of the landscape and nature of interaction between people on either side of the border. While political boundaries promote organization through compartmentalization, they can make it difficult to coordinate the activities of the individuals, organizations and communities that are separated by that boundary. When multiple societies share the landscape of an ecologically connected resource, a lack of coordination and information exchange can lead to inefficient and inconsistent resource management to the detriment of the environment as a whole.⁹

The situation is exasperated by differences in the laws and customs between nations. An international border presents additional challenges to the already complex process of managing natural resources across multiple jurisdictions. Transnational conflicts often involve differing government structures, cultures, languages, and economic situations.¹⁰ These differences are clearly apparent, in varying degrees, across North America's international borders.¹¹

International Dimension

A comparison of endangered species protection strategies in the U.S. and Canada presents an interesting example of disjointed environmental policies between adjacent nations. In the U.S., endangered species are free to move across political boundaries from public to private lands. The natural resource management practices on these lands often differ and the value placed on the species varies in accordance. The federal Endangered Species Act, however, applies aggregate national values to the resources upon which endangered species rely and affords them a degree of enforceable protection that would, in its absence, end at the political boundary. Wildlife advocates in Canada have been pushing for similar levels of protection in their country, but to no avail, placing those endangered species that migrate across the U.S.-Canada border at considerable risk once they cross the 49th parallel northward.

Currently, there are no internationally sanctioned remedies to reconcile this situation. In fact, there are few formal institutions between countries that are aimed at creating or enforcing centralized environmental regulation despite the existence of organizations like the World Conservation Union (IUCN) or the United Nations. Thus, the joint management of shared resources between two sovereign nations is complicated by the fact that there exists *no international legal framework to govern the use and development of transboundary resources*.¹² The lack of a formal governmental authority to oversee such issues has prompted international relations scholars to refer to this aspect of international society as “anarchical”:

Throughout much of the twentieth century, a broad spectrum of students of international affairs argued that the politically decentralized or anarchical character of international society is a defect to be remedied as quickly as possible through the creation of organizations capable of governing at the international level.¹³

The common response to this “anarchy” has been the institutionalization of joint authority between two or more nation-states through a treaty or other such agreement. Negotiating formal international treaties is extraordinarily time consuming, however, and involves the highest and most bureaucratized levels of government. In the case of international environmental agreements, the government agencies empowered to create them are not necessarily endowed with natural resource specialists, complicating matters further.

Transboundary Agreements and Institutions

Varying in their effectiveness, there are a number of transboundary agreements and institutions in operation between North American neighbors. One of the earliest agreements between the United States and Canada came in 1905 with the establishment of the International Waterways Commission. This institution was created to advise the two governments on transboundary water-related issues. In 1909, the mission of this organization was formalized by the Boundary Waters Treaty and renamed the International Joint Commission (IJC).¹⁴ Throughout most of the twentieth century, the IJC continued to play its role as advisor to the Canadian and American governments. When the massive effort to remediate and manage the Great Lakes began in the 1970s, the IJC matured into an important umbrella organization and coordinating agency.¹⁵ In an attempt to bolster its efforts in the Great Lakes region, the IJC established an office in Windsor, Ontario, the only regionally focused office under the IJC.

With its mandated jurisdiction over U.S.-Canada boundary waters, the IJC has historically been the first agent of reference when disputes arise. The IJC consists of six members, three appointed by the U.S. President and three appointed by the Governor in Council of Canada with the advise of the Prime Minister.¹⁶ While the U.S. and Canada usually follow the recommendations of the IJC, it has no formal decision making authority and is unable to force the implementation of its recommendations.¹⁷ Both nations use the IJC for its "quasi-judicial" role and research capabilities, as they trust it to be objective.¹⁸ Under the IJC, transboundary protocols on water levels, the effects of hydroelectric power projects, and water allocation have been developed.¹⁹

The analogue to the IJC along the U.S.-Mexico border is the International Boundary Water Commission (IBWC). Derived from an 1889 U.S.-Mexico transboundary water agreement, the IBWC was established in 1944 by the U.S.-Mexico Water Treaty. The IBWC is mandated to manage the security and development of water resources along the U.S.-Mexico border. In the 1970s, the IBWC's focus expanded to take on cross-border water quality problems related to sewage and sanitation.²⁰ Overall, the IBWC has less power than the IJC in that it was created to be a technical agency rather than a policy advisor and is largely insulated from the public.²¹ The IBWC's relatively narrow scope

and lack of transparency have been viewed as obstacles to comprehensive binational environmental coordination.²²

Signed in 1983 by U.S. President Ronald Reagan and Mexican President Miguel de la Madrid, the La Paz Agreement of 1983 helped to institutionalize previously nonexistent communication channels between U.S. and Mexican environmental agencies. Born out of Reagan's interest in cleaning up the sewage-ridden Tijuana River, which flows from Mexico to California, the La Paz Agreement has served as a foundation for future environmental cooperation. Its main accomplishment was the creation of binational working groups* tasked with addressing issues related to transboundary natural resource management, water and air quality, and waste issues. Unfortunately, due to Mexico's declining economy, environmental problems spanning the U.S.-Mexico border have worsened over time.²³

Soon after it was signed, the La Paz Agreement evolved into the Border XXI Program, which, despite any of its shortcomings, is regarded as the most comprehensive program aimed at environmental management along the U.S.- Mexico border.²⁴ The Border XXI Program sets up an intergovernmental process that is loosely coordinated by the International Affairs offices of the U.S. Environmental Protection Agency, and Mexico's *Secretaria de Medio Ambiente y Recursos Naturales* (Secretariat of the Environment and Natural Resources – SEMARNAT).²⁵ No single agency or participant “owns” the Border XXI process or has final administrative authority over it. Instead, the coordinating agencies work in concert with the other federal agencies that have jurisdiction over the protection of specific resources.²⁶

The Border XXI program was developed amidst final negotiations pertaining to the North American Free Trade Agreement (NAFTA). Although the criticisms of NAFTA are sharp, through their signing of this treaty, “Canada, and U.S., and Mexico have turned a spotlight on an array of transboundary environmental issues which hitherto had received minimal, or at best sporadic, attention by government, industry, the media, and even NGO's.”²⁷ In response to the opposition voiced by environmental and labor groups, the goal of sustainable development was written into the treaty's preamble and an environmental side agreement, the North American Agreement on Environmental Cooperation (NAAEC) was signed. The NAAEC spawned the following environmental institutions: the Border Environment Cooperation Commission (BECC), the North American Development Bank (NADB) and the Commission for Environmental Cooperation (CEC).²⁸

Established in combination, the BECC and NADB are aimed at strengthening the environmental management infrastructure along the U.S.-Mexico border. Composed of official and non-governmental representatives from both countries, the BECC evaluates and certifies various development projects as “environmentally sustainable.” Most

* Members of these working groups included representatives of natural resource agencies and ministries from the ten state-level jurisdictions on either side of this portion of the U.S.-Mexico border region. See Kiy and Wirth (1998).

projects focus on wastewater treatment, water supply, and solid waste. With the BECC's endorsement, the NABD arranges loan financing for these projects.²⁹

The third institution created by the NAAEC, and the one with the most relevance to the natural resource and ecological issues addressed by this study, is the CEC. This Montreal, Quebec-based organization is charged to "address regional environmental concerns, help prevent potential trade and environmental conflicts, and promote effective enforcement of environmental law."³⁰ The mission of the CEC is to investigate allegations of environmental law violations within Canada, the United States, and Mexico, which have been raised by citizens or non-governmental organizations. The CEC also supports several programs that seek to prevent ongoing trade-related environmental conflicts that are related to NAFTA.³¹

Other Treaties and Agreements

There are several other treaties and agreements that are related, although somewhat less relevant to the focus of this study, to transboundary environmental management across North America's borders. With the extinction of the passenger pigeon in 1914, governments and conservationists began to realize that the protection of migratory birds was not something that a single nation could accomplish alone. Acknowledging that migratory birds know no boundaries, the Migratory Bird Treaty was signed in 1916 between the United States and Great Britain (on behalf of Canada) in order to protect the "many species of birds which in their annual migration traverse certain parts of the United States and Canada." In 1936, a similar treaty was signed with Mexico. These treaties prohibit the capture, take or harassment of migratory birds, with exceptions that includes regulated hunting.³²

For waterfowl species, the protections afforded by the Migratory Bird Treaty were not enough. By the 1980s waterfowl populations had plummeted, largely due to tremendous losses in wetland habitats. Recognizing the incessant decline of waterfowl and wetlands and the need for international protection, the Canadian and United States Governments developed the North American Waterfowl Management Plan (NAWMP) in 1986. The Canadian Minister of Environment and the U.S. Secretary of the Interior were the original signatories of the NAWMP, with Mexico signing on in 1994. This plan is implemented at regional levels, calling for partnerships between federal, state, provincial and local governments, businesses, conservation organizations, and individual citizens. These "Joint Ventures," as they are called, are intended to be transboundary in nature, in that they aim to protecting and enhancing the continental network of wetland habitat for North American waterfowl.³³ There are currently eleven Joint Venture projects in the U.S., three in Canada, and none in Mexico.³⁴

Although there are a number of environmentally oriented agreements and institutions involving a combination of or all three North American countries, none are truly comprehensive or multi-media. Instead, each reflects a functional response to a pressing, resource-specific issue, providing no transferable model for effective international transboundary environmental management.^{35 36} Instead, numerous homegrown approaches to the management of natural resource systems that cross international

borders have surfaced, and they are as diverse in approach as the landscapes and watersheds they attempt to address. Some are built from a foundation of one of the treaties or agreements mentioned above or are bolstered by a strong federal presence, and some flourish in the absence of both. And of these examples, some will succeed as models of innovation, while others will be discarded as learning experiences.

SOCIAL RESPONSES

As alluded to earlier, scholars contend that the policy response to shared natural resource problems is obvious: joint coordinated management of the resource for the benefit of all nations that share it.³⁷ But how to affect this result between two or more sovereign nations is not that easy. The inability of the previously discussed agreements and institutions to provide a truly transboundary international environmental policy framework illustrates this dilemma. In addition, it is not clear that management at the nation-state level, such as is prescribed by most international treaties, is appropriate in all circumstances. For example, the Porcupine Caribou herd, one of the last remaining free-range herds in North America, is jointly managed by U.S. and Canadian officials through a formal treaty, yet management activities have only been complicated by the addition of what has amounted to little more than bureaucratic red tape. The case of the Kootenay River White Sturgeon also raises concern, although as the converse situation. This subspecies of sturgeon is listed as endangered in the U.S. and as a species of concern in Canada. Its management is coordinated across the international border, to the limited extent possible, by the only two resource managers in the valley, although they have no formal authority for cross-border collaboration.

Nevertheless, the traditional solution to this problem is to trust the public sector to adequately balance the competing demands for common property resources, both within generations and between generations. Legendary economist Adam Smith framed the situation this way in 1776:

Lands for the purpose of pleasure and magnificence—parks, gardens, public walks, etc., possessions which are everywhere considered as causes of expense, not as sources of revenue—seem to be the only lands which, in a great and civilized monarchy, ought to belong to the crown.³⁸

Likewise, Hardin's own solution to the tragedy of the commons echoes this sentiment — that centralizing management authority is the only way to create socially beneficial behavior. He advocated, "mutual coercion mutually agreed upon" as the best answer.³⁹ Government reinforcement, however, is no guarantee that the goals of resource management will be met. According to Oran Young, "Simply establishing a government or a collection of governmental organizations, we have learned from painful experience, offers no assurance that the function of governance will be fulfilled effectively, efficiently, and equitably; it may impose terrible costs at both the individual and societal levels."⁴⁰ As a result, practitioners have sought solutions to the complexities of

managing of a resource base shared across international borders that have, intentionally or unintentionally, strayed from traditional management schemes.

TRANSBOUNDARY ECOSYSTEM MANAGEMENT

This section distinguishes transboundary ecosystem management from other responses to the problems of international common property resources. In essence, ecosystem management embodies the most contemporary wave of approaches to the holistic management of the natural environment.

General Principles of Ecosystem Management

In the most general sense, ecosystem management is a term that refers to a comprehensive natural resource management paradigm that is guided by the patterns and behaviors of naturally functioning systems rather than jurisdictional mandates. While there are differences of opinion regarding exactly what ecosystem management entails, there is a set of generally agreed upon themes or principles of ecosystem management (EM).⁴¹

These general principles include:

- *The consideration of multiple temporal and spatial scales.* Considering the health and condition of entire ecosystems for generations to come.⁴²
- *Interagency cooperation.* As ecosystems transcend jurisdictional boundaries, it is important that agencies coordinate their management plans and activities.
- *Collaborative decision-making.* The diverse needs and interests of organizations and individuals within these larger areas need to be considered.⁴³
- *A shift toward adaptive management.* Recognizing uncertainty, management actions must be dynamic and responsive to new information as it becomes available.⁴⁴

While acknowledging that humans have a distinct place in the environment, EM focuses on preserving and restoring the natural processes of an ecosystem. It also recognizes that resource managers will rarely have all of the necessary information to make a decision but must work with what they have and must take into consideration more than just scientific factors when managing an area. Indeed, science rarely translates directly into policy, so resource managers must also consider social, political, cultural and economic factors when making management decisions.⁴⁵

The Role of Collaboration in Ecosystem Management

To achieve EM, it is clear that improved and, in some cases, new relationships between and among private landowners and government land managers need to be fostered. In order for this to occur, communication networks and opportunities for sharing information need to be created or utilized to their fullest potential.⁴⁶ Historically, the relationships between major stakeholder groups in the natural resource management realm -- namely, scientists, land managers, environmental policymakers, and local citizens -- have been competitive.⁴⁷ As a result of these adversarial situations, the

environment has suffered from disjointed and even counterproductive attempts to control its productivity.

EM attempts to rebuild the bridges that have been burned between these groups by advocating a perspective in which all stakeholders are connected in their concerns for a common ecosystem. Implicit to this process is the act of bringing people together and integrating their interests into a natural resource management plan that can be supported by all parties. Although this study does not purport that EM is “simply a process of collaborative decision making,” as some believe it to be,⁴⁸ it does build from the premise that collaboration is essential to initiating effective EM. Ultimately, EM is the outcome these collaborative efforts hope to achieve.

Solid partnerships between relevant stakeholders are essential to successful management of any natural system but particularly to ecosystems that cross an international border. In addition to the struggle undertaken to redefine resource management along ecological rather than jurisdictional boundaries, international transboundary efforts have an added layer of complexity imposed by the interaction of entirely separate countries. The establishment of effective and sustainable collaborative processes in these situations is not only desired, it is essential and yet more difficult to achieve. However, EM is proving to be a unifying force in the realm of transboundary resource stewardship, and collaboration is the first step in this process. A more detailed discussion of collaboration in a natural resource management context comes later in this chapter.

Ecosystem Management and Transboundary Situations

As ecosystems rarely correlate with jurisdictional boundaries, effective ecosystem management implies that management plans and actions need to be coordinated across those boundaries. It almost goes without saying that this must occur in a transboundary context, particularly one involving more than one country. In order to successfully manage a resource that crosses an international border, parties must take a systems approach, work to bring all associated interests to the management table, and be willing to consider much larger and different management scales.

COLLABORATION ACROSS BORDERS

As traditional management boundaries dissolve under the ecosystem management framework and more stakeholders enter the mix, cooperation becomes a necessity in the effort to effectively manage critical large-scale landscapes. Clearly, effective means of collaborating are becoming increasingly important in these circumstances. As the world seemingly shrinks with the increasing numbers of virtual and actual linkages around the world, the necessity of working across international borders becomes inevitable.

Barriers to Progress

Unfortunately, political boundaries, particularly those between countries, inherently inhibit collaboration. Joint management of environmental resources faces many challenges in addition to those that are intensified by international divisions. Many of

these barriers are psychological but deep-set, including a perception of seemingly different value systems among parties, negative preconceived notions about collaboration, and what psychologist Max Bazerman has called the “myth of the fixed pie.”⁴⁹ The “fixed pie” refers to the notion of a zero-sum game, where gains to one party can only be seen by other parties as losses to be incurred by them. Such an idea is rooted in competitive behavior, which is often associated with U.S. culture and may have complicated North America’s attempts to work on environmental issues on a transboundary basis.⁵⁰

Fears associated with the collaborative process itself also interfere with efforts to encourage multi-party cooperation. In particular, members of non-governmental organizations (NGOs) have expressed concern over becoming involved in “collaborative” processes because they see such efforts as subversive attempts by more powerful stakeholders, namely industry or government, to “water down” their stances.⁵¹ As a result, some NGOs have been reluctant to surrender their role as “watchdog” to become party to a collaborative process. Other complications and issues which discourage organic collaboration include difficulties in gathering all representative stakeholders, historically ineffective management of unwieldy multi-party efforts, and the failure of the process to fit into established decision-making structures.⁵²

Elements of Success

Despite these potential complications, collaboration is essential to the future of successful transboundary ecosystem management.⁵³ It is not effective for jurisdictions sharing a natural resource base are work at odds or replicating processes unnecessarily when their efforts could be coordinated. Cross-border collaboration requires innovation in order to avoid getting stuck in the red tape and dysfunction of government bureaucracy. A strategy that has proven effective in bringing people together involves framing collaboration in a positive light. Promoting collaboration as a mutually beneficial process rather than a competitive “win/lose” situation holds greater potential for attracting the participation of all the various stakeholders that ecosystem management requires.⁵⁴ Driven by their faith in the power of the collaborative process, individuals committed to finding lasting solutions to shared resource stewardship problems are often the most effective in engaging these stakeholders in collaboration.

In addition, there are numerous institutional and behavioral factors that can influence the establishment and sustainability of transboundary ecosystem management partnerships. The first is shared recognition that the resources of an area or region are worth protecting. Often referred to as a “common vision” or “mission,” the adoption of such a perspective by any collaborative effort is helpful in fostering a cooperative spirit. Another factor that is important to cross-boundary stewardship is the willingness of participants to appreciate, and not criticize, the differences between themselves and others that are involved in the collaborative effort. This may mean recognizing the existence of territories and the need of various claimants, whether they be government agencies, non-governmental organizations, or local communities, to maintain an acceptable level of territorial control.⁵⁵

The Inclusion of Governmental Institutions

While some students of transboundary environmental issues have raised significant criticisms regarding government jurisdiction in this realm, the role of governmental institutions in an international transboundary collaborative process is irreplaceable and essential to any long-term management plan. In *Environmental Management on North America's Borders*, editors John Kiy and Richard Wirth support this notion by stating that it is not really *less* government that transboundary management requires but “more coordinated government.” Although previously cited for their bureaucratic inefficiencies, government agencies provide a model of structure and organization against which the framework for a collaborative process can be built.⁵⁶ Instead of mandates, existing government channels and networks can be used to help facilitate communication between certain stakeholders.⁵⁷ However, having those agencies with the most relevant jurisdiction and expertise involved is directly related to the effectiveness of government involvement in collaboration over natural resource management.

Not surprisingly, the government is often a necessary participant to any collaborative process that hopes to effect lasting changes in environmental management practices. In the American West in particular, federal agencies own so much of the land that to not have them involved in any discussion of ecosystem management would be a serious oversight.⁵⁸ In addition, the government carries with it an air of authority and certain power, whether respected by all citizens or not, that can lend legitimacy to any fledgling collaborative effort with which it is involved.

The Inclusion of Nongovernmental Organizations (NGOs)

NGOs have been noted for their critical role in representing special interests and, in some cases, public sentiment in collaborative processes.⁵⁹ They have been particularly active in the U.S. environmental arena, often acting as the “watchdogs” overseeing government enforcement of environmental regulations.⁶⁰ However, a unified front across North America has not materialized because the environmental NGO communities in Canada and Mexico are not as well developed as those in the U.S.⁶¹ Despite these differences, Kiy and Wirth emphasize that a strong NGO presence is important to all three countries because NGOs act as significant “change agents and shapers of public opinion.” In this sense, NGOs are key players in any collaborative effort because of their ability to engage and connect with the public. Environmental NGOs have been increasing in number over time, and some believe they represent the future of environmental management; their position outside the public sector allows them the freedom to seek innovative solutions to difficult issues that have not yet been solved by legal means.⁶²

Public Involvement

Debates over the management of transboundary resources shared across an international border are often referred to high level national policy makers, failing to include the public or consider that community-based solutions may make more sense in a given situation. Seen as a matter of international diplomacy, the resolution of transboundary resource management conflicts is a process that has not traditionally included public consultation. However, many of the researchers that study collaborative processes believe that “community spirit” and an appreciation of the public will are essential to any effective

collaboration.⁶³ Although somewhat emotional in nature, the claim that local communities have a role in collaboration is not unfounded.

Western community scholar Daniel Kemmis advocates the power of a heartfelt “sense of place” as a motivating factor for cooperation. It is his belief that such a sense can unite people across a region, despite differences that may exist among them, in their shared admiration of and connection to a place. In terms of land management, writer Wendell Berry agrees with the notion that personal attachment to a place plays an important role in spurring on action. He argues that “land cannot be properly cared for by people who do not know it intimately, ... who are not strongly motivated to care for it...”⁶⁴ Unfortunately, given the political, linguistic, and cultural differences that often distinguish one country from the next, a shared sense of place may be difficult to find across an international border. However, engaging communities on either side of such a division in the collaborative resource management process could reveal similarities between nations, particularly a shared reliance upon the natural resource base over which conflict has erupted.

Transboundary Collaborative Efforts

The many programs along the U.S.-Canada and U.S.-Mexico borders that attempt to address the transboundary ecosystem management problem occur at three general scales. These scales include:

- Large, continental scale programs that seek to coordinate conservation and management activities and instill an environmental stewardship ethic within a greater regional area, often referred to as “ecoregional” efforts. These include such programs as the Yellowstone to Yukon Conservation Initiative, the Great Plains Partnership, the Algonquin to Adirondacks program, and the International Sonoran Desert Alliance. While these programs are focused on a specific ecosystem or connected set of ecosystems, they often play an “umbrella” function, organizing and coordinating the distribution of information and resources among several “on-the-ground” conservation organizations.
- Medium-sized programs that focus on a single watershed or landscape which often plays an important role within a larger context. These programs generally seek to coordinate management actions through collaboration among the relevant stakeholders in the area. Such areas include the Upper San Pedro River Basin, the ManOMin Watershed, and Puget Sound-Georgia Basin.
- Smaller scale programs that focus on coordinating management between a limited number of adjacent jurisdictions. These programs often entail resource managers on either side of the border sharing information and expertise in order to enhance environmental management in their own jurisdiction while promoting the integrity of the greater ecosystem. Examples of these include the Glacier-Waterton International Peace Park complex and the coordination between managers of Big Bend National Park and adjacent protected areas in Mexico.

Effective collaborative processes that are truly transboundary are important at all three of these scales. While the experiences of various large- and small-scale programs contributed useful insight to this study, most of the projects investigated fell within the

middle range, reflecting the scope of most transboundary “ecosystem” management efforts existent in North America.

Regardless of the size of these programs, collaboration was a necessary first step in all cases. Ultimately aimed at promoting transboundary environmental stewardship of ecosystems spanning international borders, the establishment of effective collaborative processes was essential in bringing all relevant stakeholders together. The sustainability of these processes has proven itself in some cases and remains to be seen in others but is undoubtedly an indication of whether or not transboundary ecosystem management can realize success.

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METHODS

INTRODUCTION

Early in the project planning process, we decided that the most effective way to answer our research questions of the various mechanisms of transboundary collaboration was through case study research and a review of the existing literature on the topic. Our methods were shaped through repeated consultation with our faculty advisors, informal discussion with other students, and reference to previous master's projects.

We realized early in the project that, despite our best attempts to establish a fixed methodology before commencing research, we would need to employ an iterative process to establish an effective and efficient method. An iterative process compensated for our rudimentary understanding of the Flathead region and the diverse literature on the topic of transboundary resource collaboration. Both factors also made it difficult to establish a tenable hypothesis at the outset. We elected to run two parallel processes to synthesize our growing knowledge of each element—one focused on the Flathead region and the other on general transboundary efforts. This allowed us to bring new information to bear on our understanding of both elements immediately, effectively accelerating the rate at which our understanding of both ratcheted upward.

In order to inform the Flathead Basin and to uncover those factors that facilitate transboundary collaboration, we attempted to answer the following questions:

- **How is the management of natural resources across international borders similar and different from cases that involve domestic ecosystem management?**
- **Recognizing that collaboration is essential to ecosystem management, how is collaboration across international borders similar to and different from collaboration within a single nation?**

ANALYTICAL PROCESS

Concurrently, we conducted two independent processes throughout the research phase of this project (see Figure 3.1).

- Phase I represents the work with the client in the Flathead region.
- Phase II was the academic study of existing transboundary resource management efforts between the US and its neighbors.

We gathered necessary information in Phase I to determine the salient characteristics of the Flathead case. Much of this work was done through frequent email correspondence

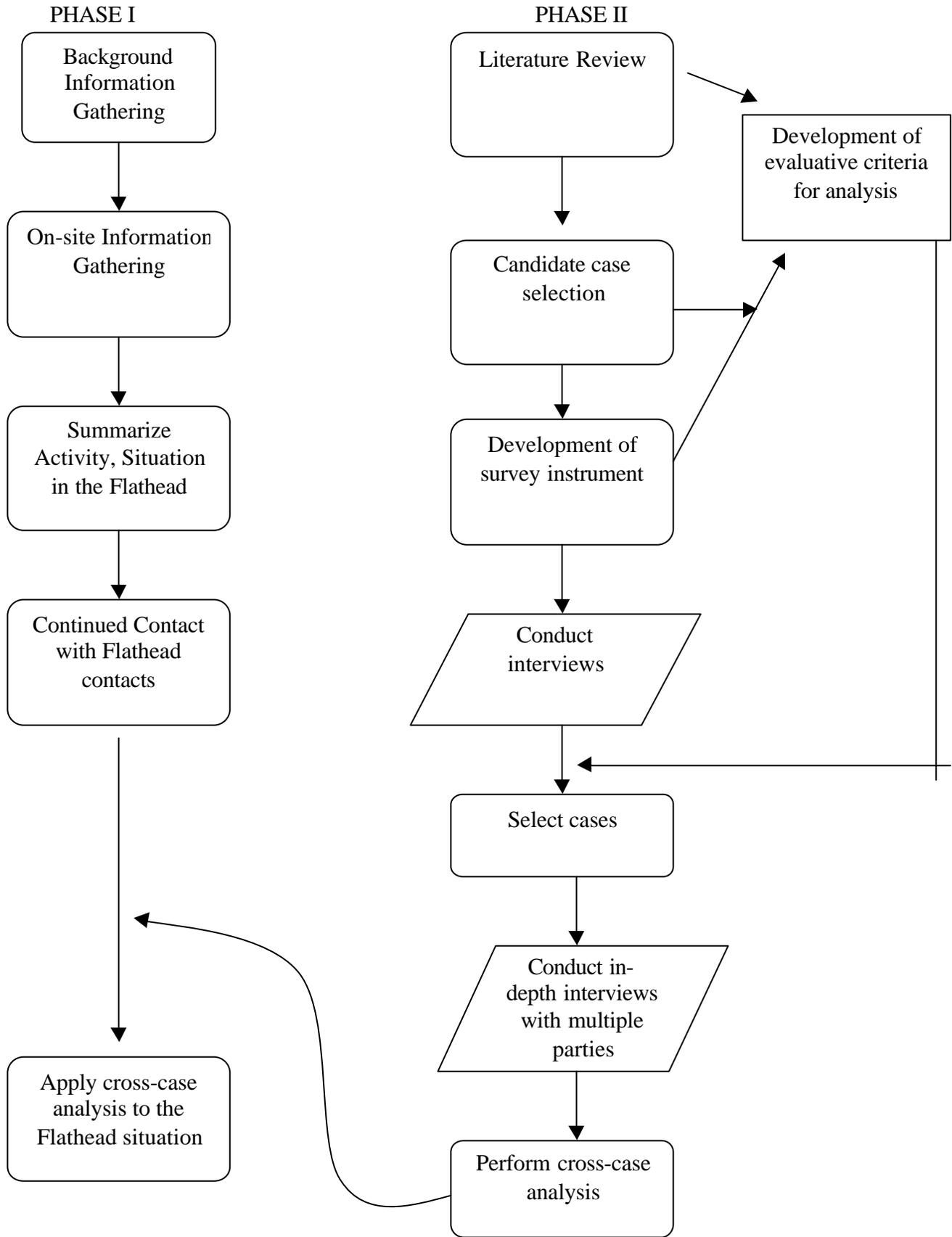
and a site visit to the basin. These particulars were then considered when applying the lessons of the cross-case analysis to the Flathead.

Phase II consisted of the steps discussed in the rest of this chapter:

- Literature Review
- Identify Potential Cases
- Develop Interview Instrument
- Gather Data
- Develop Candidate Case List
- Select In-Depth Cases
- Gather Data on In-depth Cases
- Perform Cross-Case Analysis

We spent a considerable amount of time developing the evaluative criteria while working through Phase II. The evaluative criteria were the dimensions of analysis that were used to narrow the field of possible cases.

Figure 3-1. Flowchart of Analytical Procedure



LITERATURE REVIEW

Our literature review had three goals:

- (1) Identify topical academic literature related to ecosystem management, transboundary management, and collaboration,
- (2) Familiarize ourselves with the analytical methods necessary to carry out this project, and
- (3) Identify potential cases.

We consulted literature sources that varied from academic journals to publications produced by non-profit organizations. There was a broad range of disciplines that carried articles of interest, including political science, economics, anthropology, human resource ecology, and others. We discovered a clear and identifiable parity in the conclusion of the literature on a number of points, discussed in Chapter 3.

Although we employed core keywords, the literature review was conducted in an informal fashion. We followed thematic trails bored by those keywords through the various publications, rather than selecting a range of publications and exhaustively searching for all articles relating to a set of keywords. This approach allowed us to account for differences in terminology between the disciplines.

IDENTIFY POTENTIAL CASES

A major component of this Master's project is the review of transboundary resource management efforts situated *outside* the Flathead region. It was determined that looking broadly for such cases would help inform us generally on the nature of cooperative ecosystem management structures across international borders. "Looking broadly" entailed surveying transboundary efforts and attempting to sift out a final collection which was both geographically and programmatically diverse along the specific dimensions identified below.

In order to select a range of appropriate cases, we employed several evaluative criteria. General preliminary research and a desire to make our findings applicable to the situation in the Flathead region led us to focus primarily on U.S.-Canada interactions. While "transboundary" efforts can technically exist between states or counties, for example, it seemed that the presence of the *international* border in the Flathead posed particular challenges to transboundary resource management which we wanted to explore further. U.S.-Mexico examples were later included when it became apparent that they had much to contribute to our base of knowledge about the U.S. experience with transboundary resource management. In total, 26 cases were explored, with each project member researching five to six efforts. After investigating these candidate cases, we realized that some dealt with complimentary efforts in the same ecosystem. After aggregating those cases and eliminating the ones that we considered to be irrelevant, we were left with a total of 22 cases. A brief summary of each of those cases that were not selected for in-depth analysis can be found in Appendix A.

ON-SITE INFORMAL INFORMATION GATHERING

From August 13 to August 24, 2000, we traveled throughout northwest Montana, southern Alberta and southeastern British Columbia to conduct informational interviews with a select number of stakeholders in the greater Flathead region. Our client contact at the Montana Wilderness Association provided us with a list of people he felt could provide us with useful background information. We arranged meetings with several of these contacts before arriving in Montana.

To better familiarize ourselves with the issues critical to transboundary resource management in the Flathead region, we spoke with people who could provide a historical context and/or a better sense of the range of ongoing efforts aimed at addressing the situation. We met with representatives from the Canadian Parks and Wilderness Society, the East Kootenay Environmental Society, Glacier National Park, the Montana Wilderness Association, The Nature Conservancy, the U.S. Forest Service, and the Yellowstone to Yukon Conservation Initiative. These in-person meetings helped us to establish relationships that were critical to the success of the project. These people served as our Flathead “experts” and provided us with invaluable insight and constructive criticism on the applicability of our research to the situation with which they are struggling.

We used a general list of questions to guide us through the interviews. Two group members took notes during the meetings; some of these meetings were also audiotaped. Upon our return to Ann Arbor, meeting notes were transcribed and distributed to all group members for incorporation into the introductory Flathead Chapter of this document (see Chapter 2). We supplemented this information with document and Internet research that was conducted during the spring, summer, and fall of 2000.

DEVELOPMENT OF INTERVIEW QUESTIONS/PROTOCOL

We spent considerable time developing the questions to be used in the preliminary phone interviews. This step was very important because this information would be used to determine which cases would be selected for in depth analysis. The criteria, described below, were a starting point for developing interview questions. We developed a basic list of questions as well as a matrix that could be filled in from the information gathered in the interview. We attempted to fill in this matrix from the information we already knew from the document research. This helped us discover holes in the questions. We then revised the interview questions to make sure we would gather all the necessary information for each case. After discussions with our advisors, we changed the format of the questions and created a master list of broad questions, with probing sub-questions associated with each. These questions are included in Appendix B.

PRELIMINARY INTERVIEWS

Each project member researched five to six of the cases on the “candidate” case study list. This research was based upon interviews with people familiar with the case as well as document and Internet research. These interviews were conducted by phone during October/November 2000. Interviews typically lasted 30-45 minutes, and each was taped and transcribed. The interviews were based on the questions described above, although the questions were used only as a thematic guide, not a literal phone script. This method allowed us to better engage the interviewee in a productive dialogue and allowed more time to be spent on information areas that could not be garnered from other sources, such as documents and the Internet. We used the information gained from these interviews, along with other sources, to develop a brief summary of each case. These case summaries include information about the physical setting of each case, the ecosystem stresses, a description of the project and the role of transboundary collaboration in this effort, as well as contact information and relevance to our project. The summaries of the cases that were not selected for in-depth analysis are included in Appendix A.

CRITERIA TO SELECT IN-DEPTH CASES

In order to determine which of the 22 cases should be considered in depth, we developed and employed a set of criteria based on information gathered in the preliminary research. Two different categories of criteria were used to select cases. Certain elements needed to be present in all of the final cases while others required variation across the cases. This diversity was sought in an attempt to present a range of possibilities to those wishing to develop and implement coordinated management of natural resources across international boundaries.

Each of the final cases included the following characteristics:

- **A natural resource or ecosystem that crosses an international border**
A resource within the area is clearly transboundary. In addition, there must be concern for this resource on either side of the boundary.
- **The involvement of individuals and/or organizations on both sides of the border**
Not only are there concerns on either side of the border for the transboundary resource, but interested parties from at least two nations are involved in a transboundary collaborative effort.
- **A story rich enough to contain lessons for other transboundary efforts**
The scope must be broad enough to lend general lessons but still manageable for the given resources. The effort must be ongoing and have at least potential longevity.

While all of the cases that were selected for in-depth analysis met the above criteria, there were two themes that allowed for variation among the cases. The themes where variation among the cases was sought are:

- **Initiating Forces**

We considered cases that began differently and also evolved into very different efforts. While some efforts were officially integrated into existing governmental infrastructures, others began from the grassroots and were citizen driven while still others were born out of federal legislation or international agreements.

- **Organizational Structure**

We included cases in the final eight that had a range of different organizational structures and went about the task of transboundary collaboration in very different ways in hopes of learning lessons about the role of different structures in these efforts.

Based upon their abilities to demonstrate both the specific characteristics called for by the first set of criteria and unique points of variation among criteria set #2, eight cases were selected and developed into more detailed case studies. These final cases are:

- **International Sonoran Desert Alliance** - Aimed at encouraging community-based environmental stewardship, the International Sonoran Desert Alliance (ISDA) has established a number of environmental education and sustainable business initiatives throughout the Western Sonoran Desert. ISDA is an interesting example of a transboundary collaborative effort that has attracted attention and funding because of its local, citizen-based approach.
- **Gulf of Maine** – With a highly formal organizational structure and a diversifying base of stakeholders, the Gulf of Maine Council provides a central focus for coordinated management in the region. The Council has been particularly successful in improving cross-border communication over its 12-year history.
- **Upper San Pedro River Basin** – Despite the numerous barriers to transboundary collaboration in the San Pedro basin, several separate but interrelated programs have made significant progress towards protecting the basin's shared natural resources. These efforts provide a good example of how the influence of political leaders can help build the momentum for improved collaborative management of this important transboundary resource.
- **Lake Champlain Basin Program** – Bolstered by several state-state and state-province agreements, the Lake Champlain Basin Program has made noticeable progress towards improving the quality of this transboundary ecosystem. This program is a good example of how a formal collaborative process can achieve positive ecological outcomes through non-binding international agreements and an effective organizational structure.

- **ManOMin Watershed** - Since the 1920's, U.S. and Canadian governments have cooperatively managed the boundary waters of the ManOMin watershed under the authority of the International Joint Commission. In recent years, several other interrelated collaborative efforts, including one spearheaded by a First Nation, have arisen to improve the stewardship of this transboundary ecosystem. This case illustrates how the development of communication channels between stakeholders and jurisdictions can help expand resource management efforts to consider the entire ecosystem.
- **Okanagan River Basin** - Recognizing the imperiled status of its remaining transboundary sockeye salmon population, resource managers in the Okanagan River are beginning to incorporate transboundary ecosystem goals into a regional funding framework. Despite its relatively short history, the Okanagan case is a strong example of how existing organizational structures can be expanded to address transboundary resource conservation.
- **Puget Sound -Georgia Basin International Task Force** – Created under an international state-province agreement, the Puget Sound-Georgia Basin International Task Force brings together government agency and tribal representatives to mitigate the inherently transboundary threats to this ecosystem. Working under a formal and well-organized structure, the Task Force illustrates that joint management efforts can function within existing governmental frameworks and realize ecological benefits for an ecosystem that crosses jurisdictional boundaries.
- **Red River Basin Board** – For many years, the U.S. and Canadian governments have been involved in cooperative efforts to manage the Red River Basin through the International Joint Commission (IJC). In response to increasing frustration with the IJC's inability to respond to local issues, local stakeholders spearheaded an international, grassroots effort called the Red River Basin Board. This case illustrates the strength that such a forum can bring to a transboundary collaborative effort by empowering the participation of local stakeholders to deal with local concerns.

Cases Not Considered In-Depth

Logically, the cases that did not meet the criteria outlined above were not further analyzed through case studies. The reasons why these cases were set aside vary according to the ways in which they differed from the criteria that were sought. For instance, several of the original twenty-one efforts surveyed are centered on single species or issues rather than the pursuit of more comprehensive ecosystem management approaches to solving transboundary problems. These cases include the Kootenay River (singular focus on the White Sturgeon), the Milk and the Souris Rivers (singular focus on water quantity), and the International Porcupine Caribou Treaty (singular focus on caribou). While one effort that focused primarily on salmon was chosen, the Okanagan case built off of this focal species and was able to focus on more ecosystem management concerns.

Also, transboundary programs related to the Garrison Diversion and the Tijuana River, while not as narrow in their foci, were not the examples of cross-border ecosystem management that this report hoped to highlight. Not surprisingly, none of the cases in this subsection of transboundary resource management examples exhibited particularly broad arrays of participants on both sides of the border.

**Case Studies Not Selected for
In-Depth Analysis***

- **Big Bend Ecosystem**
Texas, U.S. & Chihuahua and Coahuila, Mexico
- **Garrison Diversion**
North Dakota, U.S. & Manitoba, Canada
- **Great Lakes United**
8 U.S. States & Ontario and Quebec, Canada
- **Great Plains Partnership**
13 U.S. States, Canada, Mexico
- **Kootenay River Sturgeon**
Montana and Idaho, U.S. & British Columbia, Canada
- **Laguna Madre**
Texas, U.S. & Tamaulipas, Mexico
- **Milk-St. Mary's Watershed**
Montana, U.S. & Alberta, Canada
- **North Cascades Ecosystem**
Washington, U.S. & British Columbia, Canada
- **International Porcupine Caribou Treaty**
Alaska, U.S. & Northwest Territories, Canada
- **Rio Grande Basin Commission**
3 U.S. States & 5 Mexican States
- **Souris River**
North Dakota, U.S. & Manitoba and Saskatchewan, Canada
- **Tatshenshini-Alsek Ecosystem**
Alaska, U.S. & British Columbia, Canada
- **Tijuana River**
California, U.S. & Baja California, Mexico
- **Upper Columbia River Basin**
3 U.S. States & British Columbia, Canada

* Summaries of these transboundary efforts are included in Appendix A.

Although the grassroots cooperation among management agencies in the Big Bend region was an interesting example of an informal effort that is facilitated by higher-level intergovernmental agreements, this case was not rich enough to provide lessons for other regions. This case was not selected for in-depth analysis because the transboundary interagency cooperation in the area involves very few additional stakeholders outside of the resource management agencies and has a limited vision for the resources of the region.

Those cases that attempted to address transboundary resource issues of an unmanageable scope were not considered for development into case studies. The Rio Grande Basin Coalition and the Upper Columbia Basin were not selected for this reason. While these programs have been in existence for years, they have made little tangible progress because of its consideration of too vast a landscape. Given the extent of its resources –

staff, finances, and others – the Coalition in particular did not appear to be adequately equipped to tackle issues on such a large scale.

In addition, it was easy enough to discount the Great Plains Partnership and transboundary resource management efforts in the North Cascades ecosystem from further consideration because neither of these programs is still operating. Clearly, these attempts at natural resource management across international borders were not built with intentions of being able to withstand the various challenges faced in a transboundary context. Like the Rio Grande Basin Coalition, the Great Plains Partnership (GPP) suffered as a result of framing its work around an unmanageably expansive geographic scope. A new project which spun off from the now-defunct GPP, the High Plains Partnership, operates within the northern Great Plains states but, due to limited funding and a need to scale down the project area, no longer includes Canadian participation. In the North Cascades region, transboundary resource management efforts revolved around attempts to establish an international park, which has never materialized. However, a secondary effort aimed at funding binational stewardship has been successful but is not relevant to this study. As the various groups involved in this effort on both sides of the U.S.-Canada border have moved to other issues, what was once a loose-knit transboundary partnership has all but dissolved.

Another case that clearly did not fit the criteria for case study selection was that of the Tatshenshini-Alsek Wilderness Park. Although this park sits on the border between British Columbia and Alaska, it sits wholly within the province and is deemed a provincial park. The B.C. government has expressed intentions of inviting federal, state, and tribal governments to develop an international accord in relation to management of the greater transboundary Tatshenshini-Alsek region, however no action has been taken toward this end to date.

Although the Laguna Madre Binational Initiative's parallel structure made it a rich case, it was not selected because of its limited natural resource experience. The initiative simply has not operated for a long enough period of time to provide lessons on collaborative resource management, and characteristics of the area severely limit its relevance to other situations.

The final case that was included in the original research but did not become an in-depth case study was the Great Lakes Basin. This case is an example of extremely effective transboundary management, yet it did not meet all of the necessary criteria. This is where the fact that there needed to be variation along the last two themes became a factor. Among the remaining cases there were several that enjoyed a high level of institutionalization. In order to have variation along this theme, the Great Lakes was not considered further.

PHONE INTERVIEWS FOR THE FINAL CASES

Once we selected the final eight cases for in-depth study, we began to collect further information. The intention of the final case research was to learn about the case and its transboundary elements from a variety of perspectives. For each case, between 5 and 10 individuals who represented different perspectives and expertise about the case were identified as interviewees. The number of interviewees depended largely on the number of stakeholders involved in or affected by the effort, the level of controversy, or other factors. The intention of these repeated interviews was to gain a full perspective on each issue and theme by approaching them from a variety of points of view. The original contacts for the cases were often helpful in identifying and locating follow-up interviewees.

Before interviews could begin, we revisited our phone interview questions to assess how well they reflected the themes that were used to select the cases. After this assessment, most of the original questions were retained for the final case interviews, though some additional questions were added to explore some of the themes with greater detail. Many of these additional questions pertained to the organizational structure and institutionalization of the case, those themes that our final analysis would largely be based upon. For each case, some additional questions were also developed on a case-by-case basis that pertained to any particular nuances of the case that would inform our analysis.

Once final interviewees and the relevant questions were identified for each case, interviews were conducted in January and February 2001. These interviews were taped and transcribed. The information gathered in these interviews was used to give depth to the final case descriptions found in Chapters 8-15.

CROSS-CASE ANALYSIS

Not only were we interested in studying specific cases in depth, but we also wanted to know how the lessons from these cases related to one another and what facilitated cooperation across international borders. While the particulars of the cases varied, we were able to identify a number of common lessons that suggest specific elements that facilitate transboundary cooperation.

When analyzing the different lessons from the eight cases, we found that a number of these lessons applied to any collaborative effort, whether it involved multiple nations or not, while others were only present in cases that included work across an international border. For instance any collaborative effort must be certain to include a diverse set of stakeholders, document progress, highlight successes, and maintain lines of communication. While collaboration is always difficult, working across an international border creates additional barriers to overcome. We found that transboundary efforts use a variety of strategies to overcome these difficulties, such as establishing a strong organizational structure under which to work, formally recognizing differing economic

priorities among nations, and utilizing existing relationships to find commonalities. These findings are discussed in detail in Chapter 5.

APPLICATION OF FINDINGS TO THE FLATHEAD BASIN

Through the cross case analysis, we determined several factors that facilitate collaboration across international borders. We were particularly interested in whether or not these elements would be useful in the Flathead River Basin. We considered each theme or lesson in light of the situation in the Flathead. We found that many of the lessons learned from the in depth cases could inform activities in the Flathead while others were not relevant for the situation in Montana and British Columbia. For example, several cases pointed to the importance of building on appropriate existing transboundary institutions. This strategy is not as relevant in the Flathead where there are no relevant transboundary institutions. It is clear that there are a number of lessons that apply to transboundary management in general, yet each case is slightly different, so there is no single template for all transboundary situations. The application of the lessons to the Flathead situation is discussed in Chapter 6.

FINDINGS AND ANALYSIS

INTRODUCTION

This study investigated eight cases where natural resource systems are divided by an international border. In each of these cases, the individuals, agencies, and organizations involved in these transboundary ecosystems have been working to better coordinate management, which has often necessitated the development of a formal or informal collaborative process. These international, transboundary efforts exhibited many of the same barriers to collaboration that exist in a domestic arena, and utilized many of the same strategies to overcome those barriers. What is different about transboundary situations, however, is that the international border amplifies some of the existing barriers to collaboration. While this added complexity makes it much more difficult to develop a collaborative process, it also necessitates such a process to effectively address transboundary natural resource issues.

Based on what we learned from the eight case studies (shown at right), this chapter outlines the strategies that these efforts used to develop and sustain transboundary collaborative processes. These findings are not intended to be a comprehensive “how to” for transboundary resource management, rather they provide a cross-section of experiences and situations where the individuals who are involved in transboundary processes have described what works and what does not work for them. While many of the strategies are applicable to any collaborative process, others were unique to transboundary situations in that they address some of the specific barriers that are more pronounced at an international scale. Both general and transboundary specific findings are discussed below.

Case Studies

- **International Sonoran Desert Alliance**
Arizona, U.S. & Baja California and Sonora, Mexico
- **Gulf of Maine**
Maine, U.S. & New Brunswick, Canada
- **Upper San Pedro River Basin**
Arizona, U.S. & Sonora, Mexico
- **Lake Champlain Basin Program**
New York and Vermont, U.S. & Quebec, Canada
- **ManOMin Watershed**
Minnesota, U.S. & Manitoba and Ontario, Canada
- **Okanagan River Basin**
Washington, U.S. & British Columbia, Canada
- **Puget Sound – Georgia Basin International Task Force**
Washington, U.S. & British Columbia, Canada
- **Red River Basin Board**
Minnesota, North Dakota, and South Dakota U.S. & Manitoba, Canada

Why Transboundary Collaboration?

In the face of natural resource problems that are becoming more politically, legally, and ecologically complex, many communities are finding it necessary to expand their view and look at these resources as holistic, ecological systems, beyond the jurisdictional

boundaries of traditional resource management. In many places, this broader view requires coordination between different agencies, organizations and governments in order to transcend the legal, institutional, and logistical barriers that come with the jurisdictional boundaries that separate them. Multi-stakeholder collaborative processes are useful in overcoming some of those barriers, allowing communities to consider their shared natural resources as a complete, interconnected system. In situations where the jurisdictional boundaries include an *international* border, those barriers to collaboration are much more pronounced.

The individuals who were interviewed for the case studies described many of the usual stumbling blocks to collaboration, which include rigid institutional structures, polarizing attitudes among individuals and organizations, and difficulties in managing the collaborative process.¹ In addition to these barriers, the case studies also reveal a whole suite of difficulties that are much more pronounced when a natural resource system and its stewards are divided by an international border. These amplified barriers include:

- Legal and governmental differences that complicate coordination and implementation;
- Logistical and physical barriers to communication, movement, and information;
- Social and cultural differences including language differences that inhibit the development of trust and a common sense of place; and
- Differences in economic priorities and capabilities that constrain certain stakeholders' willingness or ability to participate in the process.

The Need for a Collaborative Process

In order to achieve ecological *outcomes*, transboundary efforts must first develop an effective collaborative *process*. At the outset, this process can be either formal or informal, depending on the strategies, resources and nature of the stakeholders who are involved. What is important is that the process facilitates communication, has appropriate stakeholder involvement, and gains credibility and legitimacy. These factors are paramount in overcoming the barriers to collaborative resource management that come with an international border.

All of the cases in this study exhibited a collaborative process in some form. Ranging from ad hoc communication channels to highly formal transboundary committees, these processes were found to be at different stages in their institutional development, and did not conform to any prescribed approach or structure. Instead, each was uniquely tailored to fit the existing natural, cultural, political, and economic situations in the area. In all of the case studies, however, stakeholders recognized the need for a formally structured process to direct management or stewardship activities, whether or not such a process was currently in place.

Without developing an effective collaborative process, it can be difficult if not impossible to achieve ecological successes in a transboundary context. Indeed, the general barriers to any collaborative process are more pronounced in a transboundary setting and pose a formidable challenge to the development of procedural outcomes, let alone ecological ones. For this reason, it is imperative that transboundary efforts are cognizant of these

barriers, and work to overcome them. Many of the strategies that were used to overcome those barriers are discussed below.

SUMMARY OF FINDINGS

Strategies for Addressing Transboundary Barriers

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BARRIERS THAT ARE INTENSIFIED BY AN INTERNATIONAL BORDER

Any collaborative resource management effort can run into barriers that make it difficult for individuals and organizations to work effectively together. These barriers can arise from cultural traditions that vary from community to community, institutional norms that prevent the acceptance of new ideas, and individual attitudes and perceptions that tend to discount, at times, other viewpoints. In a transboundary situation, all of the requisite stumbling blocks to collaboration are certainly apparent, but there is a specific subset of barriers that are much more pronounced.

This section describes each of these barriers, with examples from the case studies. It is followed by a section describing some of the ways that transboundary efforts have overcome these barriers.

Legal and Governmental Differences

One of the most apparent obstacles to transboundary resource management efforts is the fact that they involve at least two sovereign nations, each with its own legal and governmental structures. In the transboundary setting, there are often no mutually applicable governmental authorities to which those engaged in conflict can appeal. Without an overarching legal and governmental framework, communities often find it to be easier to deal with resource issues within their own jurisdiction, hoping that their neighbor will do the same. Some of the case studies illustrated that when natural resource issues are indeed transboundary, domestic solutions are unable to fully address the problem. The different and sometimes incompatible legal and governmental structures can pose a major barrier to transboundary collaboration, as demonstrated in some of the following examples.

The different governmental structures between the U.S. states and the Canadian Province of Quebec in the Lake Champlain basin was certainly an early barrier to the transboundary effort, resulting in completely different funding channels on either side of the border. Early in the process, this barrier prevented the inclusion of Quebec in the program. As the Vermont Program Coordinator explains, “This was paid through EPA funds and we couldn’t involve Quebec,” so New York and Vermont went ahead in forming a partnership without the formal participation of their Canadian neighbor.²

Although the workgroups of the Puget Sound-Georgia Basin International Task Force were intended to be *transboundary*, it has been close to impossible for these groups to accomplish anything based on truly joint action and identical policy. Despite the fact that “the speed of light does not actually change at the border,” the link provided by a common scientific understanding of the problems at hand has not been strong enough to overcome institutional differences.³ The government agencies within which the B.C. and Washington Task Force representatives are working are different enough in their specific responsibilities and priorities that working in tandem has been dismissed as a fruitless task.

Communication Difficulties

Communication between resource managers and other stakeholders is essential to the sharing of information and ideas that is the cornerstone of any collaborative process. In transboundary situations, the presence of an international border can pose a significant barrier to communication, often deterring the movement of people and information across the border. As illustrated by the following examples, these communication barriers were very apparent in the case studies as an impediment to transboundary collaboration.

In the Lake Champlain basin, EPA officials cited several barriers to communication and information flow across the border. Most EPA phones cannot dial internationally, and it is difficult for officials to bring a government vehicle across the border to get to meetings. In addition, it is “orders of magnitude more difficult”⁴ to get GIS data from Canadian agencies than it is from U.S. agencies. Canada does not have a Freedom of Information Act like the U.S.; consequently its government agencies have a lot more difficulty legally sharing information with others. In terms of swapping technical data across the international border, further complications have arisen due to the utilization of different, and often incompatible, data set formats in each country.⁵ This situation has also posed problems for the Puget Sound-Georgia Basin International Task Force.

Although the French-English language difference did surface as a complication to interpersonal communication in the Lake Champlain region, language differences have been the most apparent as barriers in the U.S.-Mexico cases analyzed in this study. While many natural resource professionals on either side of the border are bilingual, many of the citizens are not. This has been a major impediment to dialogue on transboundary resource issues and the development of a formal, binational program. As one researcher explains, “The language barrier is actually a big one... Basically, any binational meeting you have, you need to have simultaneous translation, and that’s very expensive. If you were going to have monthly or even quarterly meetings, that means an outlay of a few thousand dollars for each one.”⁶

The physical presence of the border can also be an impediment to the movement of people and their ability to communicate. A Mexican scientist working in the San Pedro region noted that one of the largest barriers to transboundary work has been dealing with customs and the U.S. Border Patrol, as well as the police and army in Mexico who are looking for illegal aliens and drug traffickers.

Border crossing from Mexico to the U.S. has also been a very real barrier to ISDA’s functioning. The current ISDA executive director laments this situation: “There are some board members that can’t cross – they don’t have permission. They’re O’odham natives and, for whatever reason, they can’t get passports unless they renounce their allegiance to the tribe. According to Mexico, there are no tribes – just Mexicans. So you’re either Mexican or you’re not. And the requirements for getting in on the U.S. side are kind of rigid – they ask you for rent receipts and utility payments...and we deal with some people with scant resources, so it’s been tough.”

Likewise, areas spanning the U.S.-Canada border present certain physical barriers. Although border patrol is not quite as vigilant across the 49th parallel, geographic obstacles have arisen in some cases. For example, the region covered by the Puget Sound-Georgia Basin International Task Force is large, and, according to the U.S. co-chair, “all the water in the middle makes it hard to get around.”⁷ Due to the fact that the eight cases analyzed in this study operate at the ecosystem level, they tend to cover rather expansive areas, making travel through any program’s terrain more time-intensive.

Social and Cultural Differences

By delineating a division between nations and communities, the presence of an international border can create clear social and cultural differences that make transboundary collaboration difficult to achieve. Indeed, communities grow and develop on their own side of the border, often with little knowledge or concern about what happens on “the other side.” By their very nature, many transboundary areas harbor a diversity of cultural groups who generally have their own distinct identities, sometimes have little understanding of the other groups, and occasionally have adversarial relationships. As evidenced by some of the case studies, this diversity of cultures and the differences between them has added to the challenge of developing transboundary collaborative processes and natural resource management outcomes.

One of the initial barriers to collaboration in the Gulf of Maine was the lack of a shared understanding among *all* area stakeholders of the environmental problems facing the Gulf. Maintaining different interests in the ecosystem, ranging from economic to cultural to ecological, not all individuals and organizations with ties to the Gulf had environmental issues as their top priority. As one of the founding members of the Gulf of Maine Council recalls, “Frankly one of the challenges we faced before the program was created was getting people interested. They’d ask, ‘Why should we create this whole program? What’s the problem?’”⁸

In several of the cases, cultural differences involving indigenous communities presented cultural barriers to collaborative transboundary management. For example, the Red River Basin Board has found it difficult to get Native Americans interested and involved in the process. In addition, the ongoing treaty negotiations between indigenous groups and the Canadian federal government have led to uncertainty and unstable relationships. The unresolved treaty rights of the Coast Salish First Nations has added several layers of complexity to the work of the Puget Sound-Georgia Basin International Task Force. This situation leaves the Canadian Coast Salish unsure of which of their rights, if any, are protected by the government.

On the U.S. side, however, the Coast Salish enjoy greater clarification on this issue. The U.S. Coast Salish have agreements in place for fisheries management, zoning, and water quality among other things. The disparate status of the American and Canadian Coast Salish has made it more difficult to understand the relative sovereignty and interconnectedness of these two communities.

Economic Disparities

Transboundary resource management efforts can be constrained by different types of economic factors. As the economies of many communities are inextricably tied to their resource base, they may have different priorities over how shared resources should be managed. In addition, the limited economic resources of certain stakeholders can impinge upon their ability to take part in transboundary efforts. The case studies demonstrated examples of both of these types of economic barriers to transboundary collaboration, as described below.

In the San Pedro basin, the economic disparity between the Mexico in the U.S. has been a significant barrier to transboundary collaboration. While many people are concerned about the health of the river, some of the Mexican communities have more pressing issues related to the quality and availability of drinking water. As one researcher explained, “If you go down to Mexico and talk about water, they’re going to want to talk about public health.”⁹

ISDA works mainly with Mexican communities in Sonora, and top priority for individuals in these areas is the basic ability to survive. This sentiment has been aptly summarized by an American ISDA board member: “You have to have enough money to feed your family, clothe yourself, and have a roof over your head. If you’re hungry and you can’t feed your family, you’re not going to care about any of the fuzzy creatures in the world.” ISDA’s executive director echoes this need to take an economic approach to environmentalism in the region: “Our feeling is that we need to start from the perspective of people’s economic lives. What we’re really realizing now is that, in order to really deal with conservation as a consciousness issue, people have to first have the capacity to feed themselves and take care of their families.”

Transboundary efforts in the Okanagan region have also been constrained by limited resources. While many of the resource managers understand the importance of working across the border, they simply cannot afford to take part in a program to harmonize efforts. As one participant notes, “[Canada] just doesn’t have the money. They don’t have the funding mechanisms—that’s the limiting factor in Canada.”¹⁰

Similarly, competition for limited economic resources has created adversarial relationships among stakeholders in the Gulf of Maine region. This cultural dynamic created a perceived barrier to regional collaboration, as explained by one of the Council’s founding members: “We’d had a history of the region fighting with each other over natural resource-based economies, and that presented a dilemma. [People would ask], ‘Do you really think you’re going to get the states and provinces to sit cooperatively?’”¹¹

OVERCOMING BARRIERS TO TRANSBOUNDARY COLLABORATION

As illustrated above, the presence of an international border can add various layers of complexity onto an already complicated resource management scenario. While these

barriers are daunting, many communities have found that it is necessary to work across the international border to address shared natural resource problems. The case studies have demonstrated that a collaborative process with a certain degree of organizational structure is needed to overcome some of the barriers to coordinating resource management across the international border. Managing such a process can be difficult in any situation, much less a transboundary one, but it can be done. The following lessons from the cases demonstrate how stakeholders have managed and maintained collaborative processes across the international border.

Overcoming Legal and Governmental Differences

Since transboundary efforts implicitly involve different sovereign nations, inconsistent and sometimes incompatible governmental and legal structures can be a major barrier to collaborative resource management. The case studies demonstrated several examples of how individuals and organizations overcame those differences by crafting transboundary agreements, utilizing existing international institutions, employing the assistance of a political champion, and capitalizing on the recognition that the resources provide.

Transboundary Agreements

There is a common understanding that in order for transboundary efforts to be effective, they need to be backed by a formal treaty signed by the leaders of both nations. The case studies suggest that this understanding is not entirely true. While some sort of inter-governmental agreement or declaration was present in almost all of the cases, none of them have yet necessitated the backing of an international treaty. Instead, these lower-level agreements, tailored to the situation at hand and the stakeholders involved, have been effective in facilitating collaborative efforts across the international border.

In the San Pedro basin, the Binational Initiative was formed under the *Joint Declaration for Binational Cooperation in the Upper San Pedro Basin* that was signed by the cabinet-level secretaries (Bruce Babbitt and Julia Carabias) of U.S. and Mexican agencies. While higher levels of government did not approve it, this Joint Declaration formed a common commitment to protect the San Pedro basin between the U.S. Department of the Interior (DOI) and the Mexican Secretariat of the Environment and Natural Resources (SEMARNAT). Prior to this agreement, however, informal collaboration between resource managers in the basin had been taking place for over five years, as described by a DOI official: “The Joint Declaration between Babbitt and Carabias came a few years after things already started out in the field...[but] in terms of Mexico creating the protected area, it was very necessary.”¹²

Case-Specific Transboundary Agreements

Memorandum of Understanding/ Agreement

*Lake Champlain Basin,
Puget Sound-Georgia Basin*

Joint Declaration *San Pedro Basin*

Federal Letter of Intent *ISDA*

Binational Biosphere Reserve Designation *ISDA*

Similarly, the Puget Sound-Georgia Basin International Task Force was spawned from an *Environmental Cooperation Agreement* signed by the governor of the State of Washington, and the Premier of British Columbia. This agreement laid the groundwork for a more recent and more formalized Statement of Environmental Cooperation that was signed by U.S. EPA administrator Carol Browner and David Anderson, the Canadian Minister of Environment. Washington and British Columbia are involved in some 34 partnerships or agreements, the most of any U.S. State or Canadian Province

The Lake Champlain Basin Program's Steering Committee was formed as a result of a *Memorandum of Understanding on Environmental Cooperation on the Management of Lake Champlain* that was signed by the Premier of Quebec and the Governors of Vermont and New York. Other issue-specific agreements, such as the pending *Quebec-Vermont Agreement on Phosphorous Reduction in Missisquoi Bay* have maintained the effectiveness of this transboundary program. Because of these agreements, the governments that are involved take their role seriously which has resulted in noticeable water quality improvements.

International Institutions

Some of the cases have demonstrated the usefulness of existing treaty-based international institutions such as the U.S.-Canada International Joint Commission (IJC), the U.S.-Mexico International Boundary Waters Commission (IBWC), and the tri-national Commission for Environmental Cooperation (CEC). In some cases, these institutions provide established forums for dialogue or channels for management decisions that can help to overcome the governmental barriers to transboundary efforts. However, the existence of these organizations does not automatically mean that they will be relevant to the issues at hand or productive for a collaborative process.

In several cases, the activities of the IJC facilitated transboundary collaboration. The long-term presence of IJC Boards to regulate water quality and quantity in the Red River and ManOMin watersheds provided these efforts with an action channel from which they could build from. The transboundary efforts that arose in these regions grew in part out of a frustration that the IJC and government officials were not doing all that was necessary for the ecological and economic well being of the area.

In the Okanagen region, however, the presence of an IJC Board had no bearing on the transboundary effort. This is not a strike against the basin's IJC, but simply a predictable occurrence since the IJC is not involved in salmon restoration or ecosystem management. Instead, the IJC Board functions almost exclusively to monitor water quantity crossing the international border to irrigators in central Washington.

The involvement of the CEC in the San Pedro region was initially seen by many stakeholders to be an unwelcome intrusion into local affairs. Over time, however, people began to appreciate that the CEC's initiative to study the transboundary water issues would be able to help them identify solutions. While the CEC's findings from this study are not uniformly accepted, the CEC process has helped the stakeholders in the region identify a range of possible solutions, several of which have since been implemented.

Political Champions

The interest and advocacy of a political leader can be extremely helpful in overcoming the barriers to transboundary collaboration. While some participants may resent such outside influence over the collaborative process, a political champion can use their authority and endorsement to bring recognition, resources and legitimacy to an effort.

The interest of and friendship between the Premier of British Columbia and the Governor of Washington clearly benefited the transboundary efforts in the Puget Sound-Georgia Basin. These leaders helped create the International Task Force and the Environmental Cooperation Council (ECC) by signing a joint MOU. According to scholars who have studied this situation, “it...was very important...that the mandate began directly with the premier and the governor...This political endorsement has given the Council prominence and legitimacy, contributing greatly to its success.”¹³ In turn, the Task Force has benefited from the prominence and legitimacy such political endorsement has lent to ecosystem management efforts throughout the region.

Similarly, the interest of Secretary of Interior Bruce Babbitt, an Arizona native, in the San Pedro basin was critical to the development of the Upper San Pedro Issue Team and the San Pedro Binational Initiative. The creation of the Binational Initiative was a direct result of Babbitt’s personal relationship with Julia Carabias, his counterpart in Mexico. Without their leadership, that creative and innovative approach to transboundary problem solving would not have been possible. “It’s been very good that we’ve had two Secretaries...” explains the Issue Team Coordinator, “that really like each other, really had some common goals, and were very supportive and gave us a lot of help from the top to allow things to continue.”¹⁴

As a result of the continued support from Senators Leahy (VT), Jeffords (VT), and Moynihan (NY), the Lake Champlain Basin Program enjoys an annual appropriation through the Environmental Protection Agency. These Senators sponsored 1990 Special Designation Act and have been advocates for the program ever since. While these federal funds are earmarked for U.S.-based programs, the overall bi-national organization benefits.

The transboundary effort in the Gulf of Maine gained a tremendous amount of legitimacy from the highest political offices in the states and provinces. It effectively sanctioned a blue ribbon committee for the region to address large-scale environmental problems that were not being addressed by the states or provinces individually. With this added legitimacy, “It has been relatively easy to get U.S. funds. One of the original signatories of the agreement was Governor Judd—that helps.”¹⁵

External Recognition and Legitimacy

In many cases, an official designation that recognizes the value of the natural resources at hand has facilitated transboundary efforts. Such designations can bring attention and legitimacy to an effort, demonstrating that the transboundary resources are worth protecting. This recognition can come in a variety of forms, including a protective land

management designation, threatened or endangered species protection, or a legislative proclamation that an area is significant.

In order to protect the ecological values of the San Pedro River from the impacts of groundwater development, the U.S. Congress created the San Pedro National Riparian Conservation Area (SPNRCA) in 1988. The first of its kind, this designation took great strides towards protecting the ecosystem on the U.S. side of the international border. The SPNRCA has brought attention to the San Pedro's ecological resources, and has given legitimacy to efforts to preserve them.

One of the reasons that stakeholders in the ManOMin watershed developed the International Steering Committee was to protect important wildlife habitats in Voyageurs National Park that were impacted by water level fluctuations. While there were other economic and ecological concerns that were being addressed, the existence of this and other protected areas brought a great deal of purpose and legitimacy to the transboundary efforts in the region.

The *Lake Champlain Special Designation Act* is a good example of how legislative recognition (and funding) can be useful in jump-starting a transboundary effort. This act, passed by the U.S. Congress in 1990, recognized the value of Lake Champlain's resources, and also allocated funds to create the Basin Program and develop a management plan for the basin. Although this act specifically applied to the U.S. part of the basin, it did a great deal to build the partnerships and infrastructure that was needed for effective binational cooperation.

The growing recognition of the sockeye salmon's plight has been a driving force behind the binational efforts in the Okanagan region. The Okanagan sockeye is the last anadromous salmon that still migrates into inland Canada. Although not listed under the Endangered Species Act, the sockeye is a focal species for transboundary management efforts. Recalls a Canadian biologist, "We've lost a couple of dozen anadromous salmon stocks in the Columbia—we let them go. We traded them off for power benefits and flood control benefits...we may end up losing this stock, but we won't let it go without a fight."¹⁶

Overcoming Communication Barriers

One of the cornerstones of any effective collaborative resource management effort is open communication between the various stakeholders. In a transboundary situation, the presence of an international border can pose a major barrier to communication. Language differences, logistical complications, or the physical border itself can impinge movement of information and individuals across the international border. The mere presence of a binational effort, in any form, can help facilitate communication between stakeholders. In order to develop such an effort and overcome communication barriers, some of the case studies demonstrated the utility of interpersonal contact, conferences, as well as other approaches.

Interpersonal Contact

One of the main purposes of a collaborative resource management process is to foster dialogue that can lead to the development and implementation of management solutions. This is especially true in transboundary situations, where stakeholders may not even know who their counterparts in the other country are, and let alone how they can work together. In many of the case studies, interpersonal contact between stakeholders has shown to be important in developing and sustaining new communication channels.

The Red River Basin Board, Puget Sound-Georgia Basin International Task Force, and the Upper San Pedro Issue Team, are all examples where face-to-face contact between stakeholders was noted as an outcome in itself. As a Basin Board member explains, “One of the greatest accomplishments of the board is opening new lines of communication. Now, if I have a water supply issue...that carries over into Minnesota, I know the person to call.... That did not exist before the Board.”¹⁷

In light of the various logistical barriers to communication in the Puget Sound-Georgia Basin region, the fact that the Task Force meets on a regular basis is itself a major accomplishment. Fifteen years ago, it was considered a big deal for someone from “the other side” to attend a meeting on the other side of the border. Now, largely because of the Task Force, this practice has become second nature to those working on environmental issues throughout the region.¹⁸

Indeed, because of the barriers to communication across the international border, one of the initial goals of the Upper San Pedro Basin Issue Team was to share information and “teach each other about what the opposite side is doing.” As explained by the Issue Team Coordinator, one of their greatest accomplishments has come from “developing a relationship with our Mexican counterparts that is positive and helps in sharing information.”¹⁹

Conferences

In many of the case studies, conferences with binational representation were a useful tool to both strengthen the interpersonal contact and communication between stakeholders as well as to focus attention on the ecosystem and stimulate involvement on its behalf. Conferences can effectively facilitate information exchange while also engaging the general public, which can raise the greater awareness of the natural resource issues at hand.

The Rainy River First Nation in the ManOMin watershed holds an annual conference that brings together the many separate efforts in region. While there is still much work to do to connect these groups into a single, comprehensive transboundary effort, the conference is an important first step. In another example, the 1999 *Divided Waters-Common Ground Conference* in the San Pedro basin was considered to be a landmark event that brought many of the stakeholders together and symbolized the next phase of transboundary cooperation in the basin.

Approaches to Facilitating Communication

Recognizing some of the existing barriers to communication across the international border, the case studies also demonstrated a few specific approaches to overcoming them. For example, the Gulf of Maine effort produces a resource directory that helps keep stakeholders on top of who is involved and how they can be contacted. In order to reconcile the language barriers in some regions, the International Sonoran Desert Alliance has a translator present at all board meetings and publishes its newsletter in both Spanish and English. Similarly, the Lake Champlain Basin Program has begun publishing many of its outreach materials in French to make them more accessible to stakeholders in Quebec.

Overcoming Social and Cultural Barriers

In many places, communities on either side of an international border have developed with different cultures, histories and identities. The international border effectively separates these communities, often making a clear demarcation of “us” and “them.” This division makes transboundary collaboration and coordinated resource management difficult to achieve. In order to overcome established social and cultural barriers, it is important that stakeholders in transboundary situations work to develop a shared sense of community that transcends the international border. The case studies illustrated several examples of efforts that have capitalized on existing social relations or a shared history. Several cases illustrated the role that native communities can play in breaking down some of the barriers to transboundary collaboration.

Develop and strengthen a Greater Sense of Community

In spite of the inherent differences between the U.S. and Mexico, the western Sonoran Desert is often recognized as an integrated region because of its shared cultural and environmental heritage.²⁰ Some believe that the relationship between Arizona and Sonora is a particularly special one. According to one International Sonoran Desert Alliance board member, these states have maintained close ties through family and business connections for hundreds of years.²¹ While the wall running along the border grows taller and taller over time, “it doesn’t alter the fact the relationships between [Arizona and Sonora] and [its] people are really extraordinary.”²² When it comes down to it, ISDA can function because its work is a matter of people working with people, not governmental institutions trying to mesh their skewed laws and policies with one another.

Stakeholders in the Lake Champlain basin have been working to develop a greater sense of community by celebrating the shared history of the region. This binational basin is a significant colonial battleground, which has aided efforts to develop a regional cultural cohesiveness. In order to build from this shared history, the timeline for phosphorous reduction was set to correspond with the 400th anniversary of Samuel de Champlain’s arrival to the lake. In addition, there is an effort to develop a binational bike path the goes around the lake. This recreational amenity will also promote the basin as a distinct place regardless of the interstate and international borders.

Integrating Native Communities

Several of the case studies illustrated the importance of including native communities as stakeholders in their transboundary efforts. In these cases, native people were essential partners. More often than not, U.S. tribes, Canadian First Nations, and indigenous Mexican peoples share strong historical, cultural, and subsistence links to transboundary resources, as well as strong ethnographic links to each other. As peoples who resided in transboundary landscapes long before there were political borders drawn across them, native peoples tend to see across the border with ease. Having a third nation involved in many cases changed the dynamics of the situation.

In several cases the native people were able to bring together groups that ordinarily would not cooperate. A Canadian official noted, “As First Nations peoples, they don’t really recognize the border. Their view was that they were doing quite nicely and were well integrated before the border was put there,... They’ve been thinking of late that maybe they should ignore it.”²³ This was also true in the Sonoran Desert as well as the Puget Sound-Georgia Basin region, where the Coast Salish Nation do not distinguish themselves as different populations on either side of the international border.

In the ManOMin watershed the Rainy River First Nation used the fact that they were a separate nation to their advantage. They were able to act as mediator between the U.S. and Canada in this region and pulled stakeholders from both nations together to discuss transboundary issues. According to the Coordinator for the Watershed Program, “The main thing that has helped us [bring the stakeholders together] is the fact that we are a first nation, and we are seen as independent.”²⁴

Overcoming Economic Barriers

Economics can be a major barrier to transboundary collaboration for several reasons. Different economic ties to the natural resource base can make some stakeholders less willing to participate in an effort that may compromise those needs. Important stakeholders in a transboundary region may also be restricted from participating because their resource management and conservation resources are devoted to other areas, or they simply cannot afford to participate. The case studies demonstrated both kinds of economic barriers, illustrating how important it is to recognize the priorities of other stakeholders or work to facilitate the participation of others in developing an effective collaborative process.

Recognizing Different Priorities

In some transboundary situations, different stakeholders and communities can have incompatible resource management or conservation goals that are driven by their economic connection to the resources, or their parochial needs. These different economic priorities can be a major stumbling block for collaborative processes since they can make it difficult for individual stakeholders to embrace the goals of the greater effort. In most of the cases, it was apparent that the various stakeholders’ awareness of these differences facilitated transboundary dialogue and collaboration. In the San Pedro case, it was very

important that stakeholders recognized the different economic priorities on either side of the international border.

In the San Pedro basin, the stakeholders and agencies in Mexico have limited staff and funding to commit to conservation efforts the basin. While many players in the U.S. have been focused on water efficiency and habitat protection, agencies and citizens in Mexico have more immediate concerns about water quality and availability. As illustrated by a Department of the Interior official, it is important to the process that these differences are recognized: “One of the most important things is making sure that the U.S. isn’t too far ahead and out in front of Mexico,... and that the two sides of the border come together as equal partners and agree on common priorities, mutual concerns, and really focus in on a small set of things that they can do together.”²⁵

Facilitating Participation

In order to overcome socioeconomic barriers to binational conservation in the San Pedro basin, federal entities on both sides of the border initiated the San Pedro Binational Initiative. Under this Initiative, the U.S. government leveraged funds from private U.S. sources to help pay for the designation of a protected area in Mexico’s part of the basin. While the protected area is still in the works, it illustrates an example of a creative transboundary solution to address a transboundary resource problem.

In a more grassroots example of goodwill that can help in the development of a stronger binational community, a local conservation organization in Arizona donated Spanish-language ecology books to schools in Sonora that did not have them. There has also been talk of U.S. organizations helping Mexican communities with their water quality problems. As one researcher explained, “There is definitely some goodwill expressed and I think that if people on the U.S. side are made aware of just how bad the water quality and water availability issues are in Mexico, then they will be interested in helping out.”²⁶

In the case of the International Sonoran Desert Alliance, efforts to develop an eco-regional conservation process across the U.S.-Mexico border have had to focus on the local communities that are involved. With this local focus, ISDA has been very involved in building the self-reliance for conservation within these communities. With this approach, this case points to the importance of making local communities part of the solution. As described by ISDA’s executive director, “We’re trying to give people the power. If what we’re doing doesn’t do that, then we’re not doing the right thing.”

Maintaining an Effective Transboundary Process

The cumulative result of all of the barriers to transboundary collaboration is a slow and sometimes tedious process. Transboundary efforts can be difficult, and can easily deter the continued energy and involvement of stakeholders over the long term. An effective transboundary collaborative process is important to keep stakeholders moving forward towards eventual resource management outcomes. In order to maintain an effective process in a transboundary setting, the case studies have illustrated that some of the most important things that can facilitate progress are patience and an effective organizational

structure. While both of these attributes are important to any effective collaborative process, they are imperative in transboundary situations.

Organizational Structure

No two transboundary efforts are alike, and there is no single recipe for effective collaboration and coordination. While some of the efforts in the case studies have been effective with an informal, ad hoc structure, others are more formal. These formal arrangements generally comprise a governing board that consists of various stakeholder representatives who have the requisite access to resources and decision-makers that an effective process requires. While formal organizational structures may require more energy to create and maintain, they can also be useful in facilitating appropriate representation and participation, can provide a structured forum for addressing more difficult issues, and can be useful in attracting resources and legitimacy.

The Lake Champlain Basin Program is a highly structured effort with a Steering Committee, Citizen Advisory Committees, and other branches. This structure facilitates the flow of information between the Steering Committee and stakeholders throughout the basin. While the Red River Basin Board was established as a grassroots organization, a formal organizational structure has enabled it to achieve its objectives. Similar to the Basin Program, this effort operates under a Board of Directors, organized committees, and a small staff to do the daily work of the effort.

The organizational structure of the Puget Sound–Georgia Basin International Task Force recognizes the complications of a fully integrated binational structure, and has therefore developed two parallel processes. These processes, one within the B.C. Ministry of Environment, Lands and Parks, one within the Washington Department of Ecology, are linked together through their leadership roles on the Task Force. This structure allows the project partners work independently, learning from each other's successes and failures.²⁷

With a loose organizational structure, the transboundary efforts in the San Pedro Basin have been able to strengthen information flow and trust in the basin, and have also facilitated the probable designation of a new protected area. However, as the momentum continues to grow, it is becoming apparent that a formal binational entity will soon be needed in order to tackle the overarching issue of water allocation. Many of the stakeholders in the basin are talking about this possibility, but as the BLM's Issue Team Coordinator explains, "We have some major problems that we have to deal with, and those will have to come to some arrangement before any formal joint management plan is ever discussed... It's certainly, in my mind, worthwhile to try to work towards that."²⁸

Patience

Transboundary collaboration can be extremely slow. While any collaborative process requires patience, diligence, and commitment, the inertia of transboundary processes can challenge all three. It may take years to realize procedural results, let alone ecological ones, and can be frustrating for those involved. Transboundary efforts must bring together a myriad of national, state, provincial, and political systems. Meetings are often

infrequent, calling together far-flung organizations and agencies each with their own concept of the problem. Recognizing the frustrations of a slow, tedious process, some of the interviewees described the need for patience and offered the following advice to working through it.

After more than a decade of transboundary work, individuals in the Gulf of Maine have learned that collaboration across an international boundary requires a great deal of time to take root. Implementing a transboundary environmental effort “requires a long-term commitment and an on-going process,” explains the Global Program of Action Co-Chair, “Results are not seen immediately, particularly when the initial emphasis is developing a multi-stakeholder binational consensus on issues and strategies. And I think that for other regions which are trying to undertake the same kinds of activity where you’re trying to fundamentally change human behavior in order to be able to reduce the impact of human activities... it’s a long term prospect and it just takes a lot of time and ongoing effort...”²⁹

In only a few years of activity, the Red River Basin Board has made considerable progress but has not been able to keep to their original schedule. Their consensus-based process is important for maintaining the commitment of all members to the Board, but it also means it takes much longer to accomplish their goals. As one participant pointed out, “Consensus depends a lot on trust, and it takes time to build trust.”³⁰

The barriers that come with an international border certainly add an element of time to any project or effort. As the Upper San Pedro Issue Team Coordinator advises: “Recognize that things take three or four times longer than you would expect them to take to get things done when you’re working on an international level, so be patient. Great things can happen and it really does feel good when you accomplish some things.”³¹

GENERAL LESSONS FOR COLLABORATION

The following organizational and operational strategies are not unique to transboundary situations. Instead, they are fundamental to any collaborative resource stewardship process that occurs with or without the presence of an international border.

Diverse and Targeted Stakeholder Involvement

Stakeholder involvement is the keystone of any collaborative process. The majority of the case studies demonstrate that progress toward on-the-ground, ecological outcomes are the result of having *all* concerned parties involved in resource management discussions, including the public. In addition, those collaborative efforts that strategically recruit certain participants clearly benefit from the amount of energy and resources these individuals can bring to the table.

Stakeholder Diversity

A collaborative effort is most comprehensive when it succeeds in facilitating productive debates between stakeholder groups that typically have not interacted with one another or have interacted only in an adversarial manner. The sustainability of resource stewardship strategies that transcend jurisdictional boundaries relies upon a broad base of support, including that of landowners and other affected parties. A participant in the Gulf of Maine's Global Program of Action Coalition expressed the importance of expanding the realm of collaborative resource management beyond government resource managers to include nongovernmental organizations, the private sector, and tribal interests. According to this individual, "When you open up like that you get a much more dynamic process for moving things forward."³²

Often important to collaborative efforts focused on natural resource issues is the inclusion of groups that have traditionally stood in opposition to environmental protection. If potentially opposing interests and viewpoints are excluded from the ecosystem management process, there is the possibility that they may attempt to derail it from the outside, so encouraging their participation can be a key protective measure. The Lake Champlain Basin Program experienced some early struggles with the business community and property-rights advocates who challenged the first iteration of the basin's management plan – "It almost killed the whole program... It was ugly."³³ As a result, one of the opposition's "ringleaders" was brought to the table, and as the Vermont Program Coordinator explains, "One of the most vocal, biggest critics of the program is now very supportive... I guess we did our jobs because now he sees us as an asset... Likewise, he's an asset to us."³⁴

Strategic Involvement of Stakeholders

In order to be most effective, collaborative efforts should not only include a broad range of stakeholders, but should also be strategic about involving those stakeholders who can enhance their efficacy. This can mean including stakeholders who have access to policy decision-makers, recruiting the support of respected community leaders, or working with agencies that can leverage financial and in-kind resources for the effort.

The members of the Red River Basin Board were carefully selected to include a range of state and local governmental officials who could bring a variety of resources to the group. As explained by a representative of the Manitoba government, "I can bring to the table the resources of the Water Resources Branch where I work."³⁵ The primary source of funding for the Board has been through the U.S. states and Canadian province that are involved, and they are now looking to more local governments for future involvement and support.

ISDA is an example of a collaborative resource stewardship effort that has utilized a strategically selected board to its benefit. Many of ISDA's board members currently work or have previously worked across the U.S.-Mexico border and have meaningful connections to people on "the other side." Through these professional and personal affiliations, ISDA maintains relationships with academia, government, and local communities – the institutions through which it aims to implement its various projects.

As ISDA's primary focus is on encouraging changes in environmental behavior at the local level, board member contacts with community organizers have been particularly significant.

Public Participation

It is often important to the legitimacy of collaborative resource management efforts that they engage the general public early and often. As illustrated by some of the case studies, public involvement can help broaden the visibility of an effort and develop a strong constituency of citizen support.

A major strength of the Lake Champlain Basin Program is its Citizen Advisory Committees (CACs). Reflecting the stakeholder diversity of each jurisdiction involved in the program, these 14-member committees are represented in the Program Steering Committee by individual CAC Chairs. One program participant noted that, "because of those CACs... I think that there's a great exchange that goes on. All the people around the lake get a better sense of the issues."³⁶ Despite this grassroots representation however, the Steering Committee has been criticized for its limited citizen input in other areas.

Literally reliant upon public participation to achieve its goals, the International Sonoran Desert Alliance (ISDA) is the one program of those analyzed through case studies that aims to have its major impacts at the local level. Although it covers a large area, ISDA is focused on improving individual people's lives and this has led to a significant amount of public participation. In Mexico, the majority of ISDA's support come from the local citizenry.³⁷

Effective Organizational Framework

The development of a solid collaborative process is an important step in moving diverse stakeholders towards the accomplishment of a shared goal. By creating a forum for relationship building and information sharing, an organized process can be a powerful tool to articulate and implement solutions to shared natural resource problems.

Collectively, the case studies illustrate several examples of strategies that help to create a framework from which collaboration aimed at ecosystem management can build.

Individual Commitment and Leadership

Any collaborative effort is only as strong as the individuals who participate in it. As was highlighted in many of the case studies, collaboration can be greatly facilitated by the energy and hopeful attitudes certain individuals have to lend. Without these people, programs may not have moved forward as quickly or even at all.

The Gulf of Maine Council on the Marine Environment, like many collaborative efforts, was created solely through the efforts of a few individuals, referred to as the Council's "backbone."³⁸ The Puget Sound-Georgia Basin International Task Force also gained significant momentum from the dedication and persistence of specific members. The current Canadian Task Force co-chair cites a former U.S. Environmental Protection Agency representative as a key factor in encouraging productivity. Noted for his

enthusiasm and “ecosystem” thinking perspective, this Task Force member postponed his retirement, which allowed for his continued participation during the Task Force’s more developmental stages – incidentally keeping the Task Force “alive.”

Common Vision

As the participants of any collaborative effort struggle to understand the often divergent interests of all other stakeholders at the table, it is easy to lose sight of the purpose in bringing everyone together. In order to keep their effort on track, many of the programs outlined in the case studies have articulated a common vision or mission statement toward which its participants can strive. The Puget Sound-Georgia Basin International Task Force reminds its members that their mission is: “to promote and coordinate mutual efforts to ensure the protection, conservation and enhancement of the shared inland marine environment.” Likewise, ISDA aims “to encourage a healthy, positive relationship between the Sonoran Desert, its inhabitants, and the needs of humanity,”³⁹ while the Red River Basin Board seeks to “create and implement a comprehensive management plan for the Red River Basin.”⁴⁰ Although these missions are broad, they evoke inspiration by reminding program participants of their “greater” mission.

Dedicated Staff

When financial resources are available, collaborative programs can benefit greatly from hiring paid staff who are dedicated specifically to the functioning of the effort. Staff can assume responsibility for necessary administrative tasks, allowing volunteers and formally engaged stakeholders to accomplish more substantive goals. In particular, a staff figurehead such as an executive director can lend the effort a sense of organization by establishing an individual point of contact for those interested in its work. According to a Red River Basin Board member, “not having an executive director made it difficult for the Board to establish an identity for itself amongst the communities.”

Also illustrated by the Red River case, even a small staff can provide a great deal of logistical assistance to a multi-stakeholder collaborative effort. The existence of Red River Basin Board staff has been essential to the perpetuation of Board activities since the Board members themselves are all volunteers who can only dedicate a limited amount of time to the effort.

Similarly, the Gulf of Maine Council on the Marine Environment realized that dedicated Council staff members were needed to keep things in order and moving in a productive direction. The Council had long prided itself on its lack of a staff and the fact that its members did all of the work. Recalls the Council’s Coordinator, “...That’s always been the Council’s motto: let’s use existing resources and personnel, let’s not be heavily staffed, let’s do it ourselves.”⁴¹ However, Board members’ time was often consumed by the responsibilities of their jobs outside the Council, leaving them limited time to commit to the effort. In response, several full-time staff members were hired to handle centralized administrative functions, and the Council has been more organized as a result.

Celebration of Incremental Accomplishments

As transboundary efforts aimed at collaborative resource stewardship work to develop support among the general public and their constituency of stakeholders, it is important for them to be able to demonstrate that progress is being made. Occasionally celebrating the achievement of benchmark goals can be helpful in maintaining public support and internal momentum. By picking the “low hanging fruit,” several of the programs profiled in the case studies provide good examples of the positive effects of employing this strategy.

The Lake Champlain Basin Program demonstrates this lesson in two ways. First, by setting a 5-year goal for phosphorous reduction in the lake, the program was able to mark their early progress and celebrate when they surpassed expected results. As explained by the Quebec Citizen Advisory Committee Chair, “I think that that’s a major accomplishment, even if it was at the start easy to identify the worst spots and fix them.”⁴² It can take a long time to see the effects of environmental accomplishments, so, as an EPA official involved in Basin Program activities pointed out, “It’s important to pick and choose so you have some quick successes that are visible.”⁴³

In the Gulf of Maine, both the Council on the Environment and the Global Program of Action Coalition (GPAC) have generated enthusiasm for their efforts by publishing periodic accounts of the positive steps they are taking to restore the Gulf ecosystem. Through formal documents and informal newsletters, both organizations have articulated optimistic visions of the Gulf’s environmental health and the strategies they are employing to meet this end.

Creativity and Innovation

Due to the fact that ecosystem management is an approach to sustainable resource conservation that challenges traditional management structures, creativity and innovation play a pivotal role in the creation of the collaborative processes that support it. In the case of ISDA, this U.S.-based organization established itself as a Mexican corporation, going through the appropriate channels outlined in the Mexican civil code, to facilitate movement of project coordinators across the border and the implementation of projects in Mexico. While still incorporated as a 501(c)(3) non-profit institution in the U.S., ISDA is legally recognized as an entity allowed to “do business” in Mexico. Moreover, ISDA’s flexibility as a non-governmental non-profit organization has allowed it to follow a “dynamic process which is very difficult to achieve when it is mandated.”

CONCLUSION

Ecological and natural resource systems that are divided by an international border present a unique problem to the stewards of those resources. The management of transboundary resources, as well as the benefits from them, is often shared by two or more sovereign nations. As problems or disputes arise over the management of those shared natural resources, there is generally no overarching legal authority or management framework that can provide an easy solution to these issues. Instead, an increasing

number of transboundary regions are working to develop processes that bring together the stakeholders, resources and information that are necessary to solve complicated transboundary resource issues. While these collaborative resource management processes can be difficult and time consuming, they are often necessary in order to develop and implement effective transboundary management solutions and eventual ecological outcomes.

After taking an in-depth look at eight different examples of transboundary collaborative resource management efforts, this study found that the elements of effective transboundary collaboration are not unlike the elements of any collaborative process. The difference, however, is that in a transboundary situation, some of the barriers to collaboration are greatly enhanced by the presence of an international border. In revealing the increased barriers to transboundary collaboration, the efforts described in the case studies also demonstrated numerous strategies that were used to overcome those barriers. Each of these transboundary efforts were unique in the resource issues that they were facing, their approaches to those issues, and their effectiveness in developing an effective transboundary process or tangible ecological outcomes. Indeed, the only thing that was uniform to all of these situations was that they did not conform to any prescribed approach or structure. Instead, each was uniquely tailored to fit the resources, stakeholders, politics, cultures and economics in the area.

As transboundary resource management issues continue to arise, the breadth and depth of experiences will increase. The programs and efforts that were described in the case studies will continue to refine their collaborative processes, and new communities will realize that they cannot solve their natural resource problems on their own. By understanding the barriers that come with the international border and seeing examples of how those barriers were overcome, future transboundary efforts can learn how to develop their own effective transboundary collaborative process.

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STEWARDSHIP OF THE TRANSBOUNDARY FLATHEAD

INTRODUCTION

The Flathead River Basin is a highly valuable watershed facing many of the same management challenges as other border-spanning natural areas across North America. The authors were asked by the Montana Wilderness Association (MWA) and the East Kootenay Environmental Society (EKES), the leaders of the Flathead Transboundary Network, to investigate mechanisms of transboundary management.

Conventional wisdom suggests that actors in the Flathead look to established formal institutions, such as the International Joint Commission or the Commission on Environmental Cooperation, or legally-binding treaties to ensure ecologically sound management of the resource through a central transboundary forum. The findings of this study suggest, however, that the solutions to cross-border resource management are not so “neat” or “clean.” Instead, the common response was activity on multiple levels including a broad range of stakeholders. The cases studied by the authors utilized a variety of collaborative mechanisms to manage transboundary ecosystems, but never solely through a formal institution or treaty.

The objective of this chapter is to generate possible options available to the groups in the area based on the experience of other transboundary efforts. This chapter compares and contrasts the Flathead Transboundary Network’s strategy with this study’s findings, detailed in Chapter 7. It first assesses the current situation in light of the case studies, then offers observations, and finally draws conclusions about the future of transboundary collaboration in the Flathead.

LAY OF THE LAND IN THE TRANSBOUNDARY FLATHEAD

Transboundary resource management faces a host of significant barriers in the Flathead Basin. Over 95% of the Basin’s landbase is controlled by state, provincial, and federal agencies with different, and at times conflicting, missions. The incentives for these groups to open up their decision making process to influence from stakeholders on the other side of the international border differ dramatically from agency to agency. The values of the human communities with an interest in the Flathead likewise have differing, and often conflicting, visions for the Basin’s resources.

Nevertheless, there is a significant amount of transboundary cooperation around the goal of ecosystem protection in the Flathead Basin. The work of the Flathead Transboundary Network’s (FTN) constituent members suggests the Basin’s long-term prospects are bright. Many of the necessary ingredients for a sustainable collaboration are already well

developed in the Flathead. The FTN has successfully taken advantage of existing collaborative infrastructure, included a number of relevant agency representatives, generated on-the-ground successes, and articulated an exciting vision.

Build on Existing Infrastructure

The case studies suggest that transboundary collaboration seems to work best where groups capitalize on opportunities to build from existing resources. Transboundary efforts in the Okanagan Basin and the San Pedro Basin saved a great deal of time by building from existing transboundary forums. The FTN has already done that by using the Flathead Basin Commission to assemble stakeholders.

This complicated web of organizations in the Flathead creates a sort of transboundary safety net. The mutually reinforcing work of the FTN, the Flathead Basin Commission, the North Fork Preservation Society, and others makes it difficult for threats to undermine the region's ecology. The transboundary efforts in Red River Basin, the Okanagan Basin, and the ManOMin watershed also capitalized on a multi-layered amalgamation of collaboration.

Ecological Successes

A particularly striking aspect of the Flathead is the amount of “on-the-ground” activity that is underway. In Montana, The Nature Conservancy (TNC) has been very active in the Basin, targeting private lands in the U.S. for conservation. In British Columbia, the East Kootenay Environmental Society (EKES) has been working with timber companies to ensure that logging plans protect ecologically sensitive natural areas.¹ The work of these two groups, and others, moves the area toward the shared goal of ecological health. In fact, the amount of work underway in the Flathead exceeds that of many of the cases studied in this report. The experiences of the Lake Champlain Basin Program and the Gulf of Maine Council suggest that FTN should recognize and celebrate these successes.

An Exciting Vision

The FTN articulates an exciting new vision for the Flathead in its proposal for an International Conservation Reserve (ICR). The proposal covers a manageable 1,600-square mile geographic area, which is overwhelmingly owned by the U.S. or British Columbia governments. The ICR concept would ensure habitat connectivity in the Flathead for migratory wildlife and preserve the near-pristine water quality of the river itself.

Even with such an engaging vision, the FTN's goal of creating an ICR does not appear to be as attainable as originally hoped. Recently elected Montana Governor Judy Martz will not likely change her hostile position toward increased government control of resources in general, and therefore seems unlikely to support an ICR. Even with an upcoming election, B.C.'s New Democratic Premier Ujjal Dosanjh appears unwilling to take further action to protect additional crown lands during the remainder of his administration. His successor will likely be a member of the conservative Liberal Party, who would be even less likely to consider an ICR.

In the face of what appear to be significant political obstacles, it seems appropriate for the Network to determine what biological and procedural goals underlie the ICR concept since progress might be made toward those goals *while* advocating for the ICR. If the true goal of the FTN is preservation of the area, then FTN should prepare to fight a protracted political battle. As an analogue, advocates for wolf reintroduction into the area battled for much of the last 100 years. Since the fate of the transboundary Flathead seems to hinge on B.C.'s management policies, FTN will need to increase its political capital in Vancouver. Political strategies, however, are a topic for a different study.

If the FTN's goal of an ICR is meant to meet certain biological goals to improve ecosystem health or procedural goals to ensure the Network's influence on future management of the resources, the FTN could act as the nexus for transboundary collaboration. In this role, the FTN could facilitate a collaborative process that would act like the administrative forum of the ICR. Although B.C. is unwilling to consider intervention by the International Joint Commission, the province may harbor unrecognized incentives to prevent another Cabin Creek. Given the size of the 1988 opposition to the coalmine, FTN has an opportunity to demonstrate that another large-scale resource development proposal will elicit another significant political challenge. In that sense, there appears to be a rich potential for collaboration.

OBSERVATIONS FROM THE CASE STUDIES

The cases in this study used a number of strategies to overcome barriers to transboundary collaboration. The Flathead Transboundary Network is facing a number of significant barriers to moving their transboundary effort forward. It may be possible to address some of these difficulties through strengthening the involvement of B.C. in the effort, broadening existing linkages, and including native communities in the effort.

Strengthening B.C.'s involvement in the Transboundary Effort

There appears to be a great deal of interest in the Flathead Basin on the U.S. side of the border. Non-profits, such as MWA and TNC, and Federal Agencies, such as the Park Service and the Forest Service, are engaged in discussions of protection of this region. While there is active participation by non-profits from British Columbia, such as EKES, and industry involvement from Tembeck, the government has not begun to express an interest in considering changes to the management of the Flathead Basin. The interest and involvement of the B.C. government is vital to the success of this transboundary effort. Stakeholders in each of our in-depth cases used a number of strategies to increase the involvement of a particular group including seeking out a vocal political champion and the operating within the framework of existing of transboundary agreements and institutions.

Political Champions

The interest and advocacy of a political leader can be extremely helpful in overcoming the barriers to transboundary collaboration. While some participants may resent such outside influence over the collaborative process, a political champion can use his

authority and endorsement to bring recognition, resources and legitimacy to an effort. It is not clear who this champion would be in Montana, since the current Governor likely will not be receptive to the Network's cause, but it is important to consider a variety of possible leaders.

Our cases suggest there are a number of individuals who can serve as a political champion for an effort. The interest of and friendship between the Premier of British Columbia and the Governor of Washington clearly benefited the transboundary efforts in the Puget Sound-Georgia Basin. These leaders helped create the International Task Force and the Environmental Cooperation Council (ECC) by signing a joint MOU. Similarly, the interest of Secretary of Interior Bruce Babbitt, an Arizona native, in the San Pedro Basin was critical to the development of the Upper San Pedro Issue Team and the San Pedro Binational Initiative.²

As a result of the continued support from Senators Leahy (VT), Jeffords (VT), and Moynihan (NY), the Lake Champlain Basin Program enjoys an annual appropriation through the Environmental Protection Agency. The transboundary effort in the Gulf of Maine gained a tremendous amount of legitimacy from the highest political offices in the states and provinces. It effectively sanctioned the Council as a blue ribbon committee for the region to address large-scale environmental problems that were not being addressed by the states or provinces individually.³

Building upon Existing Agreements and Institutions

The cases in this study tended to use existing channels for collaboration to increase the participation and commitment of stakeholders. It may not be necessary to implement a new international agreement in order to increase B.C.'s role in this transboundary effort, but it might be useful to consider the role of existing agreements.

Our research suggests that a legally enforceable international treaty is not a necessary, or even advisable, way to foster collaborative transboundary resource management. In fact, we did not find a single instance in which advocates for transboundary management designed a new binational or tri-national treaty. Instead, the experience of successful cases generally followed a similar path. In most cases, efforts grew from an ad hoc relationship and gradually expanded involvement and commitment as the human relationships within the organization strengthened.

What follows is a list of options for collaborative infrastructure in the Basin. Other cases were able to utilize these treaties and agreements to increase the commitment of parties to the transboundary process. The specific agreements are talked about in some detail in Chapter 3 (Literature Review) and in the relevant cases themselves. While all of these may not be appropriate for the Flathead Basin, it may be worth considering the possible role of a few of them in increasing B.C.'s involvement in the effort.

Boundary Waters Treaty

The Boundary Waters Treaty establishes principles and mechanisms to help prevent and resolve disputes between the U.S. and Canada regarding water quantity and, to some

extent, quality.⁴ It created the International Joint Commission (IJC) to supervise implementation. The IJC created numerous Water Control Boards to monitor the quality and quantity of water flowing across the border and has recently discussed creating International Watershed Boards (IWB) to facilitate coordinated management at the watershed level.⁵ While the IWB would have the legitimacy granted by operating under a formal binational treaty, the IJC has not implemented a single IWB at this point and does not appear eager to do so in the Flathead Basin.

In addition to the IJC's reluctance, the Boundary Waters Treaty may not be the best option because the IJC review authority is inherently limited. The IJC reviews disputes as they arise, but it can only involve itself at the request of all the government parties. It is required to give all interested parties an opportunity to be heard on matters under consideration, which is commendable but can be time consuming. Finally, the U.S. and Canada are under no obligation to abide by the recommendations made by the IJC.

Another weakness of the IJC for the Flathead Basin is the fact that it is focused on diversion or pollution issues. Since the primary thrust of the FTN's work is ecosystem management, the Boundary Waters Treaty in general, and the IJC in particular, could be most effective at bringing an objective institution to the Flathead Basin in the form of an IWB. This would allow a forum for reviewing proposed actions on the watershed level. Even under the IWB, it is questionable what relevance the IJC has to the pressing biological issues affecting migratory terrestrial species' need for habitat corridors.

Unfortunately, as previously mentioned, the IJC will only involve itself where it is welcomed by the government parties. In the Flathead, British Columbia has repeatedly expressed their desire not to have the IJC increase its presence in the Basin.

North American Agreement on Environmental Cooperation

The North American Agreement on Environmental Cooperation (NAAEC) was negotiated as a side agreement to the North American Free Trade Agreement (NAFTA). The NAAEC established the trinational Commission for Environmental Cooperation (CEC) to "address regional environmental concerns, help prevent trade and environmental conflicts, and promote effective enforcement of environmental law."⁶ The CEC was set up to facilitate cooperation and public participation in natural resource conservation in the context of increasing economic and social links between the U.S., Canada, and Mexico.

One of the powers of the CEC is to investigate allegations of non-enforcement of environmental laws by member nations. This is done through Article 14 Citizen Submissions on Enforcement Matters, which enables the public to play a whistle-blower role when their government fails to effectively enforce its environmental laws.⁷ There have been 29 Citizen Submissions to date, and only two have resulted in CEC investigations.

These investigative powers of the CEC appear to be marginally effective, and may not be relevant to the situation in the Flathead Basin. However, as illustrated by the San Pedro

case study, the intervention of the CEC to “study” transboundary resource issues can be very useful in raising the awareness of those issues and pushing stakeholders to develop solutions. In the San Pedro Basin, the CEC was first engaged through a submission from the Southwest Center for Biological Diversity. This submission was withdrawn when the CEC decided convene a study that eventually led to the development of several potential management solutions.

In the Flathead Basin, the intervention of an outside organization is likely to be viewed by locals an unwelcome intrusion (as it was in the San Pedro) and may not be as effective as the FTN’s current grassroots approach. However, the situation in the Flathead is consistent with the CEC’s “Stewardship for Shared Terrestrial and Marine Ecosystems and Transboundary Species” program,⁸ and such a study of the Flathead situation could be useful in bringing political focus, attention and legitimacy to the Flathead effort.

Columbia River Treaty

The Flathead River is a minor tributary to the Columbia River system. Nevertheless, as part of the system it is included as part of the Columbia River Treaty and is thus subject to the Columbia Basin Ecoprovincial Review and Subbasin Planning Process (ERSPP). The Flathead is a subbasin of the Mountain Columbia ecoprovince, which is relatively advanced in its planning process.[†] In fact, it released its first draft workplan on March 16, 2001.

The ecoprovince does not currently include a transboundary component. Scientists deeply involved with the effort say that its planning documents will be returned by the Northwest Power Planning Council and directed to build in transboundary priorities.⁹ The planning process could give FTN an opportunity to affect the priorities of the local land managers through collaborative priority setting. The ERSPP includes many elements of ecosystem management and would provide the FTN an opportunity to base strategies on science, rather than tactics or opportunity. Additionally, the conferences associated with the ERSPP could serve as venues for the FTN to expand its communication network and draw support from similar efforts in the region.

The extent to which FTN can directly involve itself in this process is unclear because the level of participation open to those other than government agencies and tribes has not been specified. Additionally, the level of commitment to the results of this process exhibited by Canadian interests is also unclear. An additional problem of this approach is that the primary leverage brought to bear through this process is project funding. If the threat to the ecosystem cannot be addressed through project dollars, or if agencies are not interested in monies for mitigation, then this process is less useful.

[†] See <http://www.cbfwa.org/files/province/mtncol/Default.htm> for specifics. Content changes weekly.

Endangered Species Legislation

The Flathead Basin is home to several endangered or threatened species on both sides of the border, especially the grizzly bear, gray wolf, and bull trout.^{††} Although Canada does not have its Species at Risk Act (SARA) in place yet, there is good reason to believe that some version of the legislation will soon pass through Parliament.¹⁰ When it does, there are number of species of concern currently listed by the provinces for which Canadian agency officials must prepare recovery plans. Clearly this would increase the involvement of British Columbian officials in the Flathead Basin. For transboundary species, agencies in the U.S., Canada, and U.S. tribes will likely harmonize their priorities. Even without the Canadian legislation, groups in the Okanagan Basin are working together to protect sockeye salmon. It may be possible for MWA and other groups in the Flathead Basin to collaborate with groups working on protection of grizzly bears and the reintroduction of wolves in the region.

The single biggest obstacle to utilizing this strategy is the lack of legislation in Canada and the possibility that it will not be put into place for a number of years. In addition, this channel is predicated upon interested Canadian and U.S. officials. If either party is not interested, there is little leverage to motivate action. While ESA/SARA primarily focus on single-species, not ecosystem management, they nonetheless can provide a productive foundation for collaboration form which broader ecosystem management might evolve.

Memorandum of Understanding or Agreement

Since the mid 1980s, there has been informal discussion of a joint agreement between the governor of Montana and the premier of B.C. centered on protecting the ecological values of the Flathead Basin. In fact, in 1996, Montana drafted the British Columbia – Montana Cooperation Initiative, essentially a Memorandum of Understanding (MOU). An MOU, or a Memorandum of Agreement (MOA), is a non-binding legal document that formalizes an agreement reached by two or more parties. Despite the fact that British Columbia is a party to more cross-border MOUs than any other Canadian province, British Columbia rejected the proposal.

Nevertheless, our research shows that MOUs are an effective means of legitimizing an effort. Though there are often no formal commitments of money or resources to collaboration in the MOU, the experience of the International Sonoran Desert Alliance (ISDA) and the Upper San Pedro Basin Program show that the “blessing” from high-ranking political officers increases credibility. Formalizing the cross-border relationship can facilitate coordination, can confer legitimacy on organizations involved with the problem, and can raise the visibility of a non-governmental collaboration. A MOU codifies principles into a formal document that can be referred to and publicized.

The potential for drafting a new agreement in the immediate future is limited, however. The political climate for consideration of such an agreement appears unsupportive in

^{††} British Columbia’s Conservation Data Centre lists three classes of species: Red-list (extirpated, endangered, threatened, or are candidates for such status), Blue-list (vulnerable indigenous species or subspecies of special concern), and Yellow-list (secure).

Montana, and will likely become even worse after the upcoming elections in B.C. Even in a favorable political climate a MOU still requires a strong transboundary network to muster the necessary resources, as shown in the Gulf of Maine. Although MOUs are not legally binding, the case studies did not find that fact troublesome. Instead, MOUs were very effective in fostering collaborative management in the Gulf of Maine, San Pedro, ISDA, and the Puget Sound-Georgia Basin.

Broadening the FTN's Existing Linkages

Through our research we found that involvement of a diverse group of stakeholders is essential to a long-lasting transboundary effort. The FTN does include participants from both sides of the border. The involvement of these existing groups can be strengthened, but it is also important to increase the participation to include a broader range of interests. FTN can build on its existing partnerships and participation in order to expand its stakeholder diversity.

Securing Active Participation

The Flathead Transboundary Network (FTN) maintains relationships with a number of groups, mainly those involved in the environmental field. These connections are a bit tenuous in that there is no commitment to their active, continued participation. The individuals who participate in the effort have many other job-related responsibilities and do not have the time to devote to the transboundary effort. The establishment of a more formal structure, where “formal” does not mean institutionalized by government but more deliberate and organized in terms of goals and objectives, could help the FTN secure more reliable involvement by a greater variety of parties. Making people an official part of the process can motivate a commitment to seeing things through. Whether it is derived from a desire to preserve or use its tremendous natural resources, the Flathead invokes passion in people and tapping into this passion could help raise the profile of the FTN.

The Gulf of Maine and ISDA cases illustrate that the recruitment of dedicated staff can be amazingly helpful in coordinating the various and multiple cross-border tasks required of any transboundary effort. Yet, there is no reason that FTN must copy these models exactly. Instead, it could be adequately served by establishing of a steering committee with basic organizational responsibilities – a simple gesture aimed at formalizing participation rather than structure, *per se*.

Building from Existing Partnerships

The strong working relationship between the MWA and the EKES is a good starting point from which to garner a more significant constituency of support for transboundary cooperation on environmental issues pertaining to the Flathead Basin. Any attempt to instill a long-term environmental stewardship ethic in the transboundary Flathead region requires a broad array of parties committed to pursuing this goal. Although the FTN's work is well received in the conservation community, it suffers from a lack of legitimacy in the communities whose actions jeopardize the ecosystem—leaving the effort open to potentially sizeable political opposition. While the environmental groups provide a good

foundation upon which to build, our cases illustrated that it is necessary to include a more diverse set of stakeholders to maintain transboundary collaboration.

As they work to broaden the reach of the substantively comprehensive and relatively institutionalized Puget Sound-Georgia Basin International Task Force, its co-chairmen are actively recruiting new, and in many cases, essential members from different relevant sectors of the transboundary community. These additions include Canadian First Nations and local government bodies, both of which have ecological interests. In addition, the Task Force strives to keep abreast of the environmental work that private non-governmental organizations are doing in their region. For example, the goals of the non-profit Sound and Straits Coalition are very similar to those being pursued through government channels by the Task Force – clearly, it makes much more sense for these consortia to coordinate rather than duplicate efforts.

Under-representation of various interests on the Gulf of Maine Council has been a point of contention for some time. Perhaps because of the Council's limited opportunities for participation, the Council on Environmental Cooperation helped create the Global Program of Action Coalition (GPAC). GPAC's primary strength is its diverse membership. In fact, the GPAC will likely enter into an advisory relationship with the Council in 2001.

Developing New Channels for Collaboration

Despite the Flathead Basin's history of collaboration on natural resource issues, the FTN has rightly deemed these limited channels to be insufficient for their purposes. Instead, the FTN is attempting to create an entirely new channel for communication around the ICR concept.

The development of new communication channels is essential to building relationships and trust in the Basin. Allowing land managers in the Canadian Flathead an opportunity to converse with their American counterparts, for example, around a central organizing principle facilitates those individuals finding common goals and objectives.

Creating new communication channels is not easy, however, and certainly not without risk since a large number of those living in the Basin are already opposed to additional governmental control over the natural resource base. Natural resource issues can involve particularly difficult choices, often between human use and ecological protection. Our research, however, shows that educating resource users with defensible science can help to make the trade-off seem less severe. The FTN seems to be involved in creating a new communication channel to get prospective supporters to pick one message over competing viewpoints. This approach is inherently adversarial and contrary to community building. Rather, creating this new transboundary communication network should be about raising public awareness of the situation in the Flathead Basin.

In fact, several efforts (Global Program of Action Coalition, Red River Basin Board, Rainy Lake and Namakan Reservoir Water Level International Steering Committee) used the act of gathering information and data in the watershed as a way to bring together

stakeholders. Bringing diverse interests together around sound science can bring about agreement on exactly what the priorities for the Basin are. In a sense, this endeavor uses science to engage stakeholders in a joint visioning process.

Inclusion of Native Communities

In many of our cases, native communities played a vital role in the transboundary effort. In the ManOMin watershed the Rainy River First nation took the lead in opening lines of communication among different efforts in order to expand the scope of management efforts in the Basin. There may be a role for the Native Communities in the Flathead Basin. While there may be a desire to involve native peoples, it is often not an easy task and takes outreach and encouragement from the transboundary group. While it may take time to begin to involve native people, they can become an important asset.

The Cabin Creek coal mine controversy revealed the great significance of the Flathead Basin's ecological resources to the Confederated Salish and Kootenai Tribes in the U.S. and the Ktunaxa/Kinbasket First Nation in Canada. Their strong historical, cultural, and subsistence links to the transboundary resources, as well as their strong ethnographic links to each other, position them well to facilitate transboundary collaboration.

While Canadian First Nations are represented by the Crown, U.S. tribes are sovereign entities. Many Canadian First Nations, especially in British Columbia, have not signed formal treaties with the Crown settling territorial disputes and other issues. Nevertheless, recent Supreme Court decisions in Canada affirmed an aboriginal entitlement under the Canadian constitution to certain natural resources, such as salmon. The decisions made clear that federal departments have a fiduciary obligation to First Nations, which essentially means that federal agencies must go the extra distance to ensure that resource or interactions that federal agencies initiate benefit or take care of the special interest of the First Nation's peoples.¹¹ In a many instances (ManOMin, Okanagan, and ISDA), this obligation, coupled with U.S. tribes' sovereign standing, has manifested itself in transboundary collaboration.

There are a number of reasons the inclusion of native populations could be particularly helpful. It may be possible in the Flathead Basin to build upon existing cultural resources and shared community around the experience of native peoples. Native peoples are generally unencumbered by the psychological effect of the border, and they may welcome the role of being a steward of natural resource and ecological values.

While there are many reasons to include native peoples in any transboundary effort, it could prove difficult for a number of reasons. The likely next premier of British Columbia has already expressed his intention to disregard progress made toward settling First Nations land claims. Relative to the federal governments, tribes and First Nations might be challenged by resource limitations. There is a danger of seeming exploitative of the position of the tribes and First Nations by moving their hand toward this option.

CONCLUSION

Stakeholders who are trying to protect and manage the transboundary Flathead are experiencing many of the same barriers as any cross-border ecosystem management effort. Despite these difficulties, there is a great deal of transboundary cooperation already occurring in the Basin, particularly through the work of the FTN. While the FTN has opened lines of communication between stakeholders in Montana and British Columbia, there are more barriers to overcome in order to become a sustainable transboundary effort.

There are a number of lessons from the cases considered in this study that could facilitate further cooperation in the region and help establish a long-term international effort. It is important to stabilize the current foundation but also to build upon this work. Our cases suggest that the FTN could work to strengthen B.C.'s involvement through a political champion or the use of a number of existing international agreements. Including a more diverse set of stakeholders in the efforts could also facilitate further collaboration. The transboundary Flathead is a valuable resource, and those in the area can continue to work collaboratively to protect this important area.

ENDNOTES

¹ Erica Konrad, Project Director, East Kootenay Environmental Society, Elk Valley Branch. Personal communication, 23 August 2000.

² Beaumont McClure, San Pedro Issue Team Coordinator, Bureau of Land Management, personal communication, 23 January 2001.

³ Laura Marron, Coordinator for the Gulf of Maine Council, personal communication, 31 January 2001.

⁴ "What is the Boundary Waters Treaty?" International Joint Commission website, <http://www.ijc.org/agree/water.html>, accessed on 21 March 2001.

⁵ Jennifer Read, Research Associate, Great Lakes Institute for Environmental Research, University of Windsor, personal communication, 23 March 2000.

⁶ North American Commission on Environmental Cooperation, "Who We Are," http://www.cec.org/who_we_are/index.cfm?varlan=english, accessed October 17, 2000.

⁷ North American Commission on Environmental Cooperation, "Citizen Submissions and Enforcement Matters," <http://www.cec.org/citizen/index.cfm?varlan=english>, accessed April 15, 2001.

⁸ North American Commission on Environmental Cooperation, "Stewardship for Shared Terrestrial and Marine Ecosystems and Transboundary Species," http://www.cec.org/programs_projects/conserv_biodiv/stewardship/index.cfm?varlan=english, accessed April 15, 2001.

⁹ Keith Wolf, Director of Conservation Sciences, Golder and Associates, personal communication, 15 February 2001.

¹⁰ Keith Wolf, personal communication, 15 February 2001, and Kim Hyatt, fisheries biologist, Department of Fisheries and Oceans, personal communication, 19 January 2001.

¹¹ Kim Hyatt, Canada Department of Fisheries and Oceans, personal communication, 21 November 2000.

CONCLUSION

This study has investigated collaborative ecosystem management efforts that cross an international border, hoping to gain a better understanding of how these efforts are similar to or different from domestic collaborative resource management efforts. Based on the experiences of individuals and organizations that are involved in eight transboundary efforts, we found that most of the elements of collaboration that exist in a domestic setting are also important in a transboundary situation. Similarly, many of the barriers to collaboration are also the same. However, the added complexity of an international border exacerbates some of those barriers, making them much more profound and formidable than they may be in a domestic setting. The transboundary efforts that are outlined in the case studies illustrate many different strategies for overcoming barriers and developing an effective collaborative process.

WHAT DID WE LEARN FROM THIS STUDY?

Over the past year we have been engrossed in transboundary resource management, the theories behind it, and the experiences of those who are working at it. This investigation taught us a great deal about transboundary issues, including the dynamics of collaborative processes, how these processes can effect ecosystem protection, and the dedication and commitment of the individuals who are working to make it happen. From all that we observed about transboundary collaboration, there are a few overarching findings that stand out as particularly interesting or surprising.

International Treaties

Many assume that if natural resource problems are shared across an international border, then any efforts to jointly deal with them are going to require a formal treaty or the structure of a treaty-based institution (such as the International Joint Commission). This assumption is derived from the common perception that any interaction between two sovereign nations must occur at the federal level. Our case studies demonstrated that treaties and international institutions are not a necessary precursor to transboundary collaboration. Few of our cases involved such entities, and in several cases, the presence of a treaty actually impeded the ability of stakeholders to develop an inclusive collaborative process.

However, we did find that the presence of non-binding international agreements was very useful in facilitating transboundary collaboration when they were designed to include the levels of government that were relevant to the resource issues at hand. The lack of an international treaty or treaty-based institution may create a perception that discourages stakeholders from trying to develop a transboundary collaborative process. This perception, however, is misleading. The presence or lack of a treaty did not appear as a characteristic that is common to all of our cases, or arise as a factor that facilitates effective transboundary collaboration. Instead, international agreements that are specific

to the stakeholders and resources involved were effective in convening and legitimizing transboundary collaborative processes.

Implementation Authority

In the absence of a common legal structure to govern international natural resource management, we assumed that effective transboundary resource management would require a formal entity or institution that would have decision-making authority over transboundary resources. While our cases provide numerous examples of transboundary collaboration, none of the programs analyzed have the ability to *directly* implement resource management decisions. Instead, they often provide recommendations for action. This was true even with the cases that had a highly formalized organizational structure backed by international agreements. Those structures were still focused on collaborative decision making, and improving the coordination between existing governmental agencies and authorities instead of creating new ones.

That is not to say that a formal organizational structure is not useful. The formal structures that we saw in the case studies were very useful in convening a forum for communication and stakeholder representation, developing legitimacy, and maintaining momentum. However, the need for legal authority and institutionalization of these structures did not appear to be a necessary factor for effective transboundary collaboration.

Networks of Activity

Regardless of its formality or authority, we assumed that transboundary ecosystem management would revolve around a single unifying organization or entity. This was not what we found. Through our case studies, we discovered that transboundary collaboration occurs through a web of different activities, efforts, and groups that share some common objectives but follow different paths. In many cases, there was little regular interaction or coordination between the different groups in this web. Enhanced communication would clearly increase the visibility and influence of their independent efforts.

However, in some cases the existence of a “flagship” organization helped improve the coordination between existing transboundary efforts. In general, these organizations were established under some kind of transboundary agreement that acknowledges the need for such a coordinating body.

Collaborative Process vs. Management Outcomes

When we began this study, we expected to find examples of situations where stakeholders were using coordinated transboundary resource *management* to achieve positive ecological outcomes. In doing so, we underestimated the complexities of the collaborative *processes* that lead to transboundary ecosystem management. Our cases suggest that in transboundary situations where there is no common set of laws, structures or agencies to work from, it is important that efforts begin with a collaborative process. Once the appropriate procedural outcomes are established, management strategies can be designed and ecological outcomes realized.

In transboundary situations, there are multiple barriers to coordinated management. In looking beyond the process, we neglected to recognize the importance of overcoming those barriers through a collaborative process. Indeed, while some of our case studies are developed enough to begin seeing positive ecological outcomes, most are measuring success in terms of their process: particularly elements of communication, relationships, and legitimacy, which are all important building blocks for designing a coordinated transboundary management strategy.

THINKING ACROSS BORDERS

As our case studies illustrate, an effective collaborative process is critical to securing a transnational commitment to environmental stewardship. However, the development of those relationships that can facilitate the coordination of resource management strategies across an international border is a time-intensive and not always straightforward task. Therefore, patience coupled with an awareness of and sensitivity to the various differences that exist between nations is essential.

The following sets of questions raise the issues that we believe should be considered by individuals or organizations hoping to establish sustainable collaborative processes aimed at transboundary ecosystem management. Clearly, this list is not exhaustive, but it captures the major lessons from our case analysis. It provides a guide to the most fundamental, and perhaps most glossed over, aspects of initiating and perpetuating effective transboundary collaboration in a natural resource stewardship context. The themes of each question set deliberately mirror the discussion of barriers that are especially problematic in international transboundary situations (see Chapter 5, *Transboundary Collaboration: Integrating Lessons from Experience*). Based on our case study findings, the questions that arise from the consideration of these obstacles must be answered, in order for effective transboundary ecosystem management to occur.

1. ***Overcoming Legal and Governmental Differences.*** Is there an existing *and relevant* institution that can provide a forum for transboundary dialogue? Is there a common transboundary objective regarding resource stewardship around which an agreement of some sort can be built? Are there other factors, such as an interested political leader or a recognized resource designation that can help bring legitimacy to a transboundary effort?
2. ***Overcoming Communication Barriers.*** Do you know who the potential stakeholders are on the other side of the border and how to contact them? Is the exchange of information and/or people complicated by the existence of an international border, and, if so, are there ways to get around this stumbling block in order to facilitate transboundary interaction?
3. ***Overcoming Social and Cultural Differences.*** Do transboundary social and/or cultural networks (like native communities) exist in your region? Is there any shared

history or positive transboundary interaction that may facilitate collaboration?

4. ***Overcoming Economic Disparities.*** Are there economic incentives or disincentives that could significantly affect the extent and nature of stakeholder involvement? Are there ways to reconcile transboundary economic disparities without offending participants or stretching existing resources too thin?

Thoughtful consideration of how these questions can be answered can help point practitioners in the direction of effective collaboration and the eventual development of ecosystem management strategies that can work across international borders.

THE FUTURE OF TRANSBOUNDARY COLLABORATION

As more communities face natural resource challenges that involve an international border, there will be an increasing need for transboundary collaboration and a better understanding of how it works. This study provides a cross-section of experiences from North America's borderlands, and can help practitioners and researchers add to the growing body of experience and knowledge. The future of transboundary ecosystem management will likely see many more examples of these collaborative processes in motion, either by necessity or by design. Most of the existing efforts that we considered in this study will continue to develop their collaborative process and will eventually turn the corner towards producing ecological outcomes. Indeed, some already are. It is also likely that some of these efforts will disband.

As our collective knowledge and experience increases, perhaps the barriers to working across international boundaries will be less daunting. As the case studies in this study demonstrate, transboundary collaboration is possible and has made a difference in several of our borderland communities and ecosystems. While the international border and the additional barriers that come with it can be imposing, it is simply another factor to consider in convening a collaborative process.

The border is not an insurmountable barrier, nor is it a factor that totally transforms the nature of the situation. Building bridges across this border does not necessarily require special treaties, formal structures, or bridging institutions. Instead, the most important elements to transboundary collaboration—communication, cooperation and collaboration between dedicated individuals—are what motivates and focuses collaborative efforts whether or not an international border is present. When collaboration is complicated by an international border, it is the ingenuity and the passion of those individuals who are committed to overcoming those barriers that makes a difference.

PART II

CASE STUDIES

INTRODUCTION TO CASE STUDIES

This section contains eight examples of situations where resource management agencies, organizations and communities have found ways to overcome the barriers to transboundary collaboration and resource management. These case studies provide a cross-section of transboundary experiences from a wide variety of settings. These settings include the estuaries of the Puget Sound-Georgia Basin region, the marine ecosystems of the Gulf of Maine, the forests and lakes of the boundary waters region, and the arid expanses of the Sonoran Desert. In each of these situations, stakeholders were faced with a natural resource problem that could not be solved by simply acting alone. Instead, these efforts demonstrate examples where committed individuals and organizations have risen to the challenges of collaboration by reaching out to their neighbors to better coordinate the management of shared, transboundary natural resources.

These eight case studies were selected for in-depth analysis from an original list of 21 areas along the U.S.-Canada and U.S.-Mexico borders where transboundary efforts were in place. The Methods Chapter (Part I, Chapter 4) describes the selection process.

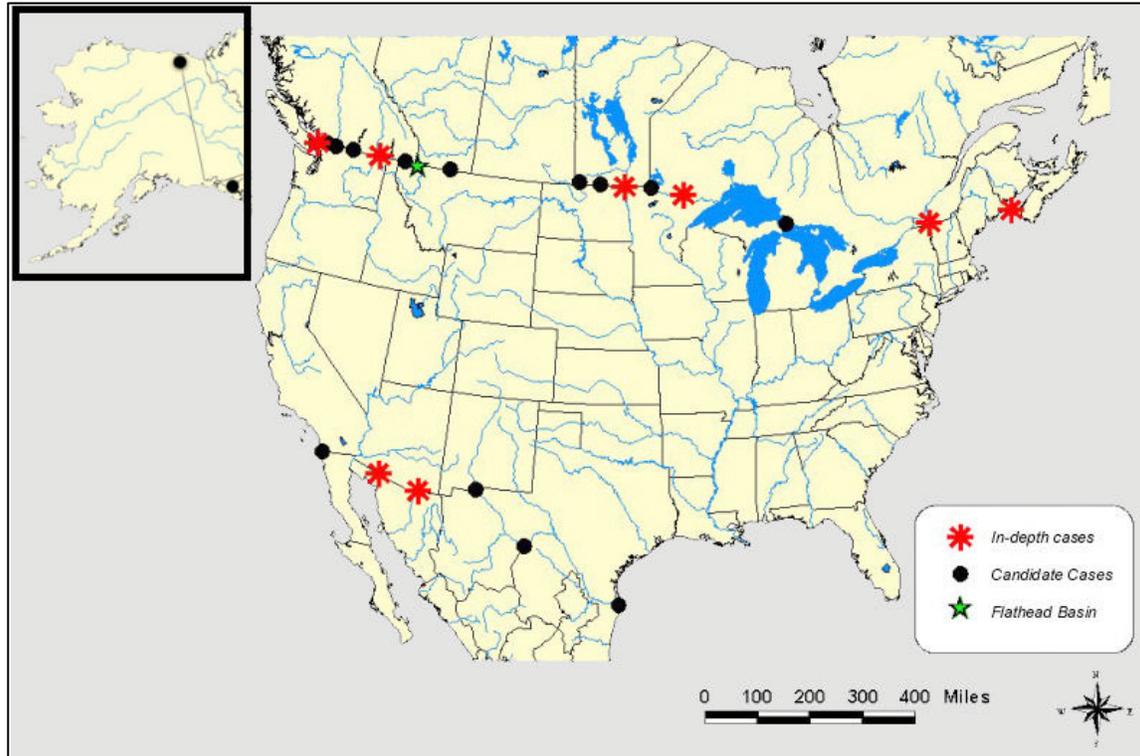
Research for each of these case studies consisted of background document research and telephone interviews with individuals who were directly involved in the transboundary efforts, or had a useful, first-hand perspective on those efforts.

The locations of these case studies, are illustrated on the following page. Brief summaries of the eight in-depth case studies are found below, while the full case studies are included as subsequent chapters in this section. Short descriptions of the transboundary efforts that were not selected for in-depth analysis are found in Appendix A. In each case study, the conclusion outlines several specific lessons that are useful to transboundary collaboration and ecosystem management.

Case Studies

- **International Sonoran Desert Alliance**
Arizona, U.S. & Sonora, Mexico
- **Gulf of Maine**
Maine, U.S. & New Brunswick, Canada
- **Upper San Pedro River Basin**
Arizona, U.S. & Sonora, Mexico
- **Lake Champlain Basin Program**
New York and Vermont, U.S. & Quebec, Canada
- **ManOMin Watershed**
Minnesota, U.S. & Manitoba and Ontario, Canada
- **Okanagan**
Washington, U.S. & British Columbia, Canada
- **Puget Sound – Georgia Basin International Task Force**
Washington, U.S. & British Columbia, Canada
- **Red River Basin Board**
Minnesota, North Dakota, and South Dakota U.S. & Manitoba, Canada

Case Study Locations



CASE STUDY SUMMARIES

Gulf of Maine

Often called the “sea within a sea,” the Gulf of Maine, split by the U.S.-Canada border, is world-renowned for its biological productivity. The tremendous resources of the Gulf, including fish, petroleum, and shellfish, play an essential role in the region’s economy. The health of the Gulf, however, is threatened by human development in ecologically sensitive areas, sewage discharge, toxic pollution, overfishing, and other factors. Recognizing the transboundary nature of the management challenge facing residents of the Gulf, the governors and premiers of three states and two provinces bordering the Gulf signed an agreement in 1989. The agreement created a regional management forum called the Gulf of Maine Council. The Council’s highly formal organizational structure and core staff have provided a central focus for coordinating regional environmental priorities and for improving cross-border communication. Recently, however, sharp criticism about the diversity of the Council’s membership has underscored the need for non-governmental perspectives in the process. The Council’s willingness to incorporate a broader sample of the region’s opinion illustrates that including diverse stakeholders into a formal organization with an institutional memory can stand the test of time.

International Sonoran Desert Alliance

The International Sonoran Desert Alliance (ISDA) is collaborative effort aimed at encouraging community-based environmental stewardship of the Western Sonoran Desert. Working across an area that covers much of southwestern Arizona and the northern portions of the Mexican states of Sonora and Baja California, ISDA has established a number of environmental education and “green” business initiatives throughout this region. Tri-national in nature, ISDA often initiates its projects through local community leaders to which its American, Mexican and Tribal (Tohono O’odham) board members have ties. Due to national differences in economic prosperity and the fact that ISDA works mainly in the Mexican communities that comprise the region’s population base, ISDA promotes conservation through sustainable development. Despite its small staff and decentralized approach to environmental protection, ISDA is a prime example of a transboundary collaborative effort that has attracted attention and funding because of its attempts to instill a stewardship ethic at the local rather than national or international level.

Lake Champlain Basin Program

Divided between the U.S. States of New York and Vermont, and the Canadian Province of Quebec, the Lake Champlain basin is renowned as a significant ecological, scenic and recreational resource. In order to mitigate impacts on this resource due to pollution, habitat destruction and non-native aquatic species, the Lake Champlain Basin Program was formed by a Memorandum of Understanding in 1988. With an executive Steering Committee, a Citizen Advisory Committee in each state or province, and several other branches, the Basin Program maintains a highly formal organizational structure that facilitates a broad representation of stakeholders. Bolstered by several state-state and state-province agreements (including the original MOU), this program has developed and implemented a management plan for the basin, and has made noticeable progress in reducing phosphorous levels. The Lake Champlain Basin Program is a good example of how such a formal collaborative process, strengthened by non-binding and non-federal international agreements, can achieve positive ecological outcomes for a transboundary resource.

ManOMin Watershed

The Rainy River First Nation coined the term “ManOMin” to describe the complexity of management along this part U.S.- Canadian border. “Man” stands for Manitoba, “O” for Ontario, and “Min” for Minnesota. Each of these jurisdictions, as well as at least one First Nation, is responsible for managing a portion of this complex natural system which includes a series of interconnected lakes and rivers that comprise the international border. These boundary waters include Rainy and Namakan lakes, the Lake of the Woods, and the Rainy River. This case study illustrates the interrelationships between a complex array of collaborative transboundary activities that occur in the ManOMin watershed. These efforts include cooperative water management between the U.S. and Canada through the International Joint Commission, organized binational efforts to influence the decision making of the IJC, and efforts by a First Nation to raise awareness about the health of the Rainy River and the interconnectedness of the entire area. This case illustrates the difficulties of opening lines of communication among jurisdictions as well

as the importance role that this communication can play in facilitating transboundary ecosystem management.

Okanagan River Basin

Spanning the U.S.-Canada border, the Okanagan River sustains dense human populations and irrigated agriculture, while also supporting natural communities that are internationally significant for their biodiversity. The Okanagan sockeye salmon is especially important in the basin because it is the sole remaining anadromous salmon stock that returns to the Canadian portion of the Upper Columbia River. In the face of numerous failed attempts to increase the size of the stock as required under U.S. federal law, resource managers in the U.S. are now working to channel mitigation money across the border into Canada. Since 1997, several federal resource agency members have worked through an informal network, and have recently institutionalized part of their vision in the Northwest Power Planning Council's Ecoprovince Review and Subbasin Planning Process. The Process sets mitigation priorities on the subbasin scale and makes a specific effort to include relevant Canadian agency officials and First Nation members in the case of transboundary subbasins like the Okanagan. The Process has yet to complete its first subbasin plan for the Okanagan, and it has already been criticized for limited diversity in terms of groups involved in the Process. The Process has engaged a new provincial program in an effort to incorporate a wider viewpoint. Nevertheless, the Okanagan case is a strong example of how appropriate institutional structures can be shaped to further transboundary priorities, even in areas where there are significant differences in resource value on either side of the border.

Puget Sound-Georgia Basin International Task Force

The Puget Sound-Georgia Basin International Task Force fosters cross-border management of a productive but increasingly threatened "inland sea" ecosystem shared by the Province of British Columbia and the State of Washington. Amidst the contentious debates of the last several decades over fish take levels designated by the Pacific Salmon Treaty, American and Canadian environmental agencies have struggled, independently, to contain and mitigate the inherently *transboundary* threats to this species and the entire ecosystem. These threats include sewage overflow and the invasion of non-indigenous aquatic nuisance species. Created under the historic Washington-B.C. Environmental Cooperation Agreement, the Task Force brings together government agency and tribal representatives to share best management practices. Formally organized into issue-specific workgroups that determine parallel sets of tasks to be carried out on both sides of the border, the Task Force illustrates that timely joint *management* of a transboundary resource system can work within existing governmental frameworks and realize real ecological benefits.

Red River Basin Board

The Red River Basin does not fall neatly into a single jurisdiction but spans the states of Minnesota, North Dakota, South Dakota, and the province of Manitoba. The entire land area of the basin is prone to flooding due to the flat terrain and lack of natural barriers to the movement of water. A devastating flood in 1997 highlighted the fact that flooding is an imminent threat to the economic vitality of the region, and that any effective water

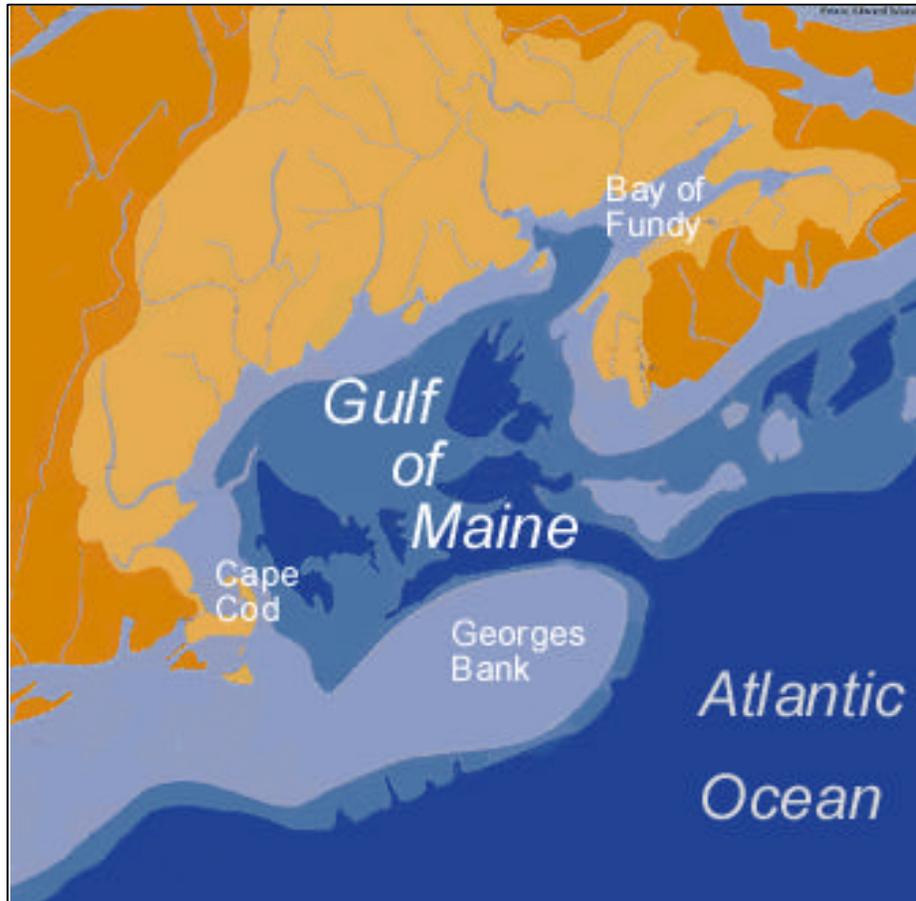
management would require a collaborative effort among multiple stakeholders on both sides of the international border. While the governments of both nations have been involved in cooperative efforts to manage the Red River Basin for years, there was growing frustration in the early 1990s with their inability to deal with local issues. Out of this frustration grew an international, grassroots effort called the Red River Basin Board. This binational organization was spearheaded by local politicians, citizens, and business representatives. This case illustrates the strength that local communities can bring to a transboundary collaborative effort. This case also highlights the need to include all relevant stakeholders in such an effort and to reach out to the public, so they will understand and support collaborative management of the basin's shared, transboundary natural resources.

Upper San Pedro River Basin

The transboundary San Pedro River is one of the last free-flowing rivers in the southwestern U.S. and northwestern Mexico. Crossing the international border between Sonora and Arizona, the Upper San Pedro River basin supports a riparian corridor that is critical to regional biodiversity. The San Pedro depends upon the same groundwater aquifer that also sustains the human communities of the basin. While part of the riparian corridor is protected in the U.S., its persistence is threatened by groundwater pumping for economic activities on both sides of the border. Despite the numerous barriers to transboundary collaboration, several separate but interrelated programs have begun working towards more coordinated management of this binational resource. These loosely structured efforts have made significant progress in bridging the information and communication gaps, resulting in a creative binational approach to creating a protected area in Mexico. The efforts in the Upper San Pedro River Basin are a good example of how the dedication of individuals and the influence of political leaders can help build the momentum for improved collaborative management of this important transboundary resource.

THE GULF OF MAINE

Maine, Massachusetts, and New Hampshire, U.S. –
New Brunswick and Nova Scotia, Canada



Base map courtesy of Gulf of Maine Council.

INTRODUCTION

The Gulf of Maine, a semi-enclosed ecosystem with a total area larger than the state of Wyoming, is one of the most biologically productive bodies of water in the world. The U.S. and Canada have a history of feuding over this region's resources, largely because both countries are equally dependent on the Gulf as an economic base. The states and provinces bordering the Gulf created the Gulf of Maine Council on the Marine Environment (Council) through a formal multiparty agreement in 1989 to address ecosystem-scale environmental problems, such the protection and conservation of the ecological balance within the Gulf of Maine ecosystem, the problem of marine debris and medical waste, and the relationship between land use and the marine environment.

The missions of the agencies represented at the Council's table are varied and the Council relies on members to find common ground. The Council has been sharply criticized,

however, for creating a collaborative of government agencies, excluding non-governmental parties, First Nations, and other groups from decision-making. Perhaps in response, the Council has reached out to other groups in the region. The Council's efforts have been supplemented by the diverse membership of the Global Program of Action Coalition (GPAC). The union diversifies the Council's perspective and provides a formal vehicle for greater public participation.

The case highlights several important themes of transboundary collaboration, including the importance of incorporating diverse stakeholders. It also shows how important a long-term perspective is to solving this type of problem. With a highly formal organizational structure and a diverse base of stakeholders, the Gulf of Maine Council has provided a central focus for coordinating the management of the region's economic and ecological resource base. As a long-standing transboundary organization, the Council has been effective in improving cross-border communication.

CONTEXT

The Gulf is often called a “sea within a sea” because its waters are almost entirely cut off from the northwestern Atlantic Ocean by underwater banks. Since majority of its perimeter is enclosed by land,¹ ocean currents retain the majority of the Gulf's nutrients with a dominant counter-clockwise movement, influenced by freshwater from rivers.² Temperature variation from north to south creates a vertically mixing sea that brings nutrient rich waters to the surface.³ Hundreds of species of finfish and shellfish, and more than 18 species of marine mammals, feed in the nutrient rich waters.⁴ The Gulf provides critical habitat for the northern right whale and other endangered species. The varied habitats, including more than 3,000 islands, are used by an abundant number of diverse bird species. Many species of fish, marine mammals, and birds lead transboundary lives in the Gulf of Maine.⁵

The Gulf supports a rich maritime industry in the region and has for several centuries.⁶ By most accounts, the region is economically dependent on the Gulf's resources. While resource extraction and processing remain the backbone of maritime economic activity in the Gulf, new uses are fast growing. Sailing, whale watching, and other non-extractive activities draw millions of visitors to the region every year, supporting a burgeoning tourist economy. Many coastal towns are shifting away from fishing-based economies to capitalize on this new economic potential. Aquaculture[†] also has a demonstrated potential in the Gulf. The clean, nutrient rich waters make an ideal environment for such an enterprise. The uses of the Gulf are increasing, but one fact remains—the ecological viability of the ecosystem underpins the success of the region's economy.

[†] Aquaculture, often referred to as fish or aquafarming, is the art, science and business of cultivating aquatic animals and plants in fresh or marine waters.

Ecosystem Stresses

Given the size of the Gulf ecosystem, it is of little surprise that its stresses run the gamut from toxic and bacterial contamination to nutrient loading and disturbances caused by increased coastal recreation.⁷ Impacts from these factors are not just environmental—coastal economies are in turn threatened by these stresses. For example, the Gulf's fishing economy, and indeed its very character, is extremely sensitive to damage to the fisheries.⁸ Overfishing threatens the economic health of the region. Widely regarded as one of the world's most productive fisheries, the Gulf has nurtured a thriving maritime heritage for several centuries. Foreign fleets would come from around the world to the Gulf's waters for the abundant supply of fish until restricted in the 1970s.⁹ Shoreline and offshore fisheries have collapsed over the past several years; in particular, cod, haddock, and halibut have all been overfished.¹⁰

The shipping of petroleum products also poses a threat to the Gulf ecosystem.¹¹ Oil discharges, spills that harm wildlife, and whale-ship collisions are commonly reported. Environmental concerns slowed plans to drill for oil and gas in the Gulf region. A moratorium on further exploration of Georges Bank remains in effect until at least the year 2012.

Population-related pressures are rapidly increasing, as well. Over five million people currently reside in the coastal counties of the Gulf of Maine region.¹² People are moving to parts of the Gulf in unprecedented numbers. Physical development to accommodate in-migrants occurs on some of the most ecologically significant land in the Gulf—marine wetlands. These areas are largely in private ownership on both sides of the border,¹³ making them difficult to regulate.

The population explosion and its accompanying physical development threaten the health of the Gulf with their byproducts, too. Tons of raw and partially treated sewage are discharged into the Gulf each day. Industrial effluent, urban runoff, and agricultural practices all introduce toxic contaminants into the marine and estuarine waters on a chronic basis. The loss of marine wetlands makes the impacts from discharge more acute and threatens the biological productivity of the system.¹⁴

Although limited data exist to fully assess the environmental quality trends on a Gulf-wide basis, warning signs of degradation are clear in the research results of the last two decades.¹⁵ Despite a full understanding of the effects of the stresses catalogued above, it is clear that the Gulf's natural functionality is being threatened. Certain fish and shellfish exhibit liver lesions, fin rot, and other signs of environmental stress. The right whale, piping plover, and other species of wildlife are endangered or declining. Health advisories have been issued in several near-shore regions of the Gulf to protect the public from swimming in contaminated waters. Since changes in habitat have occurred over centuries, it is not possible to estimate changes in species diversity, abundance, and distribution that can be attributed specifically to anthropogenic activities compared to natural disturbances.¹⁶ These impacts are translated to Gulf residents into economic hardship.

Mutual Dependence on the Ecosystem

Canada and the U.S. are both dependent on the same resources in the region, creating friction and an overarching need to cooperate. The region has a history of international disputes stemming from its reliance on natural resource based economies.¹⁷ In fact, nearly 20,000 fishermen operate approximately 300 Canadian and 1,350 American fishing vessels, as well as 4,000 lobster boats in the Gulf.¹⁸ The 1970s and 1980s saw the U.S. and Canada engaged in bitter disputes over fishing rights to the Georges Bank, softwood lumber, and lobsters.¹⁹ The Georges Bank dispute was so contentious as to require adjudication by the International Court of Justice. The proverbial “myth of the fixed-pie,” a zero-sum game where gains for one party seem to be losses incurred by other parties, dominated government relations in the region: both countries were fighting for their fair share of a limited amount of resource.

History of Transboundary Collaboration

The two country’s mutual dependence on the region also has set the stage for a long history of collaborative work *within* each of the national jurisdictions. The New England Governors Conference and Eastern Canadian Premiers (NGEC/ECP) are longstanding forums with a history of working together, *ad hoc*, on issues of mutual concern.²⁰ For example, the *Joint Canada-United States Marine Pollution Contingency Plan for Spills of Oil and Other Noxious Substances* precipitated U.S. and Canadian Coast Guards to establish a joint spill response plan in 1974.²¹ This provided a foundation for regional action.²² The significant challenge to the region was moving collaboration across the international border, especially at the government level at which the disputes took place.

The Gulf of Maine Council on the Marine Environment

Following soon after the World Court decision on fishing in the Georges Bank, an idea was formalized by the community of state and provincial coastal zone managers. They were like-minded individuals who had established close personal relationships through the years. These agency employees observed that, although they met to talk about individual concerns, there were a number of challenges on the regional perspective that would benefit from a more consistent, ongoing program.²³

This group sketched a rough template of what a transboundary collaborative process might look like. They presented their idea to the Governor of Maine, who in turn presented it to the Governors and premiers of Gulf states and provinces. In only 18 months, all five Governors and premiers signed the *Agreement on Conservation of the Maine Environment of the Gulf of Maine between the Governments of the Bordering States and Provinces* in December 1989.²⁴

The Gulf of Maine Agreement was conceived, pitched, and signed within a remarkably short time period. Several considerations facilitated the creation of this elaborate program. First, the Council did not infringe on jurisdictions—it simply offered preexisting agencies an opportunity to coordinate management around regional priorities. It billed itself as a forum or a process, not an organization. The agreement did not threaten the jurisdiction or sovereignty of country, state, or province. Instead, it formalized a process for participants to exchange information, agree upon mutually

beneficial goals, and work toward those priorities within the context of preexisting agencies with preexisting budgets and personnel already organized and trained.

Second, some critics have noted that the Council's early priorities, such as decreased toxic contamination and reduced marine debris, addressed generally agreeable issues while sidestepping highly contentious issues. The Council aimed early on at improving the health of the entire Gulf by capitalizing on issues that were largely ignored at the state or provincial level and could provide immediate results. Although the ecological benefit of several programs, such as production of the regional *Gulf of Maine Times*, is unclear, the Council avoided conflict by focusing first on issues that offered the possibility of success.

Finally, the leading factor that brought the parties together was strong leadership, primarily from the Maine State Planning Office.²⁵ These individuals spent a great deal more time than other participants were willing or able to at the outset of the Council. Since the Council piled additional burdens onto already overworked agency officials, the Council's early leadership was essential to its survival.

Nevertheless, the Council did encounter significant early barriers. Despite the short path to signature, one of the architects of the Agreement suggests that it could have happened in an even shorter time: "Frankly, that was one of the challenges we faced before the program was created...getting people interested."²⁶ The Agreement was a proactive measure. Another barrier to collaboration was the history of feuding between the U.S. and Canada over the very natural resources that the Gulf of Maine Agreement dealt with at a state and provincial level. Noted a participant, "We'd had a history of the region fighting with each other over natural resource based economies."²⁷

Furthermore, a lack of resources within the member agencies hamstrung cooperation. A state agency employee and early Council participant recalled, "Because we did not have any money...we said 'how can we do this within existing resources?'"²⁸ Limited funding resources possibly helped the Council as much as it hindered it, however. Agency representatives struggling to structure the Council developed a sense of ownership by devoting personal time to the effort.²⁹

Finally, the international border was a significant obstacle to collaboration in the Gulf. One founder recalled that involvement by the U.S. Department of State and the Canadian Ministry of External Affairs prolonged the agreement negotiations. Both agencies were very territorial about the cross-border agreement, claiming only they had the authority to negotiate this kind of arrangement. He added, "They thought it was rather presumptuous of the states and provinces to even entertain the idea of a program that would not cause a treaty to be signed or the President and Premier to be involved."³⁰

Global Program of Action Coalition

In addition to the Council, the tri-national Commission on Environmental Cooperation[†] (CEC) established a strategic planning process designed to address the impact of land-

[†] CEC was created by the North American Free Trade Agreement.

based activities in the Gulf of Maine. The CEC assisted a group of individuals from an array of coastal sectors[†] in the formation of a binational cross-sectoral partnership, the Global Program of Action Coalition for the Gulf of Maine (GPAC). Primarily volunteer based, the GPA Coalition for the Gulf of Maine (GPAC) has worked to develop a consensus on priority land-based activities that are contributing to the deterioration of marine habitats in this critical ecosystem, and to take action, or encourage others to take action to curb their impacts.³¹ Creation of GPAC was motivated by a 1995 accord called the *Global Program for the Protection of the Marine Environment from Land-Based Activities* (GPA). The United Nations-sponsored GPA was adopted by 108 countries, including the U.S. and Canada.

GPAC's membership involves a much broader base than the Council, although there is a significant number of individuals involved in both efforts.³² Unlike the Council, GPAC was designed to maximize participation by all stakeholders. Key to the GPAC decision-making model is incorporating representation from all sectors, since GPAC believes regional consensus should be the appropriate criteria for setting policy at the regional level.³³

GPAC chose to implement the GPA methodology within the Gulf of Maine through two major binational workshops.³⁴ The first, held in St. John's, New Brunswick, in April 1998, identified eight pollutant priorities and seven habitat priorities. Participants recall the trademark of the workshop was a very participatory system that essentially allowed all attendees to vote on the priorities.³⁵ About a year later, GPAC convened another workshop in Portland, Maine, to identify strategies for each of the priorities. Again, the workshop emphasized participation by the diverse interests in attendance.³⁶

At the second workshop in 1998, a common concern emerged from a majority of the breakout groups. Workshop participants questioned how the strategies identified would be carried forward. In the course of discussion, the Gulf of Maine Council was recognized as a central figure, but assessed as a bilateral institution without management enforcement authority.³⁷ As such, the Council was not dealing with several priority issues identified by GPAC. Out of that discussion came a proposal, currently being explored, to start the long process of requesting a review by the International Joint Commission (IJC) of the adequacy of institutions in the Gulf to meet ecological goals.³⁸

APPROACH TO TRANSBOUNDARY MANAGEMENT

Transboundary interaction in the Gulf of Maine occurs on several levels. The predominant avenue for transboundary collaboration occurs through the Gulf of Maine Council on the Marine of Environment, which remains the central forum. Twelve years of operation have exposed several organizational limitations, however. Advisory

[†] Including environmental advocacy and community action groups, research and educational institutes and organizations, business and industry, three levels of government, and aboriginal peoples.

relationships with two other groups that naturally complement the Council broaden the Council's perspective.

The Gulf of Maine Council

Twelve years since its inception, the Council is still in operation. Several things have held the Council together. The Council's Coordinator suggests that concerns over a shared resource have bound these jurisdictions to finding solutions to the ecological problems of the Gulf.³⁹ Certainly, a formal multi-party agreement also helped keep disinterested parties at the table. Signed by the highest political officials in the region, the Agreement engaged the superior officers of the relevant state and provincial agencies. There was no room for opposition from above to curtail the effort.

The Council's mission is to "maintain and enhance environmental quality in the Gulf of Maine and to allow for sustainable resource use by existing and future generations."⁴⁰ The Council serves as a link between the state, provincial, and federal agencies involved in GOM management, disseminates scientific data, assists with funding, and generally facilitates efforts by the five jurisdictions to maintain and enhance the health of the Gulf. The Council provides implementation grants to local organizations in support of the regional priorities it identifies in its Action Plan, which houses the Council's goals and objectives.⁴¹

Membership of the Gulf of Maine Council

In addition to one non-governmental representative chosen by each jurisdiction, the Council membership consists of:

Maine

- Director, Maine State Planning Office
- Commissioner, Department of Marine Resources

Massachusetts

- Director, Coastal Zone Management
- Secretary, Executive Office of Environmental Affairs

New Brunswick

- Minister, Department of Environment and Local Affairs
- Minister, Department of Fisheries and Aquaculture

New Hampshire

- Director, Office of State Planning
- Commissioner, Department of Environmental Services

Nova Scotia

- Minister, Department of Environment and Labour
- Minister, Department of Agriculture and Fisheries

The Action Plan is viewed as a living document that is expected to change in light of dynamic scientific priorities and public perceptions.⁴² The Council's most recent Action Plan introduced measurable goals and objectives to chart the progress of the Council. The Council's 1996-2001 goals are:

- Protect and restore regionally significant coastal habitats,
- Restore shellfish habitats,
- Protect human health and ecosystem integrity from toxic contaminants in marine habitats,
- Reduce marine debris, and
- Protect and restore fishery habitats and resources.

The Council is in the process of creating its 2001-2006 Action Plan, which builds upon the existing plan. It continues to focus on habitat and ecosystem integrity. In addition, it is evaluating the role it can play in a couple emerging issues, including aquatic nuisance species and supporting environmentally sustainable marine-based economic activity.

Organizational Structure

The Council is often referred to as a process, not an organization.⁴³ Nevertheless, the Council has an intricate, sophisticated structure. It is comprised of two governmental delegates from each of the three states and two provinces (see inset box), as well as one private sector/NGO representative selected by the jurisdiction. The leadership duty of the Secretariat rotates annually, so that each jurisdiction has leadership responsibilities every five years.

The Council has four committees. Committee members, and their US and Canadian co-chairs are from Council member agencies and federal partner agencies as well as from academia and NGOs. The Council's committees are:

- Public Education and Participation,
- Data and Information Management Committee,
- Monitoring Committee, and
- Marine Debris.

The Council meets two times per year. Committee meetings are often held in concert with the biannual Council meetings.

The Council also has federal partners from both the U.S. and Canada (see inset box at right). While these representatives do not have voting power and are not signatories to the original Agreement, they are full participants in Council action,⁴⁴ are full members on the Working Group, committees, and some even pay annual contributions.⁴⁵

To supplement the infrequent meetings of the formal Council, a Working Group handles the week-to-week affairs. The Working Group Chairman explained, "As the name implies, it's the group that does the day-to-day work."⁴⁶ It consists of a designee from each agency represented on the Council, and the Committee co-chairs. The Committee co-chairs can be from academia and the non-profit community.⁴⁷ A recent addition to the Council's structure is a separate Management Committee that consists of a representative of each member jurisdiction. The Management Committee makes decisions in between formal meetings of the Working Group or the Council.⁴⁸

In December 2000, the Council hired a permanent coordinator. This was, in some ways, contrary to the Council's "do it ourselves" attitudes, but the addition has greatly increased the efficiency of the Council.⁴⁹ Rather than transfer the managerial duties with the strategic leadership responsibility of the rotating Secretariat, the Coordinator now manages the details.

Finally, there is a non-profit entity on either side of the border—the Association of U.S. Delegates to the Gulf of Maine Council and the Canadian Association of Delegates to the Gulf of Maine Council. The Associations were created to help the Council realize its short and long-range agendas.⁵⁰ The associations' members are the jurisdictional delegates to the Council, including private representatives. These enable the Council to receive and disburse funds.⁵¹ The associations also provide an opportunity for U.S. and Canadian Council members to meet once or twice a year as a national delegation.

The Council at Work

The Council operates on a consensus basis. Although there is technical voting authority reserved for Council members, it is rarely, if ever, used. The Council has no formal decision making authority — there is no formal statute gives it control over the coordinated management of the ecosystem’s resources. It is not a management body and does not plan the future of the land or water-based resources. One Working Group member put it this way: “The Council is a forum. It doesn’t have any statutory authority, nor regulatory authority—it’s just a group of people who get together to share information.”⁵²

The Council achieves its goals by integrating regional commitments into agency member responsibilities. The driver of the Council is its membership—*they* are all in charge of large budgets, large staff, and make decisions in their relevant state or provincial role.⁵³ Without action on the part of the Council members, the Council’s goals cannot be met. The Council’s Coordinator suggests, “Perhaps because it is not a highly funded [organization], more of its work is done through the activity of its agency members than through Council activity in a collective way.”⁵⁴ Critics of the Council suggest that this strength is actually a vulnerability: “The Council was never set up as a management body. It’s an administrative network...where bureaucrats get together twice a year and exchange notes...It’s nothing more than a mutual admiration society as far as I can see.”⁵⁵ Even Council members note that this approach has both its strengths and weaknesses.⁵⁶

There are a large number of government agencies responsible for the Gulf on both sides of the border. There is a disparity of activity that favors the U.S., however. The Canadian provinces have a much less aggressive menu of legal and statutory tools to employ to conserve habitat, discourage sewage discharge, or minimize the release of toxics.⁵⁷ There is also a disparity in financial resources available in Canada, both for community efforts and the Council itself.⁵⁸

Nevertheless, a strong understanding of the interdependence of the communities in all Council jurisdictions and their reliance on the Gulf underpins regional activity.⁵⁹

Federal Partners to the Council, 2001

United States

- National Oceanic and Atmospheric Administration
- U.S. Fish and Wildlife Service
- Army Corps of Engineers
- Environmental Protection Agency

Canada

- Department of Fisheries and Oceans
- Environment Canada

Stakeholder Involvement

The Council was conceived as a forum for relevant state and provincial agencies charges with maintaining the health of the coastline. Some critics highlight the lack of formal representation as a fundamental flaw in the Council’s structure.⁶⁰ Others acknowledge that the Council does not fully represent the diversity of perspectives on the issue, but note that that was by design—the Council was created to be a collaborative of government agencies.⁶¹ Regardless, only Council members have formal voting authority.

Other interests are routinely incorporated, however, and their comments integrated into the Council's work. For example, federal partners have been listed from the Council's inception. Although not formal voting members, that does not impede participation by federal agency representatives.⁶² In fact, the Council does not exercise its voting power that frequently — instead, it works on a consensus basis with all parties at the table.⁶³ Private sector representation was formalized in the 1992 charter amendment, although one state (Maine) has chosen to fill that spot with a member from a non-governmental organization.[†]

On the whole, non-governmental organization (NGO) representation and general public participation, nevertheless, is minimal.⁶⁴ This includes community grant-making foundations, which have formed their own regional collaboration to coordinate conservation-oriented grant making in the Gulf.⁶⁵

Collaboration within the Gulf

Not surprisingly, collaboration between different efforts operating in the Gulf has a mixed history. The CEC's initial decision to bring together GPAC created some tension between itself and the Council, and for valid reasons.⁶⁶ Deeply involved Council members saw the fledgling effort as redundant and unnecessary. Others saw it as a competitor for already-scarce resources that should be coming straight to the Council. Furthermore, perceived GPAC support of an IJC review of regional institutions concerned several Council Working Group members. Others saw it as an opportunity to get input from a third party and are very interested in seeing what comes out of it.⁶⁷

GPAC's inclusive policies certainly circumvented an adversarial relationship. Council Working Group members have been GPAC members and have been involved in GPAC projects. These deeply involved individuals were valued for their perspective on regional issues and engaged in this new process from its beginning. The U.S. Co-chair of GPAC suggests, "I think that tensions occasionally pop up here and there, but for the most part those early tensions have smoothed out because the Council has, I think, seen the value of what GPAC has produced."⁶⁸

In that respect, the Council is integrating several regional efforts into its own structure. A 1998 joint statement between the Council and the Regional Association for Research on the Gulf of Maine (RARGOM) incorporated the efforts of regional research scientists into the Council's work (see Figure 1). The joint agreement aimed at coordinating scientific research and increasing communication and collaboration between the two efforts.⁶⁹ It also filled a void in the Council's membership list and gave the Council access to sound science upon which to base its priorities.

The Council could approve a similar statement with GPAC in Spring 2001. Almost identical to the RARGOM agreement, the statement would create a mutually beneficial advisory relationship with the Council for GPAC. GPAC would supplement the Council's narrow perspective with advice from GPAC's diverse constituency, which

[†] Massachusetts appointed Pricilla Brooks of the Conservation Law Foundation to replace Liz Kay, a private consultant, in July 2000.

includes representatives from First Nations, municipalities, the environmental community, and other non-governmental entities.⁷⁰ The Council would create a long-term future for GPAC. GPAC never intended to be an implementation body and an advisory role with the Council would provide a degree of institutionalization.⁷¹

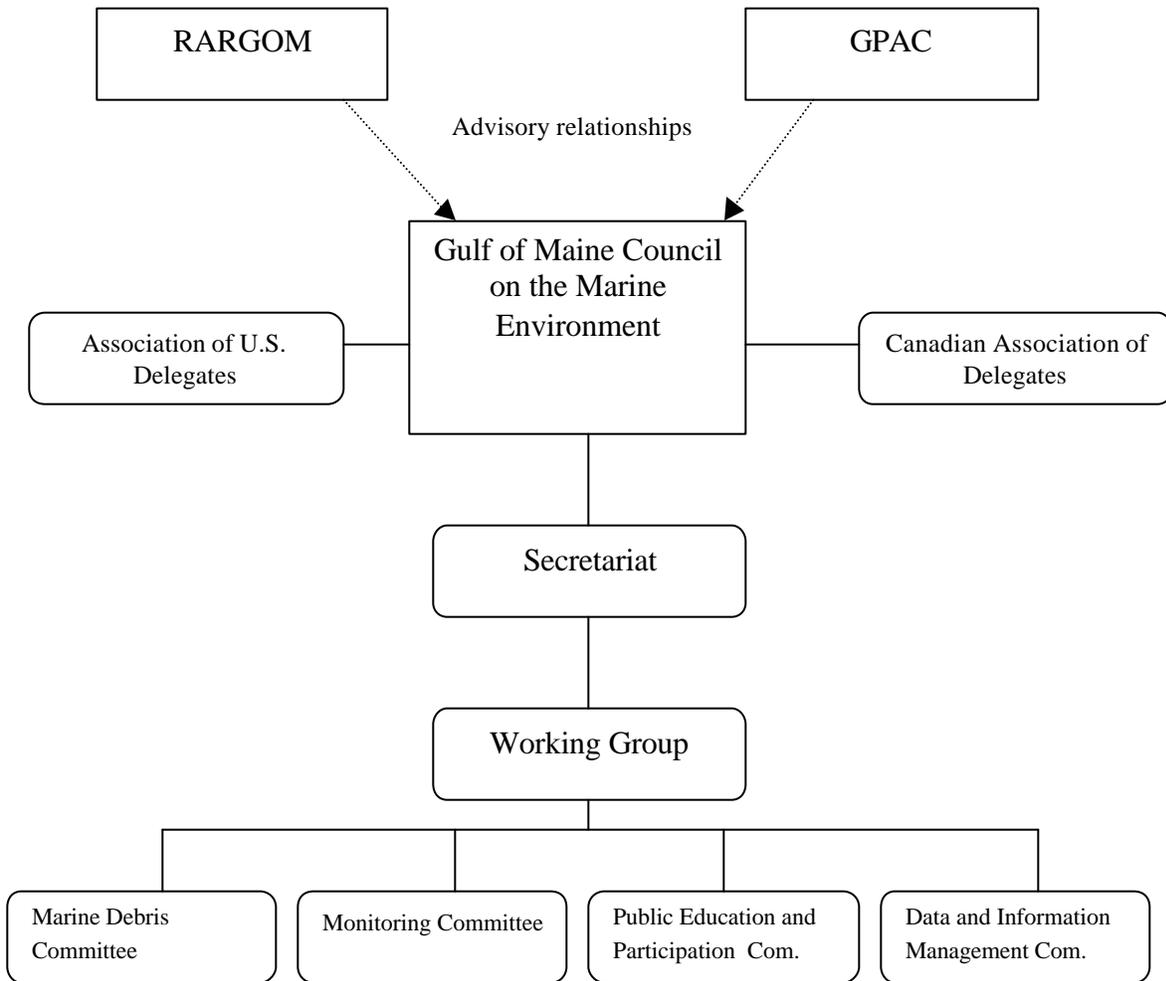


Figure 1. Organizational chart for the Council, including advisory relationships.

ACCOMPLISHMENTS

Participants in regional transboundary processes noted a variety of both ecological and procedural accomplishments. Ecological accomplishments include specific project success, such as joint monitoring. Procedural accomplishments were frequently cited as highly significant as well. Procedural accomplishments include information exchange, procedural longevity, and coordination with other regional efforts.

The Gulfwatch program, administered by the Environmental Quality Monitoring Committee of the Council, was also cited as a major accomplishment.⁷² It is a regional

coordinated monitoring project that has enabled the development of standardized baseline data. Participants suggested that such a project could not have been produced without a regional approach. In fact, the data has been used recently to measure the impacts of an oil spill near Portland, Maine.

Although some believe the primary successes of the Council are more procedural than ecological, the Council has supported a long list of programs designed to improve the health of the Gulf. These include:

- Creation of the Supporting Actions Matrix, a comprehensive listing of the activities of the 16 government agencies and other organizations undertaking Council stewardship projects.⁷³
- Sponsorship of numerous conferences and forums regarding diverse topics such as natural gas pipelines, whale-ship collisions, and improving communication within the Gulf.
- Identification and preservation of significant shellfish habitat.
- Allocation of over \$450,000 to over 90 organizations through implementation grants that support priorities identified in the Council's Action Plan.

Procedural accomplishments cited by participants focused on information exchange.⁷⁴ Vehicles such as the *Gulf of Maine Times*, the regional newsletter produced by the Council, or conferences sponsored by the Council or GPAC offer opportunities for resource managers to meet their counterparts or address a binational audience through a single publication. Information sharing has inspired a sense of community amongst regional actors.⁷⁵ A shared sense of community has empowered this collaboration with a heightened sense of purpose and greater legitimacy in the public eye.

Significant Milestones

- 1989-** Gulf of Maine Agreement signed.
- 1991-** Council approves Initial Plan for the 10-year Gulfwatch monitoring program.
- 1995-** Action Plan completed. Includes measurable goals and objectives.
- 1997-** GPAC created by CEC.
- 1997-** Council completes analysis of Marine Protected Areas.
- 1998-** Council signs joint agreement with RARGOM.
- 2001 -** Second Action Plan completed. Incorporates priorities from GPAC forums.

Many involved with the Council feel that its continued existence is a success in itself.⁷⁶ The significant barriers to continued cooperation challenged the Council during its first ten years in existence, including rapid turnover of Canadian members[†], limited financial resources, and limited time. As the Council's Working Group Chair said, "We're not entering the eleventh year—we believe the model works."⁷⁷

[†] Canadian members are the Ministers of provincial agencies. Unlike in much of the U.S., the heads of Canadian agencies are elected officials assigned to the post by the party government in charge. This creates a potential discrepancy of expertise since some Council members have a career-long involvement in the issue and others literally just became acquainted with it. Several participants insisted that this was not a barrier to collaboration, however, but instead a challenge to longevity.

Finally, the Council and GPAC have seen their relationship mature from potential conflict to an impending partnership. The partnership between these two efforts is a significant step toward ensuring the ecosystem's health. For example, GPAC identified priorities through its workshops that the Council had either not addressed or not done so in much detail. Several of these priorities are incorporated in the Council's 2001 to 2006 Action Plan. The Co-chair of GPAC commented, "[The Council] are the ones that have the ongoing responsibility in the Gulf as a whole...[GPAC] has provided not only a vehicle for [other] voices to be heard, but [also] developed a regional consensus on these priority issues and strategies."⁷⁸ The combination of these two elements will create a powerful regional planning forum.

CONCLUSIONS

The Gulf of Maine's health is protected by a dynamic, fluid process embodied in the Gulf of Maine Council on the Marine Environment. A number of perspectives are brought to bear through the work of the Council. Recent developments could dramatically expand those viewpoints by incorporating GPAC as a vehicle for public involvement.

After 12 years, the Council remains the focal point for regional action. Its longevity can be attributed to committed individuals, the unique multi-party agreement formalized before the Council began to work, and the adaptive management principles used to evaluate the performance of the Council itself. This combination of factors allowed the Council to change the way it did business by changing from annual rotating to "permanent" staff, formally incorporating non-governmental interests, and creating external associations to ease funding problems. Nevertheless, the Council's "do-it-ourselves" attitude that conceived of the Council as a process is gradually becoming formalized.

Lessons

- Incorporate diverse perspectives, even if they are initially hostile to an idea.** Collaborative processes are only as successful as members and the public perceive them to be. If a process is seen as exclusive or insulated, it will quickly lose value in the mind of an interested individual that feels ignored. Even opponents should be invited to the table to prevent adversarial alliances. One GPAC participant notes, "It [should] not just [be] governments talking to each other—it [should be] governments talking to non-governmental organizations, the corporate sector, First Nations, municipalities, ... When you open up like that you get a much more dynamic process for moving things forward."⁷⁹
- Transboundary collaboration takes a great deal of time.** Individuals should prepare themselves for seemingly glacial progress. Transboundary efforts operate at a myriad of national, state, provincial, and local political systems, often meeting infrequently. Regional efforts call together organizations and agencies with far-flung decision centers and limited funding, all with their own concept of the problem.

Rounding up interested and active representatives, coming to consensus, and moving toward solutions just takes time. The Co-Chair of GPAC underscored this point:

...Implementing the GPA or any other transboundary environmental effort requires a long-term commitment and an on-going process. Results are not seen immediately, particularly when the initial emphasis is developing a multi-stakeholder binational consensus on issues and strategies. And I think that for other regions which are trying to undertake the same kinds of activity where you're trying to fundamentally change human behavior in order to be able to reduce the impact of human activities on the environment, it's a long term prospect and it just takes a lot of time and ongoing effort to bring together all of the different players that have a role to play in successfully addressing the problems.⁸⁰

- **Operate within your resources.** The Council operated for almost ten years with a “do it ourselves” motto and relied on members to perform all the duties necessary to sustain the process. Despite the significance of the Council, however, members were not freed from their day-to-day tasks—each one was the agency head or top manager of a state or provincial agency.⁸¹ Additionally, the rotating Secretariat feature of the Council made the annual transition difficult since incoming Secretariats had to assume the management details from previous Secretariat with little or no institutional memory.⁸² The Council adapted by hiring several full-time staff members to handle centralized administrative functions. One founder recalls, “We’ve adapted our concept of this rotating secretariat to keep the good things—get a jurisdiction to focus once every 5 years and have real ownership of the program—and have some continuity in our staff.”⁸³ The Co-chair of GPAC concurs, “It requires a core amount of resources in order to support [transboundary collaboration].”⁸⁴
- **Establish transboundary collaboration with a strong, well-considered process.** The structure of the process or organization one convenes to deal with a scalar problem must be rigid enough to survive the attrition of leadership, but flexible enough to adapt. Organic structures require a bottom-up approach.
- **Successful collaborations include individuals capable of “perspective taking.”** It is all too easy to rely on assumptions that place colleagues in a context similar to your own. In addition to checking individual interests at the door, participants must work to develop an understanding of the pressures faced by other participants based on the perspective of their employer. Participants should take the time to consciously set aside these generalizations and learn the missions of other agencies. This is particularly true of Canadian counterparts.
- **Political support can be beneficial to transboundary efforts, especially in conferring (or creating) authority.** The Council began life with a “blessing” from the highest political offices in the states and provinces. The Agreement that created the Council preempted questions of Council legitimacy and authority to act.

- **Engage relevant levels of government.** GPAC illustrates that transboundary efforts can influence decision-makers with little government involvement. The Council shows that only certain levels of government need to be involved. The Council actively engages agency employees who manage federal programs in the Gulf without having to juggle the politics of the agencies—since federal partners are not members, the Council has fewer obligations to the central officials who run the agencies out of Washington, D.C., or Ottawa. Although these experiences illustrate that there is no “right” level of government engagement, they indicate that some agencies are more appropriate than others.
- **Transboundary efforts must be willing and able to take the perspective of other actors.** Despite how similar the U.S. and Canada might seem to residents of a transboundary region, subtle differences in culture, history, politics, and other factors can frustrate efforts. The Co-chair of GPAC noted, “It’s just something that I think any other organization or organizations that are working within a transboundary area should be conscious of. In the case of Canada and the U.S., we have a lot of common tradition, interests, ease of going back and forth across the border, but even so, there are still very different politics, agendas, priorities, and so forth...this is a way of saying that you need...perspective when you begin to undertake these things.”⁸⁵
- **Document progress and success.** Creating a paper trail can improve the status of a transboundary organization. Documenting success offers organizations several benefits, including increased visibility and recognition, greater legitimacy in the eyes of the public, and better access to resources. Both the Council and GPAC are good examples of the efficacy of simply circulating ideas in formal documents—a GPAC participant notes that, “The Council excels at self promotion—they do it very well.”⁸⁶ Both organizations have benefited from memorializing the common vision they spent so much time working toward.
- **Committed individuals can make a significant the difference.** So many transboundary projects begin similar to the Council or to GPAC as largely volunteer efforts. In both instances, however, participants are quick to note that the key to longevity was the efforts of a small group of people, especially early in the organization’s history.⁸⁷

Interview Contacts

- **Jeanie Brochi**, Working Group Member, U.S. Environmental Protection Agency
- **Janice Harvey**, Vice-President, Conservation Council of New Brunswick
- **Roger Janson**, Federal Partner to the Council, U.S. Environmental Protection Agency
- **David Keeley**, Working Committee Chairman, Gulf of Maine Council
- **Laura Marron**, Secretariat Coordinator, Gulf of Maine Council
- **Kathryn Ries**, U.S. Co-chair, Global Program of Action Coalition

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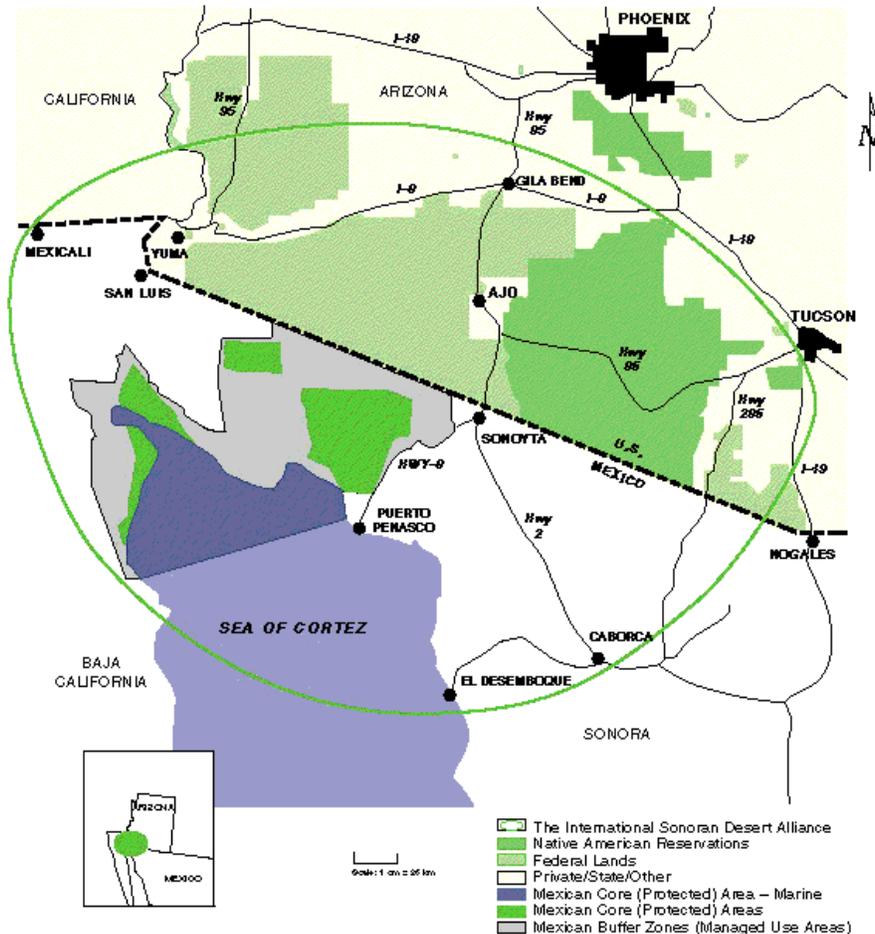
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THE INTERNATIONAL SONORAN DESERT ALLIANCE

Arizona, U.S. – Baja California and Sonora, Mexico

The International Sonoran Desert Alliance *La Alianza del Desierto Sonorense*



Source: U.S. State Department

INTRODUCTION

Prevalent throughout the Sonoran Desert, saguaro and organ pipe cacti dot the landscape from the southwestern corner of the U.S. to the northwestern regions of Mexico. Working to promote conservation throughout the western portion of this unique transboundary ecosystem is a community-based effort called the International Sonoran Desert Alliance (ISDA). As its mission, ISDA has embraced the challenge of instilling a

common stewardship ethic among the scattered communities of this expansive region.¹ With a staff of four and a board of fifteen, ISDA is an ambitious effort that continues to grow and yet is firmly planted in its grassroots foundation.

While much of the Western Sonoran Desert is under some form of governmental protection, the management of protected areas on both sides of the border has been largely disjointed and public participation regarding the development of conservation strategies has not been consistently sought. Recognizing local communities as the key to sparking regional interest in environmental issues, ISDA hopes to foster a network of environmental education and sustainable communities projects aimed at improving the quality of life for all Sonoran Desert residents – humans, animals, and plants alike.

Why Transboundary Management?

The U.S. and Mexico share an obligation to protect and preserve the natural resources of the Western Sonoran Desert. Due to the fact that air and water pollution flow back and forth across the border, each country is partially responsible for the other's health and well being. The human communities affected by this situation are the American, Mexican, and tribal stakeholders who rely upon the region's natural resources for sustenance, employment, enjoyment, and ceremony. Until ISDA formed in the early 1990s, there was no organized forum for cross-border discussions of conservation as it related to these issues.

In an attempt to reflect the diversity of regional communities, ISDA solicits, and currently enjoys, the participation of all three Sonoran Desert nations (the U.S., Mexico, and the Tohono O'odham Tribe). The leadership roles that local community members and government officials from these nations have played in ISDA projects have helped with the implementation of ISDA's mission on the ground. In addition, ISDA maintains relationships with well-established and respected conservation organizations throughout the region and has been able to garner funding and attention as result of these associations.

CONTEXT

The Sonoran Desert Ecosystem

Located along the borderlands of the U.S. states of Arizona and California and the Mexican states of Baja California Norte, Baja California Sur, and Sonora, the Sonoran Desert covers approximately 119, 00 square miles (190,000 square kilometers).² This desert is among the wettest and warmest³ of the four great deserts of North America.⁺ Geographers and biologists have divided the Sonoran Desert into six subdivisions. The area covered by the International Sonoran Desert Alliance includes the Arizona Upland and Lower Colorado River Valley subregions, more simply referred to as the Western

⁺ The four great North American deserts are: the Chihuahuan, Great Basin, Mojave, and Sonoran Deserts. See Chester (1999), pp. 163-4.

Sonoran Desert.⁴ Spanning the U.S.-Mexico border, this portion of the Sonoran Desert is one of the largest primarily intact arid ecosystems in the world.⁵

Ecological and Economic Values

In many ways, the Sonoran Desert is not a typical desert in that it covers a wide range of environments, from extremely dry to moderately moist.⁶ Due to its relatively high rainfall and the diversity of geological substrates and resultant soil complexes, the Sonoran Desert supports the highest biodiversity of all North American deserts.⁷ It is home to a number of endangered species, federally listed as such in the U.S., including: the Sonoran pronghorn antelope, the desert pupfish, the lesser-long-nosed bat, and the Nichol's Turk's head cactus.⁸

In addition to supporting a dynamic desert ecosystem, the ecological features of the Western Sonoran Desert have been integral to the traditional economic activities of the region. Natural resource extraction, particularly copper mining, once comprised the region's economic backbone. However, the copper deposits of this area are now virtually exhausted, and mining has been replaced by tourism, agriculture,⁺ and manufacturing.⁹ The warm climate has also attracted numerous retirees to the region.

Ecosystem Stresses

Population growth is one of several factors threatening the environmental integrity of the Western Sonoran Desert. From 1970 to 1990, the region's population doubled and has shown few signs of slowing since then. Coupled with the physical border control measures, the increased urbanization and road construction associated with population growth has fragmented wildlife habitat and transboundary migration corridors. Likewise, groundwater overdrafts, livestock grazing, the introduction of invasive species, and ore mining have all had direct negative impacts on environmental quality.¹⁰

Land Ownership Pattern

Although much of the western portion of the Sonoran Desert is under the protection of government ownership, there are a variety of agencies carrying out independent, and often disjointed, management activities on these lands.¹¹ The largest and most significant blocks of public land include: the Organ Pipe Cactus National Monument (an internationally-recognized Biosphere Reserve managed by the U.S. National Park Service), the Cabeza Prieta and Buenos Aires National Wildlife Refuges (managed by the U.S. Fish and Wildlife Service), the Barry M. Goldwater Airforce Range (managed by the U.S. Air Force and the U.S. Marine Corps), and *El Pinacate y El Gran Desierto de Altar* and the *Alto Golfo de California y Delta del Rio Colorado* Biosphere Reserves of Mexico.¹² In total, the government owns 6.5 million acres of this region.¹³ Additionally, the U.S. Tohono O'odham Indian Reservation and a number of communal farms (called *ejidos* in Mexico) on both sides of the border own notable amounts of land.¹⁴

⁺ This includes dry land farming and ranching. See The U.S. State Department (November 16, 2000).

History of Cooperation

For several decades, there has been some indication of interest in the pursuit of an ecosystem approach to Sonoran Desert conservation.¹⁵ In the 1960s, Stewart and Morris Udall, brothers serving as the Secretary of the Interior and a U.S. Congressman from Arizona, respectively, put forth the first proposal for a single national park protecting the U.S. portion of the Sonoran Desert.¹⁶ Although a park was never established, there are a number of contemporary environmental groups who believe that the Udalls' plan should be resurrected. The Department of Defense's lease on the Barry M. Goldwater Airforce Range is coming to an end, and if a park or protected area is not established, it is likely that the Bureau of Land Management will assume responsibility over these lands. Some think that such a transfer will lead to development of the area, since there is reason to believe that the BLM would sell this parcel to private entities.¹⁷ Park advocates are optimistic, however, claiming that "the idea of a Sonoran Desert National Park and Preserve has significant public support."⁺ Although a park has yet to be established, the U.S. Department of the Interior did designate a portion of the Sonoran Desert a National Monument in the winter of 2001, building off previous attempts to highlight the ecological significance of this unique ecosystem.

In 1996, the Governors of Arizona and Sonora signed an agreement endorsing the creation of the network of binational Biosphere Reserves that exist throughout the Sonoran Desert today.¹⁸ At the federal level, U.S. Secretary of the Interior Bruce Babbitt and Mexico's Secretary of the Environment Julia Carabias signed a letter of intent in 1997, committing themselves and their agencies to the protection of critical natural areas along the U.S.-Mexico border, with specific emphasis given to the Sonoran Desert portion of this area.¹⁹ As signified by the signing of these two landmark agreements, there is clearly vested interest on both sides of the border in protecting the shared ecosystem of the Sonoran Desert.

This commitment is apparent in ISDA's work, particularly in terms of the often overlooked or underplayed Mexican interest in environmental issues. ISDA's programs reflect Mexican concern for desert and urban revitalization, waste disposal, and the reduction of air, water, and soil pollution.²⁰ In addition, the ISDA Board enjoys the official participation of individuals representing Mexican environmental groups like *Pronatura*, *Fundación de Pinacate* (The Pinacate Foundation) and *La Ruta de Sonora*.²¹ Other Mexican Board members have been working hard to engage local levels of Mexican government in the work of ISDA. ISDA staff were recently asked to create a ten-minute presentation on the organization so that legislators in the Mexican town of Puerto Penasco could deliver it to officials in the Sonoran capital of Hermosillo to spark their interest.²²

The Native Americans of the region, particularly the Tohono O'odham, have also set an example in transboundary communication. They have long maintained relationships between brethren on both sides of the border, despite the fact that their shared homeland

⁺ 84% of Arizonans are in favor of creating a park. See Broyles and Martínez del Río (2000), p. 56.

was officially bisected by the U.S.-Mexico divide that was carried out under the Gadsden Purchase Treaty of 1853.²³

History of ISDA

In hopes of fostering similar levels of transboundary cooperation as had been experienced in the past, the International Sonoran Desert Alliance eventually coalesced as the result of several years of stakeholder gatherings. Beginning in 1988, the U.S.-based Friends of Pronatura⁺ organized a conference in Hermosillo, Sonora so that scientists and others could share the results of various research projects being conducted in the ecologically rich Pinacate region of the Sonoran Desert. Approximately 200 individuals attended this meeting, including twenty members of the Tohono O’odham Nation. The native people gave a memorable presentation conveying their concerns over the preservation of the Pinacate’s sacred grounds and natural resources. The openness of the conference forum allowed the O’odham to speak about their spiritual and environmental interests and be taken seriously among an audience of scientific practitioners. The former President of the now-defunct Friends of Pronatura said, “I knew what had happened at that 1988 meeting was kind of magic. From that point on, I started really trying to find a way to create a forum in this part of the world that would permit people from various cultures to speak with each other rather than at each other.”²⁴

The 1988 Pinacate conference opened conservationists’ eyes to the fact that the interests and concerns of stakeholders throughout the Western Sonoran Desert were social as well as environmental. As the former Friends of Pronatura’s President stated in reference to this meeting, “We approached it from an environmental standpoint but certainly we found people whose concern about the environment was spiritual and social – the native peoples – and they came saying unless we take care of the spiritual aspects of this all the research in the world is not going to do anything.”²⁵

In December of 1992, Friends of Pronatura joined the Tucson-based Sonoran Institute and the Lincoln Institute of Land Policy in organizing a Western Sonoran Desert land use conference in Ajo, Arizona.²⁶ Invitees included environmental non-governmental organizations, local chambers of commerce, Native American groups, and local governmental bodies.²⁷ Again, about 200 people attended. In response to the enthusiasm generated at this gathering, a congressional allotment on the order of \$250,000 was granted to further conservation effort in the Sonoran Desert.²⁸ These funds were managed by the National Park Service and provided a firm financial base from which to grow an organization aimed at fostering communication and joint projects among the range of stakeholders spread throughout the Sonoran Desert.²⁹

⁺ Pronatura is a major Mexican conservation organization. Friends of Pronatura (FPN) phased out of existence in 2000. Due to a lack of effective communication between FPN and Pronatura Central in Mexico, all formal ties were severed. Former FPN president, Carlos Nagel, created Friends of the Sonoran Desert in FPN’s stead. It is completely dissociated from Pronatura Central but maintains friendly relations with various branches of the organization.

It was not long after this conference that ISDA was established. In the words of ISDA's Executive Director, "ISDA was born with some great karma and a big bang."³⁰ Officially incorporated as a U.S. nonprofit organization in 1994,³¹ ISDA has focused on consensus building and information-sharing on issues related to ecologically sound economic development and environmental education.³² In 1995, an event similar to the 1992 land use issues conference was held in Caborca, Sonora, and this was when ISDA really "crystallized."³³ Representatives from the U.S., Mexico, and the Tohono O'odham Nation were all present and eager to find the best ways to foster communication and cooperation between government land managers and local residents of the Western Sonoran Desert.³⁴ At this time, the Bureau of Land Management (BLM) and the U.S. Fish and Wildlife Service (FWS) both awarded ISDA grants to help supplement a recent contribution from the Ford Foundation which was funneled through the Sonoran Institute.³⁵

Significant Milestones

1988- Conference on the environmental science of the Pinacate region (Hermosillo, Sonora)

1992- Conference on land use issues in the Western Sonoran Desert (Ajo, Arizona)

1993- Alto Golfo and Pinacate Biosphere Reserves established in Mexico

1994- ISDA incorporated as a 501(c)(3) nonprofit organization in the U.S.

1995- 2nd conference on land use issues in the Western Sonoran Desert (Caborca, Sonora)

2001- (pending) Conference on economic sustainability through conservation (Sonoyta, Sonora)

The foundation money, \$60,000 a year for three years, was particularly important in that it was earmarked specifically for "institution building." In other words, this money went to operational costs and significantly helped ISDA get off the ground.³⁶ In addition, this grant mandated that ISDA officially separate from its main fiduciary agent to date, the Sonoran Institute. Over a two-year period, an ISDA Board of Directors was established and tasked with the development of internal procedures and structures for ISDA. At this point, it was assumed that ISDA would largely be a board-driven organization, reliant upon board members for all essential operations.³⁷

Impressed by the direction in which ISDA seemed headed, the Ford Foundation renewed its initial grant in 1999 for another three years at an increased level of \$100,000. This substantial revenue stream has played an important part in putting ISDA on the conservation map and has given the organization the confidence and capacity to diversify its funding portfolio with a broader range of partners.³⁸

APPROACH TO TRANSBOUNDARY COOPERATION

Involved Stakeholders

In addition to funders, there are a number of other parties concerned about the fate of the Western Sonoran Desert, including government agencies, environmental groups, and

several clans of the native O’odham people (Tohono, Hia-Ced, and Tona).³⁹ Pulling from these pools as well as the local citizenry, ISDA hopes to bring together those individuals and organizations that can affect the most sustainable ecological benefits for the transboundary region. Although ISDA has not solicited the explicit involvement of government officials in its work, various government agencies have supported ISDA through their encouragement of community participation. In addition, ISDA maintains working partnerships with those agencies that grant them funding, such as the BLM and FWS.⁴⁰ As stated by the ISDA Executive Director, these are “good, harmonious relationships. They fund us and we try to help them put out their programs.”⁴¹ For example, some agencies call upon ISDA to disseminate the environmental education programs they simply do not have the mechanisms to implement effectively on their own.⁴²

Local Participation

Although it covers a large area, ISDA aims to have its major impacts at the local level, and this focus has led to a significant amount of public participation. In fact, the nature of ISDA’s support in Mexico has come mainly from local citizens.⁴³ While its board maintains policy level connections to academics and government, ISDA has the potential to be most effective among its target audience because of the committed on-the-ground network of local community members that promote its programs. According to ISDA’s executive director, “it would be absolutely impossible, of course, [for us to accomplish our community level agenda] if we didn’t have people who were helping us in the communities.”⁴⁴

Most ISDA programs take place in communities on the Mexican side of the border. In the U.S., only Ajo, Arizona and portions of the Tohono O’odham Nation are regularly engaged in ISDA activities.⁴⁵ Meanwhile, Sonoran towns like Caborca, Puerto Penasco, San Luis, and Sonoyta as well as Mexicali, Baja California are all active ISDA participants.⁴⁶ Take San Luis for example, where the Director of Instruction for four schools implemented an ISDA environmental education project in her district. This endeavor involved having students paint fifty-five gallon drums with Sonoran Desert themes and put them around town to raise consciousness about litter prevention.⁴⁷ Ajo, Arizona, also participated in this project. Although based in Ajo, ISDA works effectively in Mexico because it is legally registered with the Mexican government as a foreign non-profit corporation that can meet and promote certain limited activities in Mexico.⁺ The current director of ISDA enjoys the fact that “because [ISDA] is not a government organization [it] can jump across the border real easily.”

Although ISDA is supported on both sides of the U.S.-Mexico border, the nexus of its activities is not aimed at directly influencing environmental policy in either country, per se. According to a Mexican board member, “this is partly due to the fact that the organization does not have a definite direction in lobbying for or against the enactment of

⁺ ISDA is not recognized as an NGO (*asociacion civil*) in Mexico even though it is registered as a 501(c)(3) nonprofit organization in the U.S. The laws which authorize the operation of ISDA as a corporation in Mexico are found in the Mexican civil code (Article 27, paragraph 1; Article 28, paragraphs 27-36, 27-37, 27-38; and Article 60, paragraph 3). See Cantú (February 12, 2001).

new policy or changes to the existing ones.”⁴⁸ In addition, most of ISDA’s projects do not operate at the policy level. “We are more involved with trying to get into the communities – we’re more like the guys in the trench,” says the executive director of ISDA.⁴⁹

The ISDA Board

However, ISDA does maintain an overarching Board of Directors which advises on the direction and diversity of projects undertaken by the organization. The ISDA Board is comprised of five members from Mexico, five members from the U.S., and five members from the O’odham Nation. Although the Board has not traditionally included government representatives, a current Board member is the Secretary of Puerto Penasco.⁵⁰

ISDA Board of Directors

- 8 U.S. members representing:
 - Friends of the Sonoran Desert
 - Hia Ced O’odham Alliance
 - Ajo business community
 - Tohono O’odham Nation
- 7 Mexican members representing:
 - *La Ruta de Sonora* (environmental organization)
 - Tohono O’odham Nation
 - Municipality of Puerto Penasco

The ISDA Board is an interesting creature due to the fact that its members serve voluntarily and are elected at board meetings by those that are present.⁵¹ While this approach can be applauded for its democratic intent, it has flaws in that elections are often held at meetings that not all board members can attend. Several ISDA board and staff members have noted the frustrating challenge inherent in reconciling scheduling conflicts and facilitating travel to meeting locations.⁵² In some cases, border crossing has been a very real barrier to representative elections. The current ISDA executive director laments this situation:

We’ve got some members who can’t get across the border to this side so we’ve had our meetings mainly in Mexico. We’re having our next one at the end of this month here in Ajo [Arizona] just because we haven’t had one here in the U.S. for about three years, but there are some board members that can’t cross – they don’t have permission. They’re O’odham natives and, for whatever reason, they can’t get passports unless they renounce their allegiance to the tribe. According to Mexico, there are no tribes – just Mexicans. So you’re either Mexican or you’re not. And the requirements for getting in on the U.S. side are kind of rigid – they ask you for rent receipts and utility payments...and we deal with some people with scant resources, so it’s been tough.⁵³

In addition, this election of new board members occurs only every three years and can lead to a temporary dominance of priorities in one area or even one municipality of the region, depending on where the last election meeting was held.⁵⁴

ISDA’s Organizational Structure

Although ISDA was born as a board-driven organization, this strategy, in lieu of having dedicated program staff, did not prove to be most effective over time. “Fifteen board members means fifteen different human natures, and it’s sort of difficult to get things done that way,” noted the current ISDA Executive Director.⁵⁵ So, in 1998, some

structural changes took place in the organization. For one, an executive director was hired and took charge of the daily, on-the-ground operations of ISDA. There had been one previous director of the organization, but time had lapsed between her departure and the hiring of a new director, and ISDA quickly fell behind in filing the grant applications that were essential to its continued operation.⁵⁶ During this time, the current executive director was contracted by the board to publish a newsletter which, for quite a while, was the only thing that existed of ISDA.⁵⁷ He had also worked for ISDA as a board meeting translator, and these collective experiences familiarized him with ISDA, its mission, and its need for some administrative guidance.

Today, ISDA has four staff members: an executive director, program director, director of development, and office manager. The Development Director, the organization's newest position,⁺ is focused on establishing a long-term endowment program for ISDA so that it will no longer be at the mercy of various disjointed grants.⁵⁸ How the ISDA board and growing program staff can most effectively coordinate and benefit from one another without stepping on toes has been a challenge and a work in progress. In some cases, this relationship needs to be redefined in order for ISDA to maintain an appropriate position in the local communities within which it works. For example, ISDA's executive director notes that "if a board member decides to get involved with a project, that board member should probably waive his or her 'authority,' temporarily, and become part of a project team that would be under the management of the staff."⁵⁹

ISDA's Mission and Established Programs

The mission of ISDA is "to encourage a healthy, positive relationship between the Sonoran Desert, its inhabitants, and the needs of humanity."⁶⁰ According to a U.S. board member, "ISDA is trying to create that space where people can come together and dialogue with each other so that there can be a truly participatory approach to problem-solving."⁶¹ In addition to sponsoring regional conferences on environmental sustainability,^{*} ISDA has a number of programs in place that are aimed at helping local residents "guide their own destiny" in this area.⁶² Established programs include: "*Juntos: Maestros y Ninos del Desierto*" ("Together: Teachers and Students of the Desert") which is a bilingual, Sonoran Desert-specific environmental education (EE) curriculum being used through the region, and "*Roots/Raices*" which is a high school-based beautification program centered around recycling and tree planting.⁶³ The first approach to these EE efforts was to organize autonomous local youth groups to take the lead on various projects, but this failed to be sustainable when the older student leaders graduated and left the schools. Now, ISDA's EE focus is on working with education officials to implement an EE delivery system that will implement ISDA programs directly through the classroom.⁶⁴

ISDA's New Direction

These days ISDA is focused on the development of new projects that seek to "make money with the environment."⁶⁵ According to one of the board members, "the theme for the next three years is 'conservation through economic development.'"⁶⁶ In order to

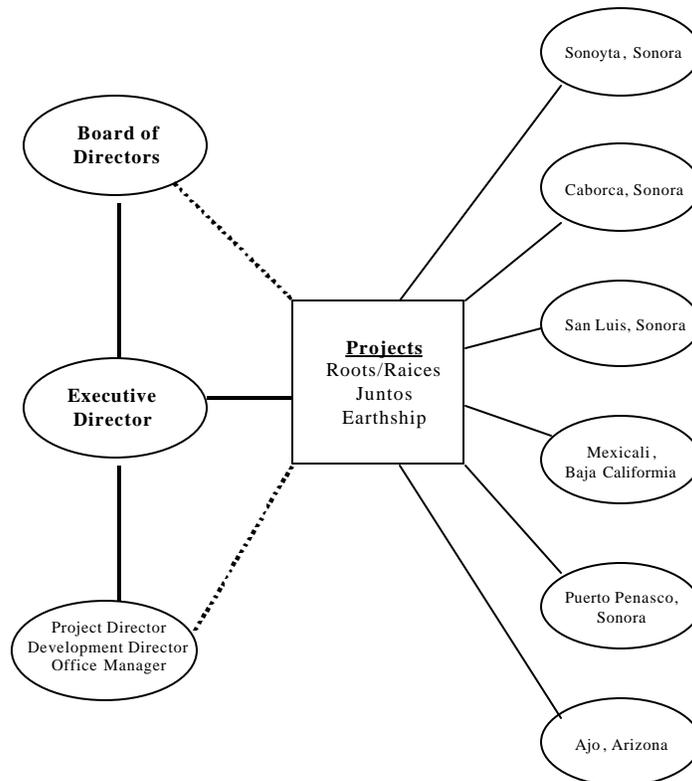
⁺ Created in January 2000. See Cantú (February 12, 2001)

^{*} A conference similar to the 1995 gathering is being planned for October 2001, to be sponsored by ISDA.

achieve this goal, ISDA is promoting a variety of environmentally appropriate business and economic development initiatives throughout the region. For example, much of the Western Sonoran Desert is currently facing energy and water shortage crises. One innovative solution is the “earth ship” demonstration project. An earth ship is a self-sufficient housing unit that is constructed from recycled bottles, cans, and tires and utilizes solar and wind energy and water catchment systems.⁶⁷ The prototype is being built in Mexicali in cooperation with architecture students from the University of Baja California. It is hoped that housing officials from around the region will visit this pilot project and consider implementing these environmentally sound dwellings in their areas.⁶⁸

In addition, various opportunities for local residents to become involved in ecotourism and green business ventures are being highlighted with ISDA’s help. Through workshops held in all parts of the region, ISDA board members and staff hope to encourage at least ten new “eco-entrepreneurs” over the next three years.⁶⁹ While the effort put into the development of these new projects may, in effect, de-emphasize ISDA’s environmental education and other youth-related programs, it is going to give the organization another dimension to add to its portfolio.⁷⁰

Organizational Diagram of ISDA



This is a simple pictorial diagram of basic organizational structure and is not meant to be wholly representative of all that ISDA is or does.

Barriers to Working Across Borders

Although ISDA is able to call itself a transboundary effort, there have been a number of real and perceived challenges it has had to overcome. Perhaps illustrated most clearly by the physical barrier separating the U.S. and Mexico at the border are deep-set differences such as the English-Spanish language divide and the differing priorities and laws of the two countries.⁷¹ As a former ISDA participant from the Sonoran Institute has noted, “collaboration has a long history here but are certain barriers too great to overcome?”⁷²

Attempts to reconcile the language barrier include the presence of a translator at all ISDA board meetings and publication of the ISDA newsletter in both Spanish and English. While these gestures toward ISDA’s Spanish-speaking participants are appreciated, one Mexican board member contends that it would be helpful if all persons working in the program development and management of ISDA were bilingual – including both Mexicans and Americans.⁷³ In addition, locating some dedicated ISDA staff in Mexico could greatly advance the group’s efforts there.⁷⁴

Coordinating mutually beneficial joint conservation strategies between two countries with inherently different approaches to environmental protection has been a more difficult barrier to break down due to its subtle yet engrained nature. As discussed earlier, ISDA works mainly with Mexican communities in Sonora, and the top priority for individuals in many of these areas is basic survival. This sentiment has been aptly summarized by one American board member: “You have to have enough money to feed your family, clothe yourself, and have a roof over your head. If you’re hungry and you can’t feed your family, you’re not going to care about any of the fuzzy creatures in the world.”⁷⁵ ISDA’s executive director echoes this need to take an economic approach to environmentalism in the region: “Our feeling is that we need to start from the perspective of people’s economic lives. What we’re really realizing now is that, in order to really deal with conservation as a consciousness issue, people have to first have the capacity to feed themselves and take care of their families.”⁷⁶

Out of necessity, money is the most vital concern of many of the people living within the Mexican portion of the Western Sonoran Desert -- hence the direction of ISDA’s new programs aimed at educating people about generating income in environmentally-sustainable ways.⁷⁷ This is an especially important task in the areas of Mexico where the Alto Golfo and Pinacate Biosphere Reserves exist. When these areas were declared protected in 1993, people who had been gathering wood and hunting there were no longer allowed to continue these activities.⁷⁸ Without viable alternatives, illegal logging and poaching may threaten these reserves today.

Opposition to ISDA

Although conflicting forces have not confronted ISDA outright, there are undercurrents of opposition flowing throughout the region. Only occasionally does this opposition manifest into action. For example, ISDA proposed the creation of a native plants interpretive trail and outdoor study area for a school in Ajo that had acquired several acres of property, only a fraction of which was needed to build amenities such as new ball fields. To get their proposal approved, ISDA had to go to the school board, where they

encountered the opposition of a board member who was adamantly against environmental education because he thought it was “a plan to get the government into the schools.”⁷⁹

Also surfacing in the U.S. have been negative reactions to attempts to further involve the government, particularly the federal government, in the lives of individuals. At one point in time, it was suggested that the protected areas within the Sonoran Desert become part of an integrated United Nations (U.N.) environmental management plan, but due to the fact that the U.N. is such a “political hot potato” in Arizona,⁺ the concept was dropped altogether.⁸⁰ As the executive director of ISDA has said, his organization is not interested in fighting with people. According to him, ISDA is “trying to get people to understand that a sustainable economy can come from conservation -- that’s where energy is being focused.”⁸¹

ACCOMPLISHMENTS

Among those who have written about it, ISDA is generally considered to be a success in terms of its promotion of community-level conservation throughout the Western Sonoran Desert. It has been heralded as a “regional cooperative” that has “empower[ed] its members to achieve community goals compatible with maintaining a healthy desert ecosystem.”⁸² ISDA’s community focus is one of its most unique and strongest features. The ISDA approach has encouraged communication among people who have not traditionally consulted one another despite the fact that they rely upon the health of a shared ecosystem.⁸³ In addition, “ISDA has succeeded in building self-confidence and self-reliance among its members and has been able to build a regional identity” centered on the Sonoran Desert.⁸⁴

An Effective Process

Those people directly involved in ISDA have equally praiseworthy comments to make about this transboundary conservation effort. For one, ISDA’s long-term agenda has been noted as being important to the creation of meaningful relationships between it and the communities that hope to benefit from its work.⁸⁵ Environmental restoration does not occur over night, and ISDA has been able to facilitate an understanding of this phenomenon without sacrificing local commitment to its projects. Moreover, ISDA’s flexibility as a non-governmental non-profit organization has allowed it to follow a “dynamic process which is very difficult to achieve when it is mandated.”⁸⁶

From the perspective of a Mexican ISDA board member, one of the most important accomplishments of ISDA over the years has been its ability to prove that “effective multicultural coalitions can be formed across borders.”⁸⁷ The initial impact of ISDA’s public relations strategies point that way as the organization tends to generate considerable amounts of interest in Sonoran communities.

⁺ The U.N. is also involved in immigration issues in the region. See Cantú (February 12, 2001).

Positive Ecological Outcomes

In terms of ecological accomplishments, the effects of ISDA's environmental education programs are often cited.⁸⁸ Another notable success is ISDA's raising of an awareness of environmental issues in parts of the region where such consciousness had not previously existed.⁸⁹ According to ISDA's executive director, "the best thing [ISDA is] doing is developing a environmental consciousness that just didn't exist before in kids. As one of our project members once said, 'It's like watching the ocean fill up with drops of water' – it's like starting from ground zero because there is generally no consciousness of environmental issues in Mexico – even in terms of things as basic as littering."⁹⁰ As far as on-the-ground ecological work is concerned, ISDA has plans in place to help support the revival of the Sonoyta River for the creation of endangered desert pupfish habitat.⁹¹

Special Factors Facilitating Transboundary Action

In spite of the inherent differences between the U.S. and Mexico, some believe that the relationship between Arizona and Sonora in particular is a special one. According to one ISDA board member, these states have maintained close ties through family and business connections for hundreds of years.⁹² While the wall running along the border grows taller and taller over time, "it doesn't alter the fact the relationships between [Arizona and Sonora] and [its] people are really extraordinary."⁹³ When it comes down to it, ISDA can function because its work is a matter of people working with people, not governmental institutions trying to mesh their skewed laws and policies with one another.

Individuals and organizations have also been credited with helping ISDA along. Specifically, ISDA has benefited from the involvement of board members with experience in community organization and cross border relations.⁹⁴ These people are instrumental in utilizing their colleague networks to establish contacts and advisors for ISDA's various projects. In addition, organizations like the Sonoran Institute and the University of Sonora, particularly the Caborca Campus, have played keys roles in facilitating ISDA's work.⁹⁵

CONCLUSION

In many ways, ISDA embodies the ethos of "eco-regionalism" – a new way of thinking about conservation which "acknowledges the myriad relationships that tie species, habitats, and human communities into a larger, independent whole."⁹⁶ Implicit in cross-border conservation is that fact that *binational* (or in the case of ISDA, *trinational*) responsibility for the fate of the shared eco-region must be assumed.⁹⁷ Not only does ISDA reflect a recognition of this fact at the national level, it has instilled a sense of commitment to conservation in local communities throughout the Western Sonoran Desert. Although many of ISDA's day-to-day programs take place on the Mexican side of this ecosystem, they do not act as if they are working in a vacuum. Every place within the Western Sonoran Desert that becomes less polluted has positive benefits for the entire desert, and local citizens are beginning to realize the impacts of their participation in ISDA's efforts.

In addition, the network of protected areas in the region is testament to the fact that it is considered ecologically significant, and ISDA has been able to build from this backbone of government support. However, giving the desert's residents the ideas and tools to take conservation into their own hands is a contribution unique to ISDA. By creating as seamless of a crossborder community as it could, ISDA is trying to build a foundation upon which the desert can be saved.

Lessons Learned

There are a number of lessons for those interested in transboundary resource stewardship that be gleaned from the ISDA experience:

- **Build self-reliance for environmental conservation among local communities.**
In order for the conservation of any ecosystem to be sustainable, commitment must exist at all levels. The local level is sometimes overlooked, and the ISDA case points to importance of making local communities part of the solution. ISDA's executive director feels strongly about this approach for his organization: "We're trying to give people the power. If what we're doing doesn't do that, then we're not doing the right thing."⁹⁸
- **Recruit knowledgeable and connected board members.**
This lesson is two-fold. ISDA has particularly benefited from those board members with cross-border experience and connections to people on "the other side." At the same time, one board member has lamented that there is no regular and consistent program of evaluation for the board (or staff for that matter), and no consistent effort is made to ensure that participants are bilingual to the extent that that is possible.⁹⁹
- **Tackle the most solvable obstacles first.**
Not only will the challenges to transboundary ecosystem management be institutional in nature, as exemplified by incongruity of governmental structures that exist between various nations, they will also be personal in the sense that the priorities of parties involved may not be the same. The ISDA case illustrates the importance of focusing efforts on common interests to reconcile these more subtle differences (by pursuing conservation through economic development for example) while avoiding institutional roadblocks however possible.
- **Be creative.**
When the going gets tough, the tough get creative. Such was the case with ISDA when it became a legalized Mexican corporation. This move allowed ISDA to operate effectively on both sides of the border and lent it legitimacy that would have otherwise been more difficult to garner as an American organization attempting to work with local communities in Mexico.
- **Address *current* concerns.**
Any effort will be more effective when it taps into people's immediate interests. When ISDA realized that it could reach a wider audience with a green business approach, it moved in that direction.

Interview Contacts

- **Reynaldo Cantú**, Executive Director, ISDA
- **Steve Cornelius**, The Sonoran Institute
- **Manuel Gonzalez-Montesinos**, ISDA Board Member (Mexico), Doctoral Student
- **Susan Goodwin**, U.S.-Mexico Coordinator, U.S. Department of the Interior
- **Carlos Nagel**, ISDA Board Member (U.S.), Friends of the Sonoran Desert

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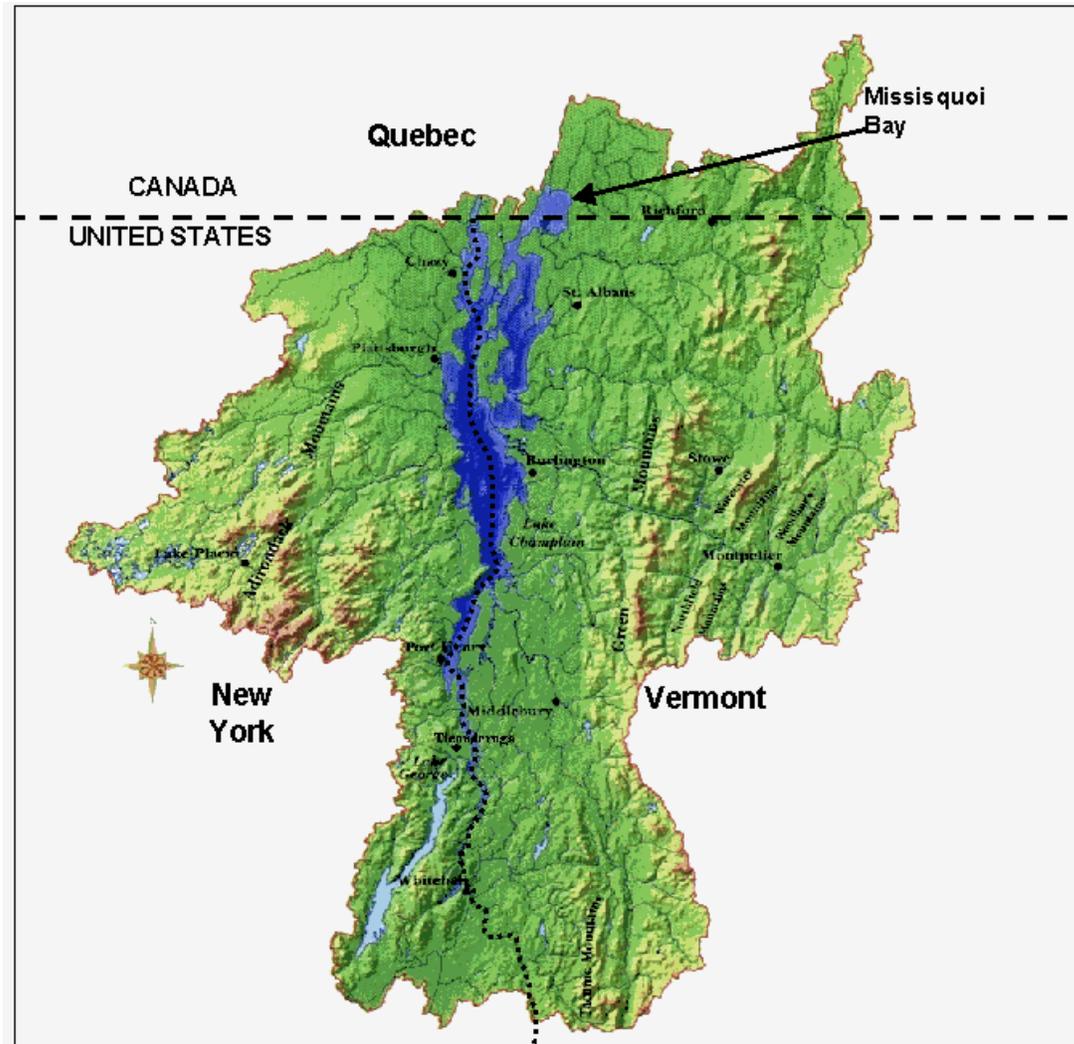
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LAKE CHAMPLAIN BASIN

New York and Vermont, USA – Quebec, Canada



Base map from Lake Champlain Basin Program, www.lcbp.org.

INTRODUCTION

The Lake Champlain Basin is valued as an ecological and economic resource, providing a source of clean drinking water and a livelihood for many of its residents. Increased development within the basin impacts these values, elevating phosphorous levels in the lake, destroying shoreline habitat, and spreading non-native aquatic species throughout the system. Over the past thirteen years, the interrelated agreements and activities that fall under the umbrella of the Lake Champlain Basin Program have effectively mitigated these impacts and protected the lake as a scenic, ecological and economic resource.

The efforts of the Basin Program, some interstate and others international, were facilitated by an Act of Congress, several state-state and state-province agreements, an

overarching Memorandum of Understanding, and a comprehensive management plan. As a result of these actions and agreements, this transboundary basin has benefited from noticeable improvements in lake quality and a stronger network of communication and coordination among the agencies and citizens who look after its well-being.

Since its creation in 1988, the Lake Champlain Basin Program has made significant progress in protecting and improving the quality of the lake as an ecological resource. The Basin Program has supported the creation of over 25 local citizen-based watershed groups, has created and sustained habitat protection and restoration programs, and has facilitated the development of educational programs and recreational amenities along the lake. In addition, the Basin Program has facilitated the cleanup of toxic chemicals, and has significantly reduced phosphorous loading in the lake. These and other achievements would not have been possible without the Lake Champlain Basin Program and the transboundary collaborative process that it has sustained.

Why Transboundary Collaboration?

Lake Champlain is both an interstate and international resource. Realizing that any unilateral lake protection program would be ineffective, the states of New York and Vermont and the Province of Quebec are coordinating their lake protection efforts, despite the existing barriers to cross-boundary collaboration. While many of the collaborative resource management programs and activities (as well as most of the land area) occur between New York and Vermont, momentum is growing towards the full inclusion of the Canadian province of Quebec. Because of these efforts the Lake Champlain Basin Program is coming to the fore as a model for binational, transboundary resource management. This is largely because of the Basin Program's unique organizational structure that promotes the representation of both high level officials and individual citizens across two U.S. states and one Canadian Province.

The transboundary activities outlined in this case study demonstrate how stakeholders have tailored binational agreements to better coordinate resource protection efforts. With limited federal involvement and strong grassroots support, these activities have already made a significant difference in protecting the natural and economic values of Lake Champlain.

CONTEXT

Lying between the Adirondack and Green Mountains of northern New England, the 8,000 square mile/ 20,700 sq. km. Lake Champlain Basin is renowned as a significant ecological, scenic, and recreational resource.¹ This binational basin includes portions of the state of Vermont (56 percent of the basin), parts of New York (37 percent of the basin) and a small portion of Canada's province of Quebec (7 percent of the basin). Following the Vermont/New York border for about 100 miles, the lake drains to the north into the Quebec's Richelieu River, a tributary to the St. Lawrence River.²

The Lake Champlain Basin is home to over 600,000 people, supporting several population centers such as Burlington, Vermont; Rutland, Vermont; Plattsburgh, New York; and Queensbury, New York. There are several small towns within Quebec's portion of the basin, including Clarenceville, Venise-en-Québec and Bedford. The principal land uses in the area include agriculture, forestry, and urban areas. Most of the land is privately owned, with the exception of portions of Green Mountain National Forest, several Vermont State Parks, and the Missisquoi National Wildlife Refuge along the southern shores of Missisquoi Bay in Vermont. Most of New York's part of the basin is contained within the 9,400 square mile/ 24,500 sq. km. Adirondack Park, which is protected by forest reserves on public land and development regulations on private land.³ In Quebec, most of the basin land is also privately owned, with the exception of the recently established Pike River Ecological Reserve, a public-owned protected area.

The Lake itself is divided into five distinct areas, each with its own physical and chemical characteristics. One of these segments is Missisquoi Bay, which is bisected by the international border between Vermont and Quebec. This bay feeds the main body of the lake, and has been the focal point of many of the binational resource protection efforts in the basin.

Ecological, Historical, and Economic Resources

Home to over 300 species of birds and 80 species of fish, the biological communities of Lake Champlain are similar to those found in the Great Lakes, though Lake Champlain has not experienced the same historical development pressure. Due to this similarity, the Lake Champlain ecosystem provides a useful living laboratory for studies in large lake ecology.⁴ Besides its ecological significance, Lake Champlain is highly valued for its water quality, providing a drinking water source for nearly 200,000 people.⁵

Lake Champlain is also known for its cultural and scenic resources. The Lake Champlain region played a significant role during the colonial wars and the War of 1812, as the Lake itself was the scene of several battles during that period. Several cultural heritage sites, including forts, shipwrecks and other maritime artifacts, are preserved within the basin. These historical resources, along with the scenic and natural features of the lake, are a major draw for lake-related tourism.⁶

The economic impact of tourism from Lake Champlain is significant. Sport fishing, wildlife viewing, and other recreational activities comprise a significant portion of the regional economy- bringing in \$2.2 billion in 1990. This accounts for 24% of the economic worth of the basin.⁷ These recreation-related industries are dependent on a clean lake and the maintenance of native plant and animal communities, both within the lake and within the greater Lake Champlain Basin.

Environmental Stresses

Since the early 1980s, environmental stresses on the Lake Champlain system have become increasingly apparent. Phosphorous levels from agricultural runoff and municipal sewage treatment plants have caused excessive algal growth in parts of the lake, which is the primary concern in Missisquoi Bay. The accumulation of toxic

substances such as polychlorinated biphenyls (PCBs) and mercury have resulted in health problems for both humans and aquatic biota. Non-native aquatic species such as sea lamprey, water chestnut, Eurasian watermilfoil, and zebra mussels have impacted fish, wildlife, and other living resources, obscured underwater archeological sites, and complicated human uses of the lake.⁸ The impacts of these issues are felt by the communities within the basin as well as those that are located downstream of the lake in the Canadian Province of Quebec. Other resource impacts in the basin have come from increasing urban and tourism-related development. These impacts include wetland loss, habitat fragmentation, and the loss of cultural and archaeological resources.⁹

Challenges to Transboundary Interaction

While the Basin's ecology, economics, and colonial history are inextricably linked across the international border, the presence of that border is certainly apparent in the cultural and political divisions that it has created. Indeed, while Quebec plays an important role in sustaining lake quality, the fact that only 7 % of the watershed is in Quebec limited their initial participation. In one example, the different governmental structures have made funding difficult.

Since U.S. EPA funds cannot be spent in Quebec, the province has to leverage other funds to contribute to the effort.¹⁰ These governmental challenges are enhanced by the disparity between the U.S. and Canadian dollar, and the language difference between Quebec and the United States. In Quebec, the predominate language is French, and while many of the citizens and resource managers in Quebec speak English, very few of the participating Americans are fluent in French.¹¹ As one EPA official points out, "The language barrier does make international work more difficult, but also more interesting."¹²

Some of the complications that arise when working across interstate and international border stem from bureaucratic differences between American and Canadian agencies. For example, an American agency official noted the difficulties of getting Geographic Information System data for the basin from the Canadian federal government.¹³ Another example of such bureaucratic complications to transboundary work in the basin has come from the fact that most of the phones at the U.S. Environmental Protection Agency (EPA) do not allow international dialing, and it is difficult to bring a U.S. Government-owned vehicle across the international border.¹⁴ One EPA official points out that "it's not hard for us to go to the meetings, it's just hard for us to bring a car over the border."¹⁵ These complications are not apparent within the state and provincial agencies.

Recognition of a Transboundary Resource

The waters of Lake Champlain are an important resource for the human communities that depend on them for drinking water and commercial enterprise as well as natural and visual qualities. Over time, however, increased human development within the basin has taken its toll on Lake Champlain, leading to deteriorating water quality, increasingly fragmented habitats and diminishing recreational resources. As two American states and one Canadian province share the Lake's resources, they also share the responsibility for protecting those resources.

Since the waters of Lake Champlain are both interstate and international, it is imperative that these jurisdictions coordinate their efforts to protect its resources. Without such coordination, any unilateral lake protection program would be incomplete and unable to fully protect the resources of the lake. For this reason, the states of New York and Vermont and the Province of Quebec have made substantial progress in overcoming the cultural and bureaucratic barriers to cross-boundary collaboration to protect this significant binational resource. As explained in detail below, these activities have occurred under the broad umbrella of the Lake Champlain Basin Program, an evolving entity that is an encouraging example of transboundary resource coordination and management.

APPROACH TO TRANSBOUNDARY MANAGEMENT

In the 1980s there was growing concern among the three jurisdictions about the declining quality of Lake Champlain, especially the very high phosphorous concentrations, as well as the lack of established lines for communication and collaboration to deal with it. In 1988, state and provincial leaders came together to take the first significant step in developing a binational basin program. Recognizing the connections between basin resources and local economies, the Prime Minister of Quebec and the Governors of Vermont and New York signed a *Memorandum of Understanding on Environmental Cooperation on the Management of Lake Champlain* (MOU). This MOU created a Citizens Advisory Committee in each of the three jurisdictions and an overarching Lake Champlain Steering Committee. The initial purpose of the committees was to facilitate the exchange of information and discussion of programs and policies affecting Lake Champlain,¹⁶ and to identify the major threats facing the lake.¹⁷ While the original Steering Committee has persisted as a formal, binational board,¹⁸ many of the early activities that took place under the umbrella of the Steering Committee were in the U.S. part of the basin. During this time, Quebec was undertaking its own watershed protection activities.

Principal Transboundary Actors

- U.S. Environmental Protection Agency
- Quebec Ministry of the Environment
- Vermont Agency of Natural Resources
- New York State Department of Environmental Conservation
- New York, Vermont, and Quebec Citizen Advisory Committees
- Missisquoi Bay Watershed Corporation

In 1990, Senators Leahy and Jeffords from Vermont and Senators Moynihan and D'Amato from New York sponsored the Lake Champlain Special Designation Act, which recognized the lake to be “a resource of national significance.” The goal of this act, which was passed by Congress, was to bring diverse interests together to develop a comprehensive pollution prevention and restoration plan for the basin. The Act specifically required that along with water quality, this management plan also consider

[†] This MOU was renewed by the state and provincial governments in 1992, and again in 1996.

fisheries, wildlife, wetlands as well as recreational and cultural resources.¹⁹ Thus, the Lake Champlain Basin Program was born under the guidance of, and funding from the U.S. Environmental Protection Agency.

In the beginning, the Lake Champlain Basin Program consisted of a multiple-stakeholder planning board (the Management Conference) that was supported by dedicated staff from the states of New York and Vermont. Quebec was not formally represented. The original purpose of the program was to develop a comprehensive management plan for the basin. While this structure complemented the original binational Steering Committee, funding limitations prevented the formal involvement of Quebec in this initial planning process.

Management Conference

The Management Conference was a 31-member board that represented basin interests and organizations from Vermont and New York. Advised by a Technical Advisory Committee (TAC) and the Citizens Advisory Committees (CACs) from the two states, the Management Conference was in charge of overseeing the five-year development of the management plan, in accordance with the 1990 Special Designation Act.²⁰ From 1990 to 1996, the Management Conference assumed the duties of the Steering Committee.

One of the reasons that the Management Conference did not include Quebec was because of its U.S. federal funding source. Since the program was paid for through the EPA, it was much easier for Vermont and New York to form a partnership, and Quebec was not included at the outset.²¹ In retrospect, many view this exclusion of Quebec from the formal process as a mistake, as it has made it more difficult for Quebec to reach their current level of involvement and implementation.

Quebec did participate in this process on an informal basis however, and was still very involved in broader Lake Champlain issues. In 1993 Vermont, New York, and Quebec signed a second agreement that established goals for phosphorous levels in the lake. This agreement provided a basis for the forthcoming recommendations of the Management Conference.²²

Basin Management Plan

In 1994, the Management Conference completed its planning process and released the first draft of *Opportunities for Action: An Evolving Plan for the Future of the Lake Champlain Basin*. This plan addressed all of the basin resources identified in the Special Designation Act, but focused mainly on reducing phosphorous loads in the lake. While *Opportunities for Action* did not technically include Quebec, the Province endorsed its recommendations.²³

After the release of this draft, the Basin Program learned a hard lesson about stakeholder involvement. “When we came out with our plan the first time around,” explained an EPA official, “we got blasted out of the water.”²⁴ When the draft plan was submitted for public comments, the business community was upset that the plan had not considered the

economic implications of resource protection, while property-rights advocates, who were still chafed over land use restrictions for Adirondack Park in New York, mobilized against the plan. According to the Vermont Coordinator, this opposition “almost killed the whole program.”²⁵

In order to ameliorate the situation, the Management Conference responded immediately. They identified the leaders of the movement and brought them to the table, eventually including two of them on the Management Conference.²⁶ According to the Vermont Coordinator described how “one of the most vocal, critics of the program is now very supportive. In fact, he gave a presentation a year ago talking about the good things about the program... I guess we did our jobs, because now he sees us as an asset... Likewise, he’s an asset to us.”²⁷ By including their main critics in the process, albeit reactively, the Basin Program took a major step forward in its representation and legitimacy.

Significant Milestones

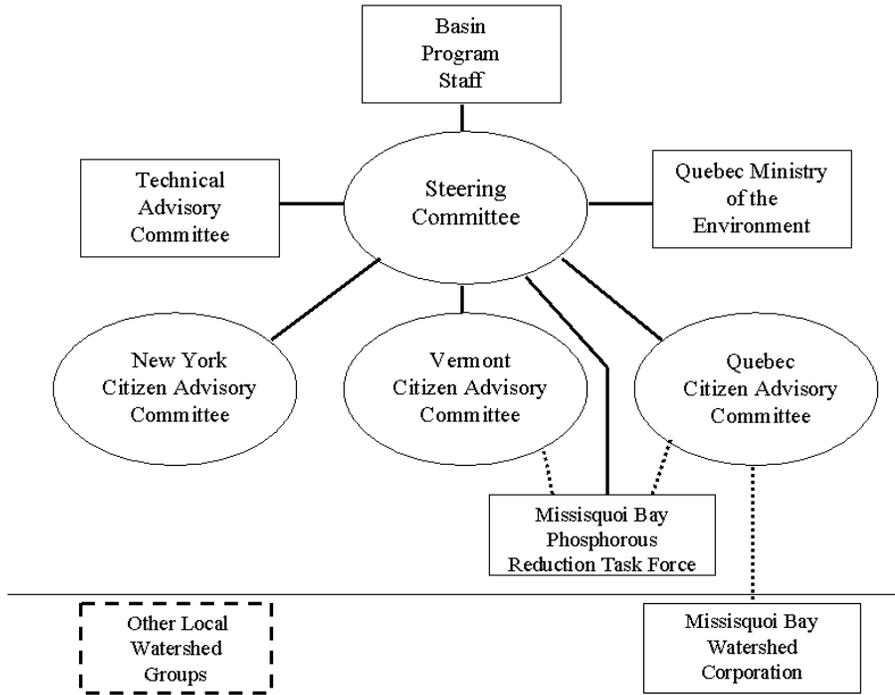
- 1988-** *Memorandum of Understanding on the Management of Lake Champlain* signed by Vermont, New York, and Quebec
- 1990-** U.S. Congress passes Lake Champlain Special Designation Act
- 1993-** New York - Quebec - Vermont Water Quality Agreement signed
- 1996-** *Opportunities for Action* management plan completed for New York and Vermont, endorsed by Quebec
- 1997-** Missisquoi Bay Task Force established by Vermont and Quebec
- 2001-** (Pending) Quebec - Vermont Agreement on Phosphorous Reduction in Missisquoi Bay

After completing the final draft of *Opportunities for Action* in 1996, the Management Conference dissolved, as specified in the 1990 legislation. At this time, the original binational Steering Committee assumed the leadership of the Basin Program, though it was restructured to give the Province of Quebec more formal involvement in the program.²⁸ After this transition, the Steering Committee was comprised mainly of the heads of the government agencies that would be responsible for implementing *Opportunities for Action*. The rationale for this uneven representation was that the agency heads could play a direct role in leveraging funding and support for management activities.²⁹

While the arrangement made sense at the time, some current Basin Program participants feel that the Steering Committee lost many of its links to the public that it had developed under the Management Conference. “I think it lost some of its oomph in that transition,”³⁰ explained one EPA official. Currently, the 19-member Steering Committee consists of agency and government representatives, as well as the Citizen Advisory Committee (CAC) chairs for Vermont, New York and Quebec. The Steering Committee

is currently contemplating how to, once again, re-align itself to better include the public as well as Quebec, which holds four of those 19 seats.^{‡31}

Lake Champlain Basin Program – Current Structure[§]



Organizational Structure

In its current form, the core structure of the Lake Champlain Basin Program—the Steering Committee, a Technical Advisory Committee, and three Citizen Advisory Committees—is relatively simple. However, there are several additional layers of complexity that are required for implementation and action on the ground (see above). With all of the various agreements, committees, commissions, and task forces, the structure of this program becomes much more complex and, perhaps, unwieldy. This complex structure has definitely led to confusion, with some Steering Committee members wondering “how all of these pieces fit together.”³² Despite this structural confusion, many of the people who are involved in the process feel that the program

[‡] While the current Steering Committee framework allows for four Quebec representatives, only two of those slots are currently filled.

[§] This structure reflects the inter-relationships of elements that are discussed in this case study. The Lake Champlain Basin Program also operates with an Executive Committee, a Cultural Heritage and Recreation Advisory Committee, and an Education and Outreach Advisory Committee, which are not represented in this diagram.

works very well. The Quebec CAC Chair explains that “it’s a complicated system, there’s no question about that... but as far as effectiveness, it’s working.”³³

One of the things that has made this potentially unwieldy structure work so well is the strength of its staff.³⁴ Besides coordinating programs and implementing outreach and education activities, the Lake Champlain Basin Program staff also plays a major role in getting information to the Steering Committee and maintaining momentum. According to the Vermont Coordinator, “the Steering Committee relies on the staff to keep them well informed... It’s sort of a bottoms-up approach to leadership that’s very inclusive. I think it’s because we’re all keeping our ears to the ground- we’re really aware of things and we can head things off at the pass before they become problems.”³⁵

Missisquoi Bay Activities

Under the overall structure of the Lake Champlain Basin Program, many of the binational activities have been focused on Missisquoi Bay, which is shared by the Province of Quebec and the State of Vermont. In addressing phosphorous levels in Missisquoi Bay, *Opportunities for Action* recommended that Vermont and Quebec determine the division of responsibility for the Bay.³⁶ To that end, Vermont and Quebec established the Missisquoi Bay Phosphorous Reduction Task Force (Task Force) to evaluate the situation and propose a fair and practical division of responsibility for achieving the target load reductions.³⁷ Formed under the guidance of the Steering Committee, the Task Force is comprised of agency staff from Vermont and Quebec.

In determining this division of responsibility, the Task Force found that, based on land area, land uses, and other point- and non-point sources of phosphorous (such as wastewater treatment facilities and agricultural runoff), Vermont and Quebec were responsible for 60% and 40% of the phosphorous reductions, respectively.³⁸ Another agreement committing the state and province to these levels of reduction, as well as a timeline for completion, is likely to be signed within the year 2001.³⁹ This agreement will also formalize Quebec’s commitment to *Opportunities for Action*, since they were not formally included in the original basin-wide plan.

Also working in the Missisquoi Bay area, a citizen-based watershed group called the Missisquoi Bay Watershed Corporation has arisen as an important player, providing another link between the Quebec Ministry of Environment and the diverse stakeholders in the local communities.⁴⁰ As a non-profit organization, the Corporation is able to receive funding from the province to work on an action plan for the bay (the Quebec CAC is not eligible for such direct funding). While the Corporation has been making a positive impact, there is no direct communication between it and the CAC.⁴¹ Because of the lack of effective coordination and communication between the two entities, the Corporation and the CAC will likely be folded together, “to strengthen their working relationship.”⁴² The CAC chair noted that “if we’re all sitting at the same table, at least we know what everybody’s doing.”⁴³

Program Operations and Activities

Besides providing coordination and support for the Steering Committee, the Lake Champlain Basin Program works with many other local organizations to develop programs relating to the lake. Through either direct involvement or grant programs, the Basin Program's activities include education and outreach, recreation initiatives, as well as wetlands acquisition and restoration. The Basin Program also provides funding and support for over 25 local citizen-based watershed groups, which is one of the fastest growing components of the program.⁴⁴

Some of these Basin Program activities are binational, while others are not. The U.S.-based Basin Program staff are funded by agencies such as the U.S. EPA, the Vermont Agency of Natural Resources (ANR), and the New York State Department of Environmental Conservation. These U.S.-based staff members work closely with their Canadian counterparts to implement the binational components of the program. In Quebec, the agency with the primary responsibility for coordinating and implementing the various agreements is the Ministry of Environment. Similar to the role of the EPA in the U.S., the Ministry of Environment has dedicated staff and funding to the program activities and, along with the Quebec CAC, has played a significant role in making the program work.

While only 7% of the watershed is in Quebec, and the watershed is only a minuscule portion of the Province, the commitment of the Provincial government has enabled Ministry staff to actively support local interests and actions in the basin.⁴⁵ In the absence of a Special Designation Act, authorities in Quebec have relied on international agreements to leverage funding and support for policies and programs in the basin. According to one Ministry official, farmers and citizens in the basin "are interested in what's going on, and they know that they have to be part of the solution too... At the beginning they were critical, saying the Ministry of Environment should do this or that, but now that you put it on the local level, the responsibility is really higher and they are involved in the actions."⁴⁶ In recent years, other Provincial ministries such as the Ministry of Agriculture and the Ministry of Municipal Affairs have also become involved, playing an important role in implementing programs.⁴⁷

In Quebec, one thing that has made this program more effective is the context of the greater binational basin. People are aware of the importance of the international agreements, especially the 1988 MOU, and are interested in what's going on across the border. This binational interest among citizens has been facilitated by the active leadership of the Quebec CAC chair,⁴⁸ who has enjoyed the cooperative spirit: "The people in Quebec wanted to know what Vermont and New York are doing, and vice versa. We had 250 people at our last public meeting, and it was very, very good. The people really want to see something done."⁴⁹

The Lake Champlain Basin Program has made significant progress with no formal, federal-level international agreement. Instead, the underlying foundation for all of the binational activities is the 1988 MOU and subsequent agreements that have been signed by the states and province. These agreements have been critical in raising the awareness

that the lake and its resource protection issues are truly binational, and have bolstered the commitment to addressing those issues on both sides of the international border. For example, during the approval of the Lake Champlain Aquatic Nuisance Species Management Plan for New York and Vermont, New York representatives advocated that, while U.S. Fish and Wildlife Service Funds (for the plan) could not be spent in Quebec, the province needed to be considered and included.⁵⁰ Likewise for Quebec, the existence of binational agreements with the signatures of the Prime Minister and the Governors has helped them leverage funding for their programs. “The impact is enormous in having an agreement with another country...” explains the Quebec CAC Chair, “it has really helped.”⁵¹

The Causeway Controversy

While most of the binational programs in the basin have operated relatively smoothly, the controversy over the Swanson- Alburg causeway has presented a formidable challenge to international cooperation and goodwill.

Just south of the international border, Vermont State Highway 78 crosses the lake at the mouth of Missisquoi Bay, serving as a major transportation route between Vermont and Quebec. The lake crossing consists of a causeway constructed of sand and fill material spanning the lake, with a short bridge in the middle. Many of the people around Missisquoi Bay (including many tourism-based communities) argue that the causeway contributes to the algae problems because it interrupts the natural flushing effect of the lake and concentrates phosphorous loads in the Bay. The Quebec CAC Chair describes the Bay to be “like a little bathtub with the little opening that they have there.”⁵²

While there are plans to reconstruct this crossing, a potentially endangered species has complicated the issue. Though it is not endemic to the lake, the eastern spiny softshell turtle uses the causeway as habitat, and is listed as Threatened by the State of Vermont.⁵³ A study of the turtle and its vulnerability to bridge reconstruction is currently underway, and tensions are rising within the Basin Program over the issue.

This causeway controversy has put representatives from Vermont’s Agency of Natural Resources in a difficult position, with their lake protection goals conflicting with species protection goals. Since Bay-area residents and businesses have a strong interest in removing the causeway, this dilemma threatens to pit Basin Program participants against each other. While the causeway has become a major issue at Steering Committee meetings, the Committee has not yet taken a position.⁵⁴

In the meantime, local residents around Missisquoi Bay are becoming increasingly frustrated, and the controversy overshadows all other lake-related issues. “It’s very hard to do public CAC meetings as long as this thing is not solved...” explains the Quebec Chair, “I can’t get any other subjects in because it’s the bridge, the bridge, the bridge, the bridge.”⁵⁵ There is even talk of referring the matter to the International Joint Commission (IJC)** . Such an action is sure to be divisive because it would bring in legal

** Established by the 1909 Boundary Waters Treaty, the International Joint Commission reviews water quality and quantity issues along the U.S.-Canada border.

issues related to international waters as well as the authority of an international institution (IJC) down on the Basin Program and its grassroots processes. As the Quebec CAC chair explained, “things get ugly at that point and I don’t want them to.”⁵⁶

The causeway controversy may threaten the otherwise positive progress that has been made towards binational collaboration on Lake Champlain. Ironically, one EPA official views this controversy as a positive: “It’s been kind of unifying in that they’re certainly talking about it and everyone in the area is very interested in it... It’s the issues that both entities have to feel are important to them is what really brings people together.”⁵⁷

The Lake Champlain Basin Program is certainly complicated and has encountered its share of controversy. One of the things that has kept this program together has been the guidance of the binational Steering Committee. While several people have noted that the representation of the Steering Committee could use some improvement, it is also recognized to be an effective backbone that makes the program work. The Vermont Coordinator explains that, “There’s been a lot of trust built up. The Steering Committee is working better than it ever has.”⁵⁸ This is echoed by the Quebec CAC Chair: “The Steering Committee seems to have a grasp on it all... I think it’s amazing what they do.”⁵⁹

ACCOMPLISHMENTS

Despite all of its growing pains related to stakeholder involvement and the development of a truly transboundary approach to lake protection issues, the Basin Program has made some substantial progress in protecting the health of Lake Champlain. In 1996, *Opportunities for Action* established a target of a 25% reduction in phosphorous loads by 2001. Aggressive action to renovate wastewater treatment facilities and improve non-point source pollution controls on agricultural lands has enabled the basin to exceed that phosphorous reduction goal.⁶⁰ Even though it reflects the mitigation of easier targets, exceeding this interim phosphorous goal is a major achievement.⁶¹ Along with this accomplishment, the pending Missisquoi Bay agreement only contributes to the forward momentum of the program.⁶²

Another success of the effort is the development of small, citizen-based watershed groups. The financial and logistical support that the Basin Program gives these groups is one of the fastest growing parts of the program.⁶³ The initial progress in lake quality came largely from higher level planning and financing efforts for activities such as wastewater treatment plant upgrades. Now, the next, more intimate phase of local-level mitigation of non-point pollution sources will require the increased interest of local watershed groups.⁶⁴ These groups will be more effective in influencing changes among individual citizens and landowners on both sides of the international border. A Quebec Ministry of Environment official explains that “the greatest thing we’ve seen is the level of implementation from the local groups. That’s really something magic.”⁶⁵

The current level of interest and commitment from state, provincial and local governments, as well as citizens has also been a major accomplishment of the Basin Program. The engagement of the Quebec government and citizens has been increasing over time, and many of the people who are actively engaged in the Basin Program have brought a great deal of insight and enthusiasm to the effort. This level of grassroots interest and participation provides a strong foundation for continued development of this transboundary effort.

While phosphorous loading in the lake has been the primary focus of the program, other aspects of the basin environment also need to be addressed. This is especially important for maintaining public support.⁶⁶ Other areas of progress that resulted from the Lake Champlain Basin Program include the cleanup of PCBs in New York's Cumberland Bay, the creation of the 311-acre Pike River Ecological Reserve in Quebec, the continuation of habitat restoration and protection programs, and the improvement of recreational amenities in and around the entire lake.⁶⁷

On the programmatic side of things, an important outcome from this program is the development of strengthened relationships between the states and the province.⁶⁸ This occurred on both institutional and interpersonal levels. With the strength of the Steering Committee, the commitments of the resource management agencies, and the interest among citizens, the Lake Champlain Basin Program is poised to take a comprehensive approach to implementing its plans and agreements. Under this approach, the Vermont Coordinator explains that "we're using all the layers and really utilizing all of the partnerships to get things done."⁶⁹

CONCLUSION

On an international scale, the Lake Champlain Basin Program is more of an agglomeration of programs and agreements than it is a single, binational entity. While some aspects of the program are truly binational, such as the Steering Committee, many others are constrained by the international border. As many of the activities and programs have been limited to New York and Vermont, it is important to recognize the role that the Special Designation Act played in developing the structure, resources and understanding that has served as a foundation for much of the binational progress to date. Indeed, formal and informal cooperation and involvement across the international border has been growing over time, as indicated by the forthcoming agreement on Missisquoi Bay, the projected inclusion of Quebec in the management plan, and the potential increased representation of Quebec on the Steering Committee.⁷⁰

After 13 years of activity, the Lake Champlain Basin Program is still a much stronger interstate program than it is an international one. This disparity is largely due to the inevitable bureaucratic and funding barriers that come with an international border, the inability of the program to overcome those barriers early on in the process, and the fact that only 7% of the basin falls under Quebec's jurisdiction. Despite these shortcomings,

binational cooperation and interaction is gaining tremendous momentum in the Lake Champlain basin, and the Basin Program is becoming increasingly recognized as a model for transboundary resource management.⁷¹ Centered around the binational Steering Committee and three local Citizen Advisory Committees, the Basin Program's evolving organizational structure has effectively facilitated communication, coordination and most importantly, resource protection accomplishments in the Lake Champlain Basin. As the Quebec CAC Chair explains: "It was going downhill, but I think that with all that's been done, the three states have done an enormous amount of work and it's getting better. I'm proud of that."⁷²

Lessons

Based on the impressions of people who are intimately involved in the Lake Champlain Basin Program, the following lessons have been learned about transboundary collaboration:

- **A formal, federal-level Treaty is not necessary to have a formal binational organizational structure.** The Basin Program has been able to effectively persist with an overarching MOU along with state-state and state-province agreements that are specific to the issues at hand. So far, these agreements have been respected by the jurisdictions that have signed them.
- **International agreements and MOU's are helpful in mobilizing the participation of governments and individuals.** In Quebec, where the basin covers a small corner of the province, the presence of international agreements have given legitimacy and purpose to the cause of the greater Lake Champlain Basin.
- **It is important to include all significant jurisdictions early in the process.** Having been excluded from the Management Conference ten years ago because of bureaucratic difficulties, Quebec was behind in designing and implementing an action plan for Lake Champlain to complement their existing mitigation activities.
- **It is essential to address potential stakeholders early in the process.** The opposition of the business community and property-rights advocates, who had not been included in the planning process, nearly ended the program.
- **Governmental recognition of an area's importance is helpful in attracting attention, funding, and legitimacy.** While it did not explicitly consider the basin as a binational resource, the 1990 Lake Champlain Special Designation Act, which created the Lake Champlain Basin Program, did a great deal to spur momentum and advance programs on both sides of the border.
- **A well-informed and well-connected coordinating body has been effective.** Despite its limited links to the general public, the Steering Committee has played a major role in leveraging the resources for, and advocating the implementation of resource protection programs.

- **A strong staff is important to coordinate efforts, and provide leadership to the program.** Lake Champlain Basin Program staff have played a major role in keeping the whole program together and moving forward.
- **Visible successes and milestones are important to maintain public support and internal momentum.** By exceeding their five-year goal for phosphorous reduction, participants are optimistic about the future of the program. Likewise, accomplishments such as improved recreational amenities have been helpful in maintaining public support.

Interview Contacts

- **Erik Beck**, Lake Champlain Coordinator, U.S. Environmental Protection Agency
- **Colleen Hickey**, Education and Outreach Coordinator, Lake Champlain Basin Program
- **Kenneth Miller**, Chair, Quebec Citizens Advisory Committee
- **Martin Mimeault**, Quebec Ministry of the Environment
- **Lee Steppacher**, former Lake Champlain Coordinator, U.S. Environmental Protection Agency
- **Micheaela Stickney**, Lake Champlain Basin Program Vermont Coordinator

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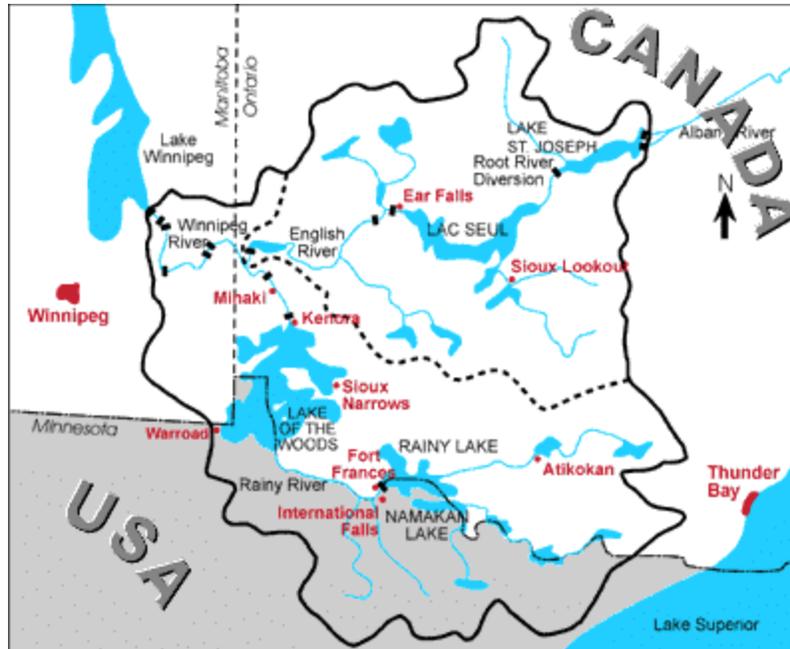
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THE MANOMIN WATERSHED

Manitoba and Ontario, Canada – Minnesota, U.S



From: Canadian Lake of the Woods Control Board

INTRODUCTION

The ManOMin⁺ watershed is an interesting case of transboundary management. This is not a single case with one unified effort working on both sides of the border, but instead is an amalgamation of many activities along the 49th parallel. It is interesting to consider both the individual activities of these groups as well as the increasing interaction among them. While they have each experienced successes, they are beginning to understand that there cannot be a true transboundary effort unless the separate efforts work together and consider the entire watershed as a single system. Leading the charge to bring these separate groups together is the Rainy River First Nation, who hopes to increase communication and cooperation within the entire watershed to improve the health of the ecosystem.

This case provides a number of lessons about working across an international border besides the fact that transboundary management can take many forms and does not have to be a single, unified effort. The activities in the ManOMin watershed illustrate the

⁺ Joe Hunter, Manager of the Manitou Fish Hatchery for the Rainy River First Nation created the word ManOMin to describe the many jurisdictions responsible for management of this area and to illustrate the need for cooperation.

important role that all levels of government play in transboundary management. Federal, state, and provincial officials as well as representatives of the First Nation were vital to the success of the efforts in the ManOMin watershed. Another lesson from this case is the importance of opening lines of communication for any transboundary effort. While this seems a simple act, stakeholders throughout the watershed highlighted open communication with different jurisdictions as one of the greatest accomplishments of all of the efforts in the watershed because this increased communication is leading to a more holistic consideration of the ecosystem.

Why Transboundary Management?

This is a large area geographically, but it does not include a large number of people. The watershed is sparsely populated, yet there is a great deal of cooperation in the region and many stakeholders concerned about the health of the ecosystem.

There are a number of reasons why there is so much cooperation across the border in this seemingly unlikely watershed. The historical presence of the International Joint Commission (IJC) in the watershed is an important factor in encouraging cooperation among jurisdictions. The U.S. and Canadian governments requested the IJC's help in the 1920s due to the fact that there were hydroelectric dams in the region that altered water levels in the lakes and caused a number of water related concerns. These same concerns are a large part of why there is so much activity in the watershed today. The economy is intimately linked to the water bodies in the region, as tourism, fishing, and power generation all depend upon the lakes. In addition, the changes in water levels increase the risk of flooding which can have major economic consequences.

In addition to the long-term presence of the IJC and the economic concerns of the region, transboundary collaboration is occurring in this region due to the efforts of the Rainy River First Nation. Being good stewards of the land and water are a part of the culture of the First Nation, and in recent years they have become an active participant in the region, bringing diverse groups of stakeholders together to improve the health of the watershed.

CONTEXT

Description of the ManOMin Watershed

The ManOMin watershed is a large system that includes a chain of lakes as well as a river. The major bodies of water that make up this watershed include the Rainy River, Rainy Lake, the Namakan chain of lakes, Lac La Croix and Lake of the Woods. The Rainy River makes up the eighty-mile border between the Province of Ontario and the State of Minnesota.¹ The three major lakes in the system, Lake of the Woods, Rainy and Namakan Lakes, each transcend the U.S. Canadian border. The final lake in the system, Lake of the Woods, feeds into the Winnipeg River in Canada,² which begins the Hudson Bay watershed. This is a large area geographically, as the drainage area of just the Rainy Lake portion of the watershed covers 14,900 square miles.³

The entire drainage basin has been named the “ManOMin” watershed by the Rainy River First Nation. This is a complex word with multiple meanings that attempts to describe a complex ecosystem that falls within multiple jurisdictions. There are two nations, two states, a province and a First Nation involved in the management of this area. ManOMin represents all of these jurisdictions as “Man” stands for Manitoba, “O” for Ontario, and “Min” for Minnesota. The word is important to the First Nations in the area, as it means wild rice in their language, Ojibwe. This crop was an essential staple for the survival of their people and needed a great deal of water to thrive.⁴ The term ManOMin will be used throughout this case study to refer to the entire watershed or drainage basin.

Multiple Stakeholders

This is a complex region with many different players trying to manage a single system. The pure number of stakeholders responsible for management of the area is one of the reasons transboundary collaboration had to occur. The traditional management of the ManOMin watershed is closely linked to the land ownership and usage patterns throughout the region. The majority of the land on both sides of the border is privately owned, making comprehensive management of even a single part of the watershed difficult. There is also a small amount of public land, but much of this is managed independently by the states and the province. These public lands include Voyageurs National Park in Ontario, Quetico Provincial Park in Manitoba, and a number of small state and provincial parks. There is also land in this system which is owned and inhabited by both First Nations and Native Americans.⁵

Economic and Ecological Values

The fact that there are so many players involved in the management of this region is not enough to motivate the stakeholders to work together. The economic and ecological values of the region explain much of the reason for the different groups coming together and trying to look at this area more holistically. According to the coordinator of the First Nation’s efforts in this region, “We must be binational because ... all things are connected. What happens in one country affects the other.”⁶ This is clear in terms of both economic and ecological issues in the region.

There are a number of species that must be protected for both the economic and ecological well being of the area. The ManOMin watershed is home to numerous fish species such as the walleye, yellow perch, and northern pike and waterfowl such as the loon, which uses shoreline marshes for nesting habitat.⁷ The region benefits economically from the area’s resources through tourism, including fishing, summer cottages and resorts, and through commercial fishing.⁸ Tourism in the watershed from fishing alone generates over \$10 million annually according to a 1992 Minnesota Department of Natural Resources study.⁹

Not only are the lakes important to the economy because of fishing and tourism, but they are essential to power generation in the region. There are a number of dams on the lakes that fall on both the Canadian and American sides of the border. These dams generate electricity for the region and are an important source of jobs and income for many people living in the area.¹⁰

Ecosystem Stresses

Many of the important species in the watershed are being threatened by traditional management practices on both sides of the border. Some of these threats include poor forest management practices on the public lands in the region, development of land, over-fishing, poor agricultural practices, and increased tourism in the region, especially in Canada.¹¹ Another important stress on the region comes from the hydroelectric dams that are so important to the economy of the area. Water levels must be carefully controlled in order to produce enough power to meet the demand, and this is causing a number of problems for fish and other species that rely on the lakes.

In order to produce reliable power from these dams, it is necessary to alter the natural water levels throughout the system. Both raising and lowering the water levels to produce power negatively impacts species in the system, since fish-spawning habitat is altered and nesting habitat for birds is destroyed.¹² Researchers in the area found that Namakan Lake, which is controlled for power generation, had less abundant and less diverse near-shore aquatic vegetation than Lac La Croix, which is not regulated and has natural water level flows throughout the year. Researchers also found that the aquatic vegetation in Namakan Reservoir is situated in such a way that the winter “draw downs” for power generation often expose and kill much of the emergent vegetation. The destruction of important habitat in the lakes is causing stress to the species that use this system and even causing deaths among some species. For instance many loons and grebes that use these lakes are not able to survive the unnatural changes in water levels that occur each year in the spring and destroy their nests just when they are about to lay their eggs. Pike cannot access their natural spawning area because water levels are held 3 feet below it in the spring.¹³ These stresses on the system are yet another reason that action needed to be taken.

Historical Cooperation in the Watershed – the IJC

Clearly the health of the ManOMin watershed is important to the economic vitality of the area. Due to this fact, there has been interest in the joint management of the Rainy and Lake of the Woods (LOTW) areas for over seventy-five years. While there has been great interest in particular parts of the ManOMin watershed, in the past and even today it has not been managed as a single, comprehensive ecosystem. Instead it has been managed as a number of small, distinct areas including Lake of the Woods, Rainy Lake and the Rainy River.¹⁴

Lake of the Woods

The first concerns about binational management in this region came from changing water levels in the Lake of the Woods in the early 1900s. Canada and the U.S. signed the Lake of the Woods Convention and Protocol in 1925 after a five-year IJC study of the situation. This treaty dealt primarily with the water level issue, as it established both elevation and discharge requirements for the lake. It requires management action only if the lake level climbs above or falls below a certain level. The treaty established two boards to deal with issues on the Lake of the Woods. The Canadian Lake of the Woods Control Board was given daily responsibility for the management of the lake.¹⁵ It is

made up of four members who represent the federal government and the two provinces.¹⁶ The treaty also created the International Lake of the Woods Control Board to ensure the U.S. had adequate oversight if the lake strayed from the acceptable levels.¹⁷ This International Board includes one U.S. member and one Canadian member, as well as engineering advisors for each nation. The Canadian member of the International Board is always one of the members of the Canadian LOTW Board, in order to maintain coordination between the two boards and to prevent duplication of efforts. The International Board does not become involved in the activities of the lake very often since it rarely exceeds the established water level limits.¹⁸

Rainy Lake

The two governments expressed interest in Rainy and Namakan Lakes early as well, asking IJC to consider managing these lakes in 1938. In 1941 the IJC established the International Rainy Lake Board of Control to look at water levels of the lakes. This board had a slightly different task than that of Lake of the Woods because the natural flows of these lakes were altered due to the use of the water in the lakes for hydroelectric power. There are two dams in this system, one at Kettle Falls and one at International Falls – Fort Frances. The Board’s role was to establish and enforce “rule curves for the water levels of Rainy and Namakan Lakes to preclude the occurrence of emergency conditions.”¹⁹ The Board still has this charge today and defines the upper and lower water level limits within which the dams must operate. Like the international LOTW Board, the IJC International Rainy Board of Control includes two members, one from each nation.²⁰

Rainy River

Historically, neither the International LOTW nor the Rainy Lake Control Boards had any charge concerning management of the Rainy River, and it has not been a top priority for the IJC. They did establish the International Rainy River Water Pollution Board to monitor water quality on the river. This Board looked at discharges coming from the dams into the river but did not give much consideration to impacts on the river from changing water levels.²¹ There was little consideration for the river because the IJC was not looking at the entire system but instead focused its energy on the individual lakes. There are very few people who reside along the Rainy River in comparison to the number of people who depend upon the lakes in the region which may help explain the lack of IJC activity on the river.²²

APPROACH TO TRANSBOUNDARY MANAGEMENT

The active involvement of the IJC in the basin helped set the tone for binational cooperation in the region.²³ This backdrop of transboundary management has allowed new efforts to rise relatively easily, and cooperation is the rule in the watershed, rather than the exception. Some of these efforts revolve around the IJC, while others, such as the Rainy River First Nation’s activities, do not rely on this framework. Each of these new efforts is structured slightly differently, and they use their unique structure to help increase coordination and move the project forward.

Activity Surrounding IJC Boards

Although it is still active in the region, the IJC is no longer the only actor in the ManOMin watershed. The 1990s brought a deluge of activity to the region. In the late 1980s and early 1990s, there were a number of important studies, many by Voyageur National Park, looking at the effects of the regulation of water levels on both Rainy and Namakan Lakes on aquatic vegetation, fish, and other species. These studies sparked interest among citizens in the region and led to an extended look at the management of the lakes. In addition, a First Nation became actively involved in protecting The Rainy River watershed, a sub-basin of the ManOMin watershed and began to push for a more holistic treatment of the system.

International LOTW Board

Inherent in any IJC board is transboundary collaboration. The ultimate charge of the IJC is to “prevent or resolve disputes” between the two nations regarding boundary water issues.²⁴ These boards always include equal representation from each nation, forcing the nations to work together to manage the resource. The International LOTW Board follows this general model with members from each nation as well as staff to support the board members. The International LOTW Board saw little controversy and little action in the 1990s, as the Canadian LOTW Board maintained jurisdiction over the lakes 95% of the time, as water levels rarely exceeded the acceptable limits.²⁵

Because there is little activity surrounding the LOTW, the International Board is quite small and relies heavily on personal interactions between the members and their small staffs. There is a strong personal relationship among the two staff members, and this assists immensely with binational work. According to the Canadian Engineering Advisor, “We have very good relations working across the border, but those are the sorts of things that can change overtime with the certain individuals who are in place.”²⁶

While the people can change, the basic structure and process remains the same, and this helps maintain the institutional memory of the Boards. The LOTW boards have been in place with the same structure since the 1920s. The mission of the IJC facilitates joint management because it encourages parties to work towards a common goal rather than just for the interests of their own organization or jurisdiction. “One of the basic tenants of an organization like IJC is probably important, too. It is pointed out to each member of a board that the IJC

Significant Milestones

- 1925** - U.S. and Canada sign the Lake of the Woods Convention and Protocol, which creates the LOTW Boards.
- 1941** - IJC establishes the International Rainy Lake Board of Control
- 1991** - International Steering Committee formed.
- 1993** - International Steering Committee submits recommendations to IJC
- 1997** - Rainy River First Nation begins their Watershed Program
- 2000** - IJC alters the water levels for Rainy and Namakan Lakes

appoints them not to represent their employer or country, but they were appointed because of their knowledge, expertise, and experience.”²⁷

While there is a formal structure under which they work, the board is actually not run very formally since it is so small. According to the U.S. Engineering Advisor, “The decision process within the International LOTW Board is fairly...informal...because all that you’re dealing with here is two members and two staff/support people.... We talk and we make decisions and agreements, typically on conference calls.”²⁸ There are some decisions which cannot be made solely by the board members and staff but must go through the IJC before they can be finalized. In these cases the Board members and staff make recommendations to the IJC. Generally the IJC follows the suggestions of the Board members who are more familiar with the particular issues in the region than IJC staff.²⁹

Rainy Lake Board of Control and the International Steering Committee

Much of the activity and controversy of the 1990s in the ManOMin watershed surrounded the IJC Rainy Lake Board of Control. After the extensive studies that raised concerns about the effects of water level changes on species in the lakes as well as economic concerns about impacts of these low levels on fishing and tourism,³⁰ a new transboundary effort, the Rainy Lake and Namakan Reservoir Water Level International Steering Committee, emerged to reconsider the management of the water levels for both lakes.³¹ The International Steering Committee had no direct power to change the regulation of water levels because the lakes were under the control of the IJC Rainy Lake Board. While the new International Steering Committee could not directly change management of the lakes, it hoped to influence the decisions of the Board.³²

The evaluation of the water levels and the IJC management of Rainy and Namakan Lakes began with a few citizens from International Falls, Minnesota. These citizens were members of the Citizen’s Council for Voyageurs National Park and were well aware of the recent studies that raised concerns about species in the lakes. While the citizens wanted change, they needed help from government actors and approached the resource agencies in the region, such as Minnesota Department of Natural Resources (DNR) and the Ontario Ministry of Natural Resources (MNR), for assistance.³³ In 1991 the Rainy Lake and Namakan Reservoir Water Level International Steering Committee formed with the goal of “analyz[ing] and mak[ing] recommendations regarding the management of water levels of the Namakan Reservoir system and Rainy Lake.”³⁴

Principal Transboundary Actors: International Steering Committee Membership

- Employee of the Minnesota Department of Natural Resources
- Employee of the Ontario Ministry of Natural Resources
- Representative of Boise Cascade
- Private Citizens

Role of Government Officials in the International Steering Committee

The role of government in this ad hoc committee cannot be overstated. The co-chairs for the group were both government employees and while they were not acting in their “official” capacities at the beginning of the process, by the end of their study the

respective agencies did recognize and sanction their work.³⁵ The Committee relied heavily on the co-chairs, who took care of many of the logistical and administrative issues and provided resources for data collection, analysis, and report writing. According to the American co-chair, “most of the participation by the Minnesota DNR and Ontario MNR was in-kind participation.”³⁶

Organizational Structure

While the International Steering Committee was an ad hoc group that came together for a limited period of time in order to accomplish a single goal, they had a fairly structured process. The Co-chairs ran regular meetings with agendas, minutes, etc. There were specified members of the committee and designated alternates in case an original member could not be present. The Canadian co-chair felt that this formal structure was essential to accomplishing their overall goal, as committee members did not all know each other and there were too many members to rely on a completely informal process.³⁷

While they did set up a formal process with official representatives, none of these individuals were required to participate, as membership in this group was completely voluntary.³⁸ This helped the process tremendously because the majority of those involved wanted to do what was best for the ecosystem and the community. While the group was made up of volunteers, they did make a concerted effort to bring in representatives who reflected the differing views present in the basin.³⁹ The existing transboundary infrastructure provided by the IJC Boards made collaboration across the boundary both necessary and natural. Membership had to be transboundary from the outset in order to gain credibility with the IJC Board. The Steering Committee included individuals who represented: both federal governments, the relevant provincial and state governments, private citizens, and Boise Cascade, the company which owned the power generating facilities in the region.⁴⁰

Factors that Influenced Effectiveness of the Effort

The help of government employees, the voluntary nature of participation and the diverse membership of the group were not the only factors that led to a successful process. The fact that the water was allocated equally between the two nations made transboundary collaboration easier because the group was concerned with overall water levels rather than apportionment issues. Each side had an equal interest in the issue of the water levels on the lakes. According to the Canadian co-chair, “We were looking at an environmental and a level issue which affected both sides equally.”⁴¹ This fact facilitated cooperation because one side was not more invested in the project than the other. Another reason the Steering Committee was able to work effectively together was the fact that they had a specific goal in mind and a single question to answer. The group knew its purpose and more importantly used joint fact-finding to find the answer to its question. They did not assume a specific answer prior to the extensive studies and were able to learn together through these objective scientific studies. According to the Canadian co-chair of the group this made all the difference in bringing the individuals together as “pursuit of the truth is a very unifying force.”⁴²

Early Challenges

While there were a number of factors that helped the different parties work together, there was not full agreement on what should be done about the water levels, making it more difficult for the entire group to come to a consensus. Membership in the Steering Committee was entirely voluntary, but the company that would be affected by any changes, Boise Cascade (Boise), felt obliged to join the process due to a Federal Energy Regulatory Commission (FERC) decision a few years earlier. Prior to 1987, the Boise power generating facility was not licensed under FERC, as it was grandfathered because it opened around 1910. In the 1980s there was a push to try to license these older facilities, so Boise applied to FERC for a license for their facilities in the ManOMin watershed. According to a Boise employee, FERC granted the license, but “one of the articles that they put on our license was that we would be required to do a water level management plan in conjunction with Voyageurs National Park, the Minnesota Department of Natural Resources, and others.”⁴³

Boise saw the formation of the International Steering Committee as a perfect opportunity to fulfill this FERC requirement. While they attended meetings and even gave financial support to the board, throughout the process, the Boise representative maintained the position that “we were satisfied with the rule curve the way it was.”⁴⁴ This position was in part due to a desire to maintain generating capacity, as the demand for electricity was greater than Boise’s capacity to generate power at the International Falls facility;⁴⁵ but was also due to a concern that changing the curves would increase the risk of flooding, making the company liable for any flood damage.

Boise did not try to advocate or push for its position within the Steering Committee but instead attended the meetings, “kept a low profile,” and stayed up to date on possible outcomes of the group to anticipate any changes to the rule curves.⁴⁶ While Boise was participating in the process, they understood that there was not much of an opportunity for the group to reach consensus due to “fundamental differences” between the members of the Committee and the company.⁴⁷ They preferred to defer to the authority of the IJC rather than negotiate with members of the Steering Committee. Boise stated they would follow any suggestions of the IJC, and did follow through with this promise later in the process.

The New Rule Curves

The entire International Steering Committee studied the issue of the rule curves, the regulated water levels on each of the lakes, for about two years and published an extensive report with recommendations to the IJC in November 1993. The original hope of the group was to work by consensus and to come up with a set of recommendations that all members of the Steering Committee could accept. This did not happen, as the representatives of industry could not agree to the final recommendations and broke from the group. The Steering Committee was sure to clearly state that the companies did not agree with the recommendations to change the rule curves for both Rainy and Namakan Lakes, and Boise provided its own recommendations to the IJC.⁴⁸

The new curves proposed for Namakan Lake were a much greater departure from the original regulations than those proposed for Rainy Lake because there were more ecological concerns on Namakan. This worked well for Boise, as their facility was on Rainy Lake.⁴⁹ Once the Steering Committee gave their recommendations to the IJC, the Commission spent over five years studying the issue before making a decision to change the rule curves on both lakes. They did not consider all possible rule curves but instead confined their study to the new and proposed curves.⁵⁰ In January 2000 the rule curves were changed.⁵¹ The new curves reflect most of the concerns of the Steering Committee, but the IJC did make minor alternations to take into account all concerns in the basin.⁵² The Steering Committee hopes to continue monitoring efforts of the effects of the new rule curves, but has disbanded as they accomplished their original goal.⁵³

Rainy River First Nation

The situation in the Rainy River is different than what is happening around the lakes in the region because it is not framed by active IJC involvement. While the IJC has had a Rainy River Water Pollution Board in the past, the current status of the Board is unclear.⁵⁴ The low priority of the River was clear in the IJC deliberations over changing water levels of Rainy and Namakan Lakes. There was only brief mention of the impact on the river in this discussion⁵⁵ even though some stakeholders requested a comprehensive study of the downstream impacts on the river before altering water levels.⁵⁶ In recent years the IJC has started to consider the need for a more holistic approach to watershed management along the border. They combined boards in several watersheds, including the Red and Souris River watersheds. The IJC has not yet combined their boards in the ManOMin watershed, but they intend to look at that possibility in the near future.⁵⁷

While the IJC has not been particularly active in recent years in the Rainy River, there has been a great deal of activity in this part of the watershed. In the early to mid 1990s the Rainy River First Nation, a native community of 300 people living along the river, began to express concerns about the health of the river. In 1997 they started the Rainy River Watershed Program in order to “protect, conserve, and revitalize the Rainy River drainage basin.”⁵⁸ The program began with a few small projects that reached across borders to bring in all stakeholders for that particular issue, and today includes thirty different projects that include parties in both the U.S. and Canada. These projects bring together local businesses, different levels of government, private landowners, and of course members of the First Nation.⁵⁹ Those working for the First Nation feel that the fact that it is viewed as a separate government entity has made it more effective in the region and helped them bring together these diverse interests. According to the Rainy River Watershed Program Coordinator, “The main thing that has helped us is the fact that we are a first nation, and we are seen as independent.... We are seen as a different sort of political animal, so we can work at a federal, provincial, and local level.”⁶⁰

To this point the Rainy River First Nation has focused on projects in the Rainy River watershed that fulfill one of their three main objectives of education, monitoring and rehabilitation. For example the First Nation has an environmental education project called River Watch that involves 300 Canadian and American seventh graders each year.

This program teaches the students about stewardship of rivers but also collects data on the health of the Rainy River and its tributaries. In order to fill the monitoring objective, the First Nation runs programs such as the E.coli program in which they partnered with Health Canada to “locate faulty sewage disposal systems”⁶¹ along the Rainy River. Projects that fall under the rehabilitation goal include working with farmers in the region to “control cattle access to Rainy River tributaries by planting trees, and installing electrical and barb wire fences, cattle ramps and water pumps.”⁶²

While they hope to make a direct impact on the health of the river through many of these projects, they also understand the importance of establishing lines of communication among the many different jurisdictions for the future health of the river. They work tirelessly to foster these networks, as they understand that everything is connected and must be considered as a system. The Watershed Program Coordinator explains, “I see watershed management on an applied basis as being a communications process. What we are really trying to do when we do watershed management is facilitate communication between the stakeholders.”⁶³ In the last two years, a major activity of the First Nation has been an annual conference that brings the entire watershed together to talk and to begin to work together. They have dubbed this conference the ManOMin Watershed Conference in order to illustrate the importance of each of the different jurisdictions in management of the area.

Unique Organizational Structure of the Rainy River First Nation Efforts

While it is now several years old, the First Nation’s Rainy River Watershed Program staff and core funding are still quite small, making it difficult to accept unlimited projects. While the staff is small, ranging from two to twenty people depending on the season, they are able to accomplish a great deal and are currently managing thirty projects in the basin. The organizational structure of the effort reflects both the small number of staff and the cultural traditions of the First Nation. In addition to the staff, there is a Watershed Steering Committee that helps determine which projects to implement. This group is made up of community members, Band staff, and watershed program staff. It meets regularly to discuss new projects and to determine the direction of the program. While the watershed program staff implements the different projects with the help of the Steering Committee, they are responsible ultimately to the entire community. According to the Watershed Program Coordinator, “The organizational structure is like a circle. In the very center of that is the community. There is an outside ring and that is the chief and council. The ring outside that is the Band staff and the ring outside that would be say the watershed program.”⁶⁴ Normally the outer ring, the watershed program, reports to the Band staff who then reports to the chief and council. On particularly controversial issues the watershed program might go directly to the chief and council or even to the community. On all issues, they report ultimately to the community because they are in the center of the circle.

While there is a core staff that works on the watershed projects for the First Nations, all of their programs involve coordinating a diverse set of stakeholders from both sides of the 49th parallel. The First Nation takes the lead on the projects but works to include all stakeholders who might be able to assist the project and improve the overall health of the

ecosystem. The First Nation understands that no project can take place in a vacuum but must include all relevant stakeholders. The Watershed Program Coordinator sees this as the most challenging part of running the watershed program. “The hard part is trying to pull together the stakeholders.... Sometimes it is difficult to get stakeholders motivated to be involved.”⁶⁵

In order to have an effective overall effort and to successfully run each project, the First Nation ensures that each project they accept falls under the specified goals of the program. Before starting the program, the Band spent time figuring out who they were and what they wanted to accomplish. These goals guide all projects and keep the effort focused on its long-term objective of “increasing public awareness and involvement, monitoring and inventorying potential impacts and rehabilitating areas of concern.”⁶⁶

The First Nation is considering expanding its work because it has been asked to begin many other projects in the basin, but they have a small staff and small core budget and cannot coordinate an unlimited number of projects. The First Nation wants to ensure that they do an excellent job with the projects they have, rather than taking on more than they can currently run effectively. They have been approached by other stakeholders and asked to expand the geographic area that they are working in, for instance including the rest of the ManOMin watershed in their projects. Again the First Nation decided to concentrate their efforts on the Rainy River basin in order to effectively implement these projects. The one area where they have widened the scope of their projects is the ManOMin Watershed Conference which highlights the interconnectedness of the entire basin and opens lines of communication among stakeholders throughout the region.⁶⁷

ACCOMPLISHMENTS

The efforts in the ManOMin watershed have resulted in a number of significant accomplishments. The IJC Boards established the atmosphere of cooperation that facilitated the formation of many other efforts in the region. The International Steering Committee successfully brought together citizens and governmental officials to consider and rectify a local concern. The Rainy River First Nation raised the profile of the river and helped open lines of communication throughout the watershed which will hopefully lead to improved coordination among the separate efforts.

Lake Boards

The Lake Boards have been active in the region for over fifty years and have established a climate of cooperation between the U.S. and Canada. According to the IJC Public Information Officer, “We have helped build the base for binational cooperation and have helped develop the relationships across the border at the working level.”⁶⁸ Not only did the IJC establish the necessary conditions for cooperation, but its boards also provide vital information to the public as well as a forum for citizens on both sides of the border to raise issues and concerns about the management of the lakes. The Rainy Lake Board considered in-depth the concerns raised about the rule curves and implemented a change in the management of both Rainy and Namakan Lakes that balances the many diverse

local and regional concerns. In addition to process-oriented accomplishments, the Boards have been successful from what the Canadian advisor calls an “engineering water resource management perspective.”⁶⁹ For instance the LOTW Boards have been able to keep water levels within the prescribed zones over ninety-five percent of the time. The Boards are able to control water flows in order to reduce flooding risk to the residents of the region while also providing recreation and fishing opportunities that are essential to the economic viability of the region.⁷⁰

International Steering Committee

At first glance, it seems obvious that the Steering Committee was extremely successful because it accomplished its goal of studying and ultimately changing the regulations of water levels of Rainy and Namakan Lakes. While this is an important accomplishment, some believe that completing the process of studying the rule curves and making recommendations while including so many differing local concerns was the greatest accomplishment of the group. The Canadian co-chair explained that the issue of the rule curves was a “grassroots environmental issue for local people which was not being addressed at higher governmental levels.... So the local people took it upon themselves to look at it and sought the participation and assistance of government...and industry. There was enough common interest there to motivate everybody to cooperate to look at the question together even though they suspected they might have differing views. That process was able to sustain itself to a conclusion even though it was not consensus.”⁷¹ The Steering Committee successfully tackled a difficult issue that affected many people on both sides of the border. Despite the very different opinions of what should be done on these lakes, they were able to come up with a solution that satisfied, at least in part, most of the local stakeholders.⁷²

Rainy River First Nation Watershed Program

The Rainy River First Nation has enjoyed a great amount of success so far with its watershed program. They have implemented thirty projects throughout the basin and hope to both improve these projects and begin more in the future. Many of these projects, such as the education of farmers concerning limiting cattle’s access to the river, have led to direct improvements in the health of the Rainy River. Their work with farmers on nine separate projects led to the rehabilitation of 8.5 km of the Rainy River and its tributaries. Many of the monitoring and educational programs may not have such direct results, but certainly lead to improvements in the long-term health of the ecosystem.

While the work of the First Nation has led to direct ecological benefits in the area, both the Chief and the Watershed Program Coordinator for the First Nation consider their ability to facilitate communication among stakeholders as their greatest success. Members of the First Nation understand that this communication is the key to full rehabilitation of the Rainy River because they cannot clean up the river alone but must work with other stakeholders in the ManOMin watershed.⁷³ The Chief of the Band feels that opening the lines of communication is the most important role for the First Nation, as all stakeholders must understand the interconnectedness of the region.⁷⁴

CONCLUSION

While there is no single, comprehensive management plan for the ManOMin watershed, a great deal has been accomplished, and there is a concerted effort to open the proper channels of communication to help the separate efforts begin to work together. For instance there is a great deal of coordination among IJC Boards because membership on the LOTW and Rainy Lake boards overlaps. The IJC is even considering combining its boards in the region to further improve binational management, as it has already done in other watersheds.⁷⁵ While combining the boards would improve coordination, this would not reach all transboundary efforts in the watershed, such as those of the First Nation. The Rainy River First Nation is taking its own steps towards improving communication and coordination throughout the watershed by hosting the annual ManOMin Watershed Conference “to promote cooperation and understanding of the boundary waterways.”⁷⁶ While there is still a long way to go in this region before there is a unified effort at ecosystem management, they are taking important steps in this direction. The existing efforts have improved the health of parts of the ecosystem, but they most come together to manage the entire system binationally if they are going to protect the entire watershed.

Lessons Learned

The successful efforts in the ManOMin watershed illustrate a number of lessons about transboundary resource management in general.

- **Individuals play a vital role in facilitating transboundary collaboration.** The IJC Boards are effective in this watershed because the Canadian and American staff members respect each other and work well together.
- **Efforts can build on an existing transboundary infrastructure.** The International Steering Committee did not try to go around the IJC but worked within the existing infrastructure to accomplish their goal of altering the management of Namakan and Rainy Lakes.
- **Government officials can be an important resource.** The International Steering Committee benefited from the in-kind support and leadership of the two chairmen, who were government employees.
- **An organizational structure is helpful.** While the IJC Board members did much of their work informally, they do work under a formal structure. Both the International Steering Committee and the First Nation imposed an organizational structure to facilitate their work.
- **Opening new lines of communication can encourage stakeholders to take a more holistic approach to management of a region.** While the First Nation has accomplished important ecological results, they believe their greatest

accomplishment is increasing communication in the larger watershed. This communication is leading to more consideration of the entire ecosystem.

- **A single, unifying goal can facilitate collaboration.** Members of the International Steering Committee were able to work together effectively because they focused all of their energy around the single goal of influencing the IJC management of the water levels in two lakes.
- **An effort can benefit from diverse representation.** Although Boise Cascade did not agree with much of the work of the International Steering Committee, they had a large stake in the outcome of the effort and needed to be included in order to lend legitimacy to the Committee's work.
- **Native Communities can be an asset to transboundary efforts along the 49th parallel.** The Rainy River First Nation has proven to be an important actor in the ManOMin watershed. Their participation in the region has enhanced transboundary collaboration.

Interview Contacts

- **Frank Bevacqua**, Public Information Officer, International Joint Commission.
- **Bill Darby**, Co-Chair International Steering Committee, Ontario Ministry of Natural Resources
- **Ed Eaton**, U.S. Engineering Advisor to International LOTW Board, U.S. Army Corps of Engineers
- **Jim Leonard**, Chief, Rainy River First Nation
- **Jennifer Mercer**, Watershed Program Coordinator, Rainy River First Nation
- **Mike Romslo**, Steering Committee member, Boise Cascade.
- **Rick Walden**, Canadian Engineering Advisor to International LOTW Board, Environment Canada

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OKANAGAN RIVER BASIN

Washington, U.S. – British Columbia, Canada

INTRODUCTION

The transboundary Okanagan River winds through topography most expect to see in Utah or Nevada. Relative to other Canadian climates, it is little wonder that tourists flock to the basin every year from all parts of Canada. The basin's warm climate offers respite from Canadian winters, and the semi-arid conditions offer farmers in the U.S. a large number of growing days. Unfortunately, the rapid development in Canada and the drive to increase apple yield in the U.S. have discovered the basin's limiting factor: water.

Like many experiences in the Pacific Northwest, the case of the Okanagan River Basin is a story about water and fish. During the 20th century, dozens of anadromous fish populations that spawned and reared in the three large natural lakes along the Okanagan River[†] were sacrificed in the name of flood control, power, and irrigation benefits. Over time, the region's values have shifted toward protection of the waning viability of at-risk species, especially Okanagan sockeye. This particular species has a great deal of meaning to the native peoples in the area and persists as the last anadromous salmon stock in the Canadian Okanagan.¹

Existing collaborative infrastructure, such as the 1964 Columbia River Treaty, creates opportunity for the two countries to harmonize efforts to address this problem. The primary motivation for attempts at



[†] Apropos for the focus of this case, readers should be aware that Okanagan is the Canadian spelling of the word. After first stumbling into the valley in 1811, white trappers had no fewer than 50 spellings for the “Oakinackken” (Autobee 1996). The common U.S. spelling, for example, is Okanogan. I will use the “Okanagan” throughout this document. For the purposes of this case, the Okanagan Basin includes the Similkameen River drainage, the largest tributary to the Okanagan.

transboundary management has been, and continues to be, sockeye salmon and the very water it lives in.² Unfortunately, efforts in the basin operate at different spatial scales and are administered by unrelated agencies. The compelling crisis posed by the continued decline of sockeye in the basin, however, has pushed resource managers to consider new, innovative possibilities.

Why transboundary management?

In the Okanagan Basin, there is some activity in the U.S. and Canada, and much of it recognizes the value of transboundary collaboration. Unfortunately, there seems to be little recognition or relationship between them. Scientists widely recognize the necessity of managing for this stock across the international border.³ The Okanagan sockeye lives out a complicated life history across an international border, between freshwater and marine environments. Okanagan sockeye require passable migratory paths and spawning grounds in the U.S. just as much as clean lentic habitat (lakes) in Canada for rearing. Argues one fish biologist, “We truly have to overcome agency fragmentation and agency inertia and find ways of achieving more integrated decision making about this particular stock...[we need] better land-use practices in support of conditions that will increase its long term probability of persistence.”⁴ In short, operating on just one side of the border will not ensure the success of this species.

CONTEXT

The Okanagan River flows from its headwaters near Armstrong, British Columbia, for almost 140 miles (225 kilometers) to the international boundary between the United States and Canada. Once it crosses the border, it flows another 5.6 miles (9 kilometers) to its confluence with the Similkameen River, and then roughly another 140 kilometers into the Columbia River between the Wells and Chief Joseph dams. While in Canada, the Okanagan River links three major lakes—the Okanagan, Skaha, and Osoyoos. All told, the entire subbasin region covers more than 8,200 square miles (5.25 million acres 21,000 square kilometers), with 70 percent of the drainage in Canada (5,700 square miles).⁵

Ecosystem description

The region’s unique ecology is shaped by a combination of the geology, geography, and climate. This area emerged from the last ice age as a wide valley lined with fertile bench-land terraces. When the last glaciers finally receded, they left finger-like depressions now filled by the lakes of the Okanagan Basin. The Coastal and Cascade Mountains cast a rain shadow on the basin, giving it a dry climate. The interior portion of the Okanagan is considered true desert—it receives about eight centimeters of rain annually.⁶ The open waters of the Okanagan’s finger lakes moderate local temperatures, however, cooling the air in summer and warming it in winter.⁷

The Okanagan Basin is a unique habitat of international importance. “The peculiar geographic and climactic tapestry weaves together diverse habitat elements in close proximity,” writes one Canadian conservation group.⁸ Wetlands, grasslands, rocky

outcrops, and other landscapes support a wide array of plant and animal species. It is home to almost two dozen species of plants and animals that are currently listed in Canada as nationally Threatened, Endangered, or Vulnerable. A full one-third of *all* Red-listed species[†] in British Columbia reside in the Okanagan.⁹ In fact, many of these species are only found in this area. Eight species of invertebrates are found nowhere else in the world.¹⁰ In addition, some species persist in the Okanagan Basin in increasing isolation from the rest of their range, contributing to the species' genetic diversity.¹¹

Furthermore, the Okanagan River watershed is a vital link for many migratory species that utilize it for only part of the year. It supports one of only two viable populations of sockeye salmon left in the entire Columbia Basin.¹² The Okanagan Basin is an internationally important ecological corridor for migratory megafauna, as well. Species such as mule deer utilize the north-south corridor created by the Okanagan Basin that connects the dry landscapes of British Columbia's interior with the grasslands to the south.¹³ In addition to salmon and megafauna, this corridor is a crucial part of the flight path for many species of birds during annual migrations between summer and winter ranges.¹⁴

Human Communities

The basin has also long been a home for native peoples. For centuries before European settlement, the Okanagan was home to a number of tribes, including the Northern and Southern Okanagan and the Colville. The tribes moved with the seasons: picking berries and fishing in the spring and summer and deer hunting in the fall.¹⁵ Relations between tribes were relatively peaceful.¹⁶ Based on their long connection with this place, area tribes share strong ethnographic links with each other and strong cultural, historical, and subsistence links to this stock of fish.¹⁷ Since this is the last remaining anadromous run in the Canadian Okanagan, a great deal of significance rests on the survival of this species.

Human use

Although the Okanagan serves as an ecological corridor, human use of the basin is anything but contiguous. The basin simply *looks* different on either side of the border.¹⁸ On the one hand, the Okanagan region is one of British Columbia's most densely populated regions, with one of the fastest growing populations in Canada, exploding from 195,000 in 1976 to almost 400,000 today.¹⁹ On the other hand, Washington's Okanagan has been called one of the last outposts of frontier life and its population is as disparate as that image connotes—the entire Okanagan County, of which the basin is less than 67 percent, has only 38,000 residents.²⁰

Urbanization

The Okanagan Basin is rapidly urbanizing. In 1969, the Canadian federal government and the Province of B.C. began a study to develop a comprehensive framework for the development and management of water resources for the social and economic growth in

[†] British Columbia's Conservation Data Centre lists three classes of species: Red-list (extirpated, endangered, threatened, or are candidates for such status), Blue-list (vulnerable indigenous species or subspecies of special concern), and Yellow-list (secure).

the Okanagan Basin.²¹ Although the study acknowledged that the rate of growth was unpredictable, the valley's economy and population surpassed the study's 50-year predictions in a mere 25 years.²²

The South Okanagan Basin in particular has attracted settlement from throughout Canada. The valley is one of Canada's warmest areas, drawing new residents at a rapid pace. Development to accommodate the growing population base meets with few limiting constraints since over 85 percent of the Canadian Okanagan land base is in private ownership.²³ Even the lands controlled by the province, called Crown lands, show signs of stress: weed invasion, off-road vehicle use, and livestock grazing threaten the health of the land. New development, roads, and other rights-of-way further stress the ecosystem by fragmenting Crown lands.²⁴

Canada's Okanagan Basin is an urban area. Even with the designation of Snowy Provincial Park in January 2001,²⁵ the absolute proportion of land protected in the Okanagan Basin is less than five percent. In response to a question of why there is not more protected land in this popular valley, a provincial land-use official said, "In some areas [like the Okanagan], there's just been too much land already privatized."²⁶

The result of available land for development, fueled by rapid population growth, is a rapid physical expansion. In an area with little rainfall, that leaves the Okanagan River to shoulder the basin's water needs. As a resident fish biologist observed, "Human populations are increasingly coming into direct competition with the fish for the very substance of life."²⁷ Development also fragments the diverse tapestry of habitat within the valley and severs the ecological corridor. Many of the threatened and endangered species rely on the diversity of the basin's habitats to survive, seasonally alternating use of a particular type.²⁸

Irrigated agriculture

The land-use patterns along the Okanagan in the U.S. reflect that the basin's climate and topography are not as unique to Americans as they are to Canadians. Instead of droves of people flocking to live in the Okanagan, the largest landowners in the U.S. portion of the basin are the Colville Confederated Tribes and the U.S. Forest Service. Forestry, grazing, and irrigated agriculture are the dominant land uses.²⁹

Although privately owned land is less than a third of the Okanagan landbase in the U.S., it consists of almost all of the ecologically significant riparian habitat along the river itself, contributing sediment and excess nutrient runoff to the waterway. The availability of water shaped by the history of the valley. In 1910, the first authorized U.S. Bureau of Reclamation dam in Washington State was built in the Okanagan Valley, primarily to irrigate apple orchards.³⁰ Irrigation opportunity explains much of the land distribution in the U.S. Okanagan.

River impoundment

Water impoundment projects forever changed the functioning of this ecosystem. For 100 years, dams were constructed to meet human needs for irrigation water, municipal use,

hydropower, and flood control. These dams altered the flow regime of the river and presented impassable obstacles to anadromous fish stocks. Water diversions on the U.S. side have left reaches of tributaries to the Okanagan, such as Salmon Creek, dry during summer months.³¹ Where diversions do not dry out the streambed, they present physical barriers to migratory fish. For example, a diversion dam above Oliver, B.C., between the Osoyoos and Skaha lakes, is the upper terminus for migratory fish on the Okanagan. On a related note, the Similkameen River is impassable at Enloe Dam, an abandoned power generation facility 8.8 miles above the confluence with the Okanagan River. This dam blocks access to more than 95 percent of the anadromous fish habitat in the Similkameen River, the Okanagan's largest tributary.³²

Changing regional and national values in both countries create tension surrounding allocation of the finite water resources in the region. In both the U.S. and Canada, threatened and endangered species have legitimate claims on instream flows or ecosystem services based on the presence of water in the river. When water supplies run low, many perceive a trade off between humans or fish and anger erupts. A NMFS spokesman aptly summarized the fundamental tension: "Fish need water. Farmers need water. Unfortunately they tend to need it at the same time."³³

Existing Transboundary Collaborative Infrastructure

A complex tangle of international treaties, legislative mandates, and oversight authority provide opportunity for transboundary interaction to resolve many of these shared problems. First, the U.S. Congress passed the Pacific Northwest Electric Power Planning and Conservation Act of 1980, which created the Northwest Power Planning Council. The Act directs the Council to prepare a program to protect, mitigate, and enhance the fish and wildlife of the Columbia River Basin that have been affected by the construction and operation of hydroelectric dams. NPPC must balance these needs, however, while also assuring the Pacific Northwest an adequate, efficient, economical, and reliable power supply. The Act also directs the Council to inform the public about fish, wildlife and energy issues and to involve the public in its decision-making.³⁴

Secondly, the Act has been recently interpreted by the implementing agencies in line with the Columbia River Treaty of 1964 (CRT). The CRT facilitates cooperative resource development and fish and wildlife mitigation for the *entire* Columbia River Basin. In effect, these mandates require the NPPC to treat the Columbia River Basin as a holistic system, including the portions in Canada.³⁵ The CRT itself required Canada to provide 15.5 million acre-feet of usable storage for flood control in the U.S. by building three dams on the Columbia River mainstem. A fixed amount of money is paid annually to Canada for the use of their land for water storage. Canada created an agency similar to NPPC, called the Columbia Basin Trust (Trust), to manage these monies. Although a significant proportion goes to socioeconomic development, some funds are spent on fish and wildlife programs.³⁶ Nevertheless, the Trust and the NPPC have convened a series of international workshops on ecosystem management in the Columbia River Basin.³⁷ The most recent workshop, entitled *Toward Ecosystem Management in the Upper Columbia River Basin*, was held in Castlegar, B.C., in April 1998. Over 400 individuals, most of

who were government land managers, and 40 organizations from throughout the Upper Columbia were in attendance.³⁸

Thirdly, the Pacific Salmon Treaty (PST) specifically names Okanagan sockeye. The PST, both the original 1985 version and the amended 1996 version, was the first serious attempt to settle the disputes popularly known as the U.S.-Canada “salmon wars.”³⁹ The PST calls for the three parties, the U.S., Canada, and Native American tribes in the U.S., to consult about restoration and conservation of anadromous salmon stocks in the Columbia Basin.⁴⁰ This cooperation simply did not take place, however, under the 1985 Treaty or the 1996 revision. However, the legal mandate remains.

Finally, the high concentration of threatened and endangered species in the area, especially salmon, involves both federal governments and state and provincial agencies in management. There is a concerted effort amongst resource managers to coordinate endangered species protection efforts under the Endangered Species Act and the soon-to-be-enacted[†] Species at Risk Act.⁴¹ Specific to salmon, agencies have tried to improve the suitability of river conditions by manipulating physical structures and supplementing natural recruits with aquaculture-reared fish, all at the dam at great cost. Only recently have scientists realized effort has not been effective.⁴² “We’re in our seventh year and the program has yet to find a glimmer of hope,” said the Douglas County fisheries biologist.

APPROACH TO TRANSBOUNDARY MANAGEMENT

Transboundary management in the Okanagan Basin has struggled to find a foothold, although there is activity both in the U.S. and Canada, much of which purports to be transboundary. Without a clear focal point, these collaborative efforts are difficult to tease apart. Most collaborative efforts in the Basin lack an identifiable leadership structure or operate on more of an ad hoc basis, or both. In fact, some of the programs are called different names in different documents and by different participants, which makes it difficult to track their activities.

This amalgamation, nevertheless, can be separated into three distinct efforts based on interaction: the Douglas County Project, the South Okanagan-Similkameen Conservation Program, and the Columbia Basin Ecoprovince Review and Subbasin Planning Process. These efforts operate in the Okanagan at variable geographic scales, but have the potential to form an interconnected web that can function like a safety net for sockeye and the ecosystem itself. Unfortunately, in many cases, these groups are not aware of one another.

[†] The Canadian parliament is expected to pass some form of an endangered species act in the coming year that will give federal agencies a sort of listing authority similar to NMFS under the U.S. Endangered Species Act (Harrison 2000, Hyatt 2000, Wolf 2001, Hyatt 2001).

Douglas County Project

The decline of the anadromous sockeye salmon stock means that it has become a concern under the U.S. Endangered Species Act. NMFS declined to list the Okanagan sockeye once before,⁴³ but its status is rapidly approaching a level where listing is imminent. As a condition of their the Federal Energy Regulatory Commission (FERC) license to operate the Wells Dam on the Columbia River, the Douglas County Public Utility District (Douglas County) must meet a specific mitigation requirement to compensate for the impacts of dam operation. Their requirement pertaining to Okanagan sockeye is that they must improve productivity over the 20-year average by roughly 10 percent.⁴⁴ It does not have an ecosystemic scope, as might be expected given Douglas County's motivations, but participants laud it for the diverse representation and sound science at its core.

Project description

Faced with FERC requirements, Douglas County realized the futility of continuing with the current attempts to supplement the stock, which are failing to show results. A Canadian fisheries biologist summarizes the situation: "The net result of [the hatchery program] is that they've probably not produced a *single* additional fish in the last 10 or 15 years, in spite of making valiant efforts to do so."⁴⁵ Instead, Douglas County recognized the potential stock improvements from concentrating on spawning and rearing habitats—which happen to lie in B.C. The Douglas County fisheries biologist notes, "Quite honestly, if we did not see the international border we would be [focusing our efforts] in British Columbia, where the fish spawn and rear in their early life stages."⁴⁶

In 1996, Douglas County decided to take a first step toward fulfilling their mitigative responsibility in a truly unconventional manner—they contacted fisheries experts working on the Okanagan in B.C. Early discussions determined it was possible to meet a variety of agencies' approval, namely First Nations, the province, and Canadian federal government. A contact group was formed in B.C., called the Okanagan Basin Technical Working Group (Working Group), to focus concerted effort on trying to understand what measures were available.⁴⁷ Since the initial contact, Douglas County commissioned a variety of studies, many of which will be finalized by May 2001.⁴⁸ This project involves representatives of the Canadian Department of Fisheries and Oceans, MELP, and Okanagan Nations Alliance through research contracts.

Organizational structure

The project is indeed unconventional, but it does have a distinct form. The Okanagan Basin Technical Working Group (the Working Group) is the steering force of the project. There is no formal "organization" per se, but the Working Group includes representatives of various interests. The Working Group essentially operates as a kind of administrative unit in that it coordinates the activity of its member agencies for this program.⁴⁹ The

Okanagan Basin Technical Working Group Members, 2001

United States

- Douglas County Public Utilities District

Canada

- Department of Fisheries and Oceans
- B.C. Ministry of Environment, Lands, and Parks
- Environment Canada
- Okanagan Nations Alliance

funding from Douglas County, however, goes directly to the Working Group members through their respective managing entities. This establishes channels for future on-the-ground activity, since the contract recipients are the individuals that will be making the management decisions.⁵⁰

The project is essentially a cooperation between committed individuals who happen to work for government agencies with the responsibility for sockeye conservation. Working Group members meet regularly, but the process is not open to the public. No formal treaty or agreement between the two countries sanctions this project, but there is no contravening precedent either. As one participant explained, “[The project is only] formal in the sense that it involves agencies.”⁵¹

In fact, it has been individual commitment, rather than process or structure, which has carried the project along for almost four years. One participant recalls, “The personalities involved are quite committed to the fish...Everybody in this process to date has had kind of a ‘fish first’ attitude—particularly from the Canadian side.”⁵² This stock is the sole remaining anadromous stock in the Canadian Okanagan—a significant fact that focuses effort from the Canadian participants: “I think we’ve kind of dug in our heels on this [stock] and said ‘we may lose this one, but we won’t lose it without a fight.’”⁵³

Stakeholder involvement

Participants in the Douglas County Project are proud of the project’s inclusive mix of stakeholders. A participant explains, “We did not want to exclude anybody from the equation which is why we’ve asked for bringing together the environmental agency from the province, the federal government, as well as the First Nations people.”⁵⁴

The project also tries not to exclude any participants from decision-making. Douglas County is aware of the peculiar dynamic implicit in the arrangement—namely that resource managers in B.C. are engaged in helping the utility district to handle its mitigative responsibility in the U.S.⁵⁵ The Project operates on consensus, firmly rooted in biologically-defensible goals. Indeed, consensus has caused the project to slower than if the agencies were operating alone.⁵⁶

This small pool of representatives involved in the Douglas County Project gives reason for pause, however. Significant sectors are not included, including other U.S. interests and non-governmental organizations on both sides of the border. One participant explained that the process has not *excluded* anyone. He contends, “There are probably groups that would like to have a seat at the table, but the question is whether they can sustain the effort to maintain the seat. It isn’t that they’ve been excluded from the table.”⁵⁷

Obstacles

The Douglas County Project has encountered several obstacles, both foreseen and unexpected, in its short lifetime. These include political concerns, the international border, implications of the project in terms of the PST, and bureaucratic inertia.

The Colville Confederated Tribes, the current caretakers of the Douglas County hatchery program, have valid concerns about the project—it will lose the jobs and funding associated with their hatchery if sockeye can be raised in Canada with greater success. Douglas County representatives, however, no longer consider the hatchery program viable in its current form. The hatchery program’s shortcomings are not due to tribal management, however, as one representative stressed: “The Colvilles have done as good a job with this program as can be expected of anybody...that isn’t the issue here. It’s the fact that...they were never meant to be cultured in the fashion that people want to try to culture them in.”⁵⁸

The eventual outcome of the project will most likely cost the Colvilles jobs and funds. A Douglas County representative explains, “[The Colville] are understandably not too eager to see this program go away because it provides employment for four people at the hatchery plus it also provides some administrative support. So there are some funds that they would lose if this program shifted into Canada.”⁵⁹

The international border itself has also been a significant challenge to the Douglas County project. The past decade of unsuccessful mitigation efforts, from the hatchery program to physical alterations, might not have been realized without the presence of the international border. Instead, there are two different management systems in place that affect sockeye equally. A participant speculates, “If these groups formed in the absence of the border you’d only have one group that formed and it would reflect the whole watershed, not just the part that Canada’s sovereign over and that the U.S. is sovereign over...the ways of doing business in Canada and the U.S. in terms of water and fish are much different.”⁶⁰

Furthermore, the PST’s elaborate system of interrelated harvest quotas motivated opposition from regional native peoples. The Columbia River Intertribal Fish Commission is concerned that improving the Okanagan sockeye run would trigger sharing of chinook or coho salmon in other parts of the Columbia River Basin in accordance with the PST. The Intertribal Fish Commission, a coalition of Native American tribes in the U.S., has expressed opposition to that outcome, however it might be realized.⁶¹

Finally, the Douglas County project has not moved as quickly as expected because of bureaucratic inertia. The Project involves a large number of political operatives in far-flung decision centers, and decisions are made with an eye toward their concerns. A participant observed that this characteristic certainly complicates things.⁶²

South Okanagan-Similkameen Conservation Program

The South Okanagan-Similkameen Conservation Program (SOSCP), was created by MELP and Environment Canada in July 2000. SOSCP out of an existing management strategy for the basin coordination of the Nature Trust of B.C.’s South Okanagan Critical Areas Program and the MELP’s Habitat Conservation Fund Okanagan Endangered Species Program. In the early 1990s, the Strategy set priorities for management activities for the conservation of natural habitat and its unique flora and fauna.⁶³ The Strategy

prioritized biophysical mapping projects, species status reports, and opportunities for stakeholder participation.⁶⁴

SOSCP was created to eliminate the redundant work performed by individual recovery teams working toward single species recovery. SOSCP was endowed with an ecosystem perspective to harmonize Canadian activity since many groups were working at cross-purposes by altering ecosystems to benefit one species without considering the needs of others.⁶⁵ SOSCP intends to coordinate existing conservation strategies, negotiating the acquisition of priority habitats, and expanding community involvement through partnerships.⁶⁶ Since SOSCP is a relatively new organization, its structure has yet to take shape.

Stakeholder diversity

SOSCP's membership was built from six core partners (see inset box). SOSCP now also includes another 13 organizations, including The Nature Conservancy of Washington,[†] to bring the total to 19. As discussed earlier, SOSCP also includes community involvement, broadening the potential viewpoints available to the ERPSS Subbasin Planning Process. SOSCP consists of nineteen conservation organizations and government agencies, including MELP, several provincial land conservancies, Environment Canada, and The Nature Conservancy of Washington.⁶⁷

Unlike other efforts in the region, SOSCP underscores the importance of public involvement in a recent public brochure: "SOSCP recognizes the conservation achievements of local residents. The founding partners look forward to working with community members to realize common goals and explore opportunities to learn about and encourage conservation."⁶⁸ Environment Canada announced in June 2000 that it will contribute \$1 million (Canadian) from its Habitat Stewardship Program to fund a variety of SOSCP activities that will be carried out by non-government organizations, private landowners, conservation groups, and local governments.⁶⁹

SOSCP Core Members, 2001

- Environment Canada
- B.C. Ministry of Environment, Lands, and Parks
- Habitat Conservation Trust fund
- Nature Trust of British Columbia
- Nature Conservancy of Canada
- Land Conservancy of B.C.

Columbia Basin Ecoprovince Review and Subbasin Planning Process

The Columbia Basin Ecoprovince Review and Subbasin Planning Process (ERSPP) is an emerging process that harmonizes priorities across the border. Largely a collaborative of government agencies, ERSPP works on the river subbasin level to set mitigation and restoration priorities and channels federal funds to programs in a strategic method. Unlike prior processes used by the same agencies, the planning is done on the subbasin level, however, which creates much-needed resource opportunities for transboundary collaboration.

[†] Participation by The Nature Conservancy of Washington is strictly limited to financial support at this time. The Conservancy's Directory of Science and Stewardship suggests that the use of ecoregional planning by his organization will necessitate transboundary collaboration in the future (Cook 2001).

Project description

The Pacific Northwest is unique in the amount of money available for fish and wildlife work because of the legacy of hydropower projects. As noted earlier, the NPPC is essentially an agency dedicated to sharing hydropower profits with fish and wildlife. Its resource pool comes from wholesale power revenues generated by the Bonneville Power Administration (BPA), the federal agency that markets the electricity generated at U.S. federal dams on the Columbia River.⁷⁰ BPA contributes about \$120 million per year to these fish and wildlife programs.⁷¹ Of that, 85 percent goes to fish programs and the other 15 percent to wildlife programs. Recipients are primarily state agencies and tribes, although consultants and universities receive a significant proportion. Increasingly, project-based collaborations are applying for funding. About two-thirds of the total “hits the ground” every year, making BPA the single largest funding source for fish and wildlife programs in the region.⁷²

Given the size of the Columbia Basin, federal agency employees cannot be expected to have the knowledge base of every subbasin in the system. The Columbia Basin Fish and Wildlife Authority (CBFWA), a self-chartered organization made up of the legally recognized resource managers from the four states and two federal fish and wildlife management entities as well as thirteen Native American tribes of the Columbia River Basin,⁷³ supports NPPC in the review process. Taken as in combination, this review process attempts to it to coordinate member action through joint planning and provide for an open forum for members to exchange ideas and information on matters affecting anadromous and resident fish, wildlife, and habitat concerns, and work toward unified positions.⁷⁴ Each step of the process is driven by consensus, a feature which members believe focuses actions in a single direction representing the best available information from the fish and wildlife managers.⁷⁵

This project review process is indeed confusing and cumbersome. NPPC recognized this shortcoming and is in the midst of a complete overhaul.⁷⁶ The new review process, called the ERSPP, breaks the Columbia River Basin into 52 subbasins in 11 ecoprovinces.⁷⁷ Each subbasin will undergo a three-step, three-year review en route to creating a subbasin plan.⁷⁸ ERSPP implements the new ideological interpretation of NPPC’s jurisdiction, incorporating Canadian federal and provincial managers and tribes in this process for the subbasins, like the Okanagan, that extend across the border.⁷⁹

The ERSPP uses a three-year rolling review for subbasin plans. After the planning processes are completed at the subbasin level, the subbasin will submit a list of projects for funding with its plan to the NPPC. In this way, NPPC is able to maintain a focus on ecoprovincial and regional planning, leaving the smaller scale issues to those better prepared to address them. As one participant in the transition explains, “It’s a process by which you formulate projects in a strategic way, rather than tactical or opportunistic.”⁸⁰

ERSPP in the Okanagan

The ERSPP makes a sincere effort to build ecosystem planning into the allocation of BPA’s substantial resources. At its heart is a kind of analytical framework for assessing

the relative health of the watershed.⁸¹ This framework will be employed at the subbasin level to set watershed-level priorities. NPPC will then allocate money to projects in the basin that meet the priorities, subject to adaptive management, in the proper sequence.⁸² One participant describes the framework this way: “It points you in the direction of where your priorities for preservation and restoration are and those are characterized in terms of species diversity, capacity, and productivity. So you’re using conservation biology principles in the assessment. And then the planning [takes] that to the next step: what do we do?”⁸³

The Okanagan River Basin[†] is one of the 52 subbasins subject to planning under ERSPP. Participants in ERSPP describe it as the best example of the ERSPP’s transboundary capacity. Since ERSPP is only in the midst of creation, the Okanagan offers the best look at what substantive transboundary process will look like. A primary example of the type of transboundary work that will be more likely under the new process is a sockeye project spearheaded by the Colville tribe. Recently approved, the project^{††} aims to reintroduce sockeye into Skaha Lake. An implicit goal of the project is improving the sockeye stock while also keeping the hatchery on the Colville reservation. The project was motivated by a desire by the Okanagan Nations Alliance to see sockeye reintroduced further up the Okanagan River into their historical range.⁸⁴ The science indicates that increased lentic habitat for rearing could substantially improve runs.⁸⁵ The Colville knew that BPA funds were available (BPA spent over \$1 million on three projects in the subbasin in FY2000)⁸⁶ and offered to act as a sponsor to make additional resources available to Canadian agencies. At present, the Canadian Department of Fisheries and Oceans is contracted to perform a disease risk analysis, in effect answering its primary concern about reintroduction—exposure of resident kokanee and several hatchery-reared salmonid species (exported throughout B.C.) to disease carried into Skaha Lake by returning anadromous sockeye.⁸⁷ MELP and others assist with data collection.

Organizational structure

The ERSPP is intrinsically an internal mechanism for NPPC review of project funding proposals submitted from throughout the region. The review process incorporates independent scientists (through the CBFWA) and regional resource managers from the U.S.—this will not change under ERSPP. Other than fundamentally restructuring the planning boundaries, what is different is that Canadian officials will now be able to participate in the planning process and coordinate ERSPPs guidelines with their own.

In the Okanagan, a group of managers, consultants, and government officials has already begun the subbasin planning process. The membership remains heavily rooted in the U.S., but individuals are trying hard to include additional Canadian perspectives.⁸⁸ In fact, the subbasin planning group has already identified and made contact with

[†] The Okanagan Subbasin will be defined to include the Okanagan, Similkameen, and Methow River valleys in May 2001 (Wolf 2001).

^{††} BPA Project number 20124, “Evaluate an Experimental Re-introduction of Sockeye into Skaha Lake.”

Stakeholder diversity

At the landscape-scale, ERSPP involves well over 2,500 individuals from Canada, the U.S., and various tribes and First Nations.⁸⁹ Participation involves a broad range of funding organizations, resource managers, and consultants, although non-governmental representation is thin. One participant describes, “Everybody’s involved. It’s a multijurisdictional effort to coordinate—there’s no real leader *per se*, other than the tribes and the NPPC.”⁹⁰ At the landscape scale, the membership list confirms this claim.

In the Okanagan, the team assembled to coordinate the subbasin planning process informally calls itself the Okanagan Technical Advisory Committee (see inset box). This group of contributors includes representatives of the U.S. Forest Service, Okanagan County, NMFS, U.S. Environmental Protection Agency, Washington Department of Ecology, the ONA, and others. The team leader, however, is a biologist from the Colville Confederated Tribes.⁹¹

Critics note that the ERSPP Okanagan Subbasin Planning Process is still primarily designed to work with the First Nations people and states, the primary U.S. resource agencies in charge of carrying out mitigation activities. Internal documents show that, although there is heavy state representation, a diverse group of contributors have already involved themselves in drafting the first of three steps in the planning process.⁹²

**Members of the Okanagan Technical
Advisory Committee, 2001**

United States

- Colville Confederated Tribes (team leader)
- ENTRIX, Co. (consultants)
- Golder Associates (consultants)
- National Marine Fisheries Service
- Okanagan County Water Resources
- Okanagan Irrigation District
- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation
- U.S. Environmental Protection Agency
- U.S. Forest Service
- Washington Department of Fish & Wildlife
- Washington State Department of Ecology
- Washington State Conservation Commission
- Washington State Department of Transportation

Canada

- Golder Associates
- Okanagan Nations Alliance

Interaction between efforts

The potential for comprehensive collaboration at the ecosystem scale in the Okanagan is great. Endangered species concerns act as a common crisis to focus attention of the various resource managers. An institutional framework for ecosystem management across the basin could be established through the ERPSS process. In fact, despite the fact that SOSCP is a fledgling effort that has little recognition in the basin, ERSPP reached out to incorporate it in the subbasin planning process.⁹³ A meeting in Colona, B.C., in February 2001 between the Okanagan subbasin planning committee (ERPSS) and SOSCP officials resulted in an agreement to fuse the two programs at the planning and coordination level.⁹⁴ The details of this partnership will not be finalized until June 2001.⁹⁵ The impending partnership with SOSCP would further diversify the Subbasin Planning Process.

Unfortunately, interaction between the ERPSS and the Douglas County Project is non-existent. Douglas County has made no effort to involve itself with the ERPSS, and for understandable reason—as a non-federal dam, Douglas County is free of the federal mitigation mechanisms. It seems, however, that cooperation would benefit both parties. The Douglas County position does not agree with this reasoning, however, “We don’t see a need to [involve ourselves with that planning initiative] as far as how that would better serve us. At some point that would need to be done, but right now there doesn’t seem to be an interest in doing it.”⁹⁶ In fact, it is not clear that the large-scale planning process even knows of the Douglas County effort: “I’m not sure they’re aware of our program....”⁹⁷

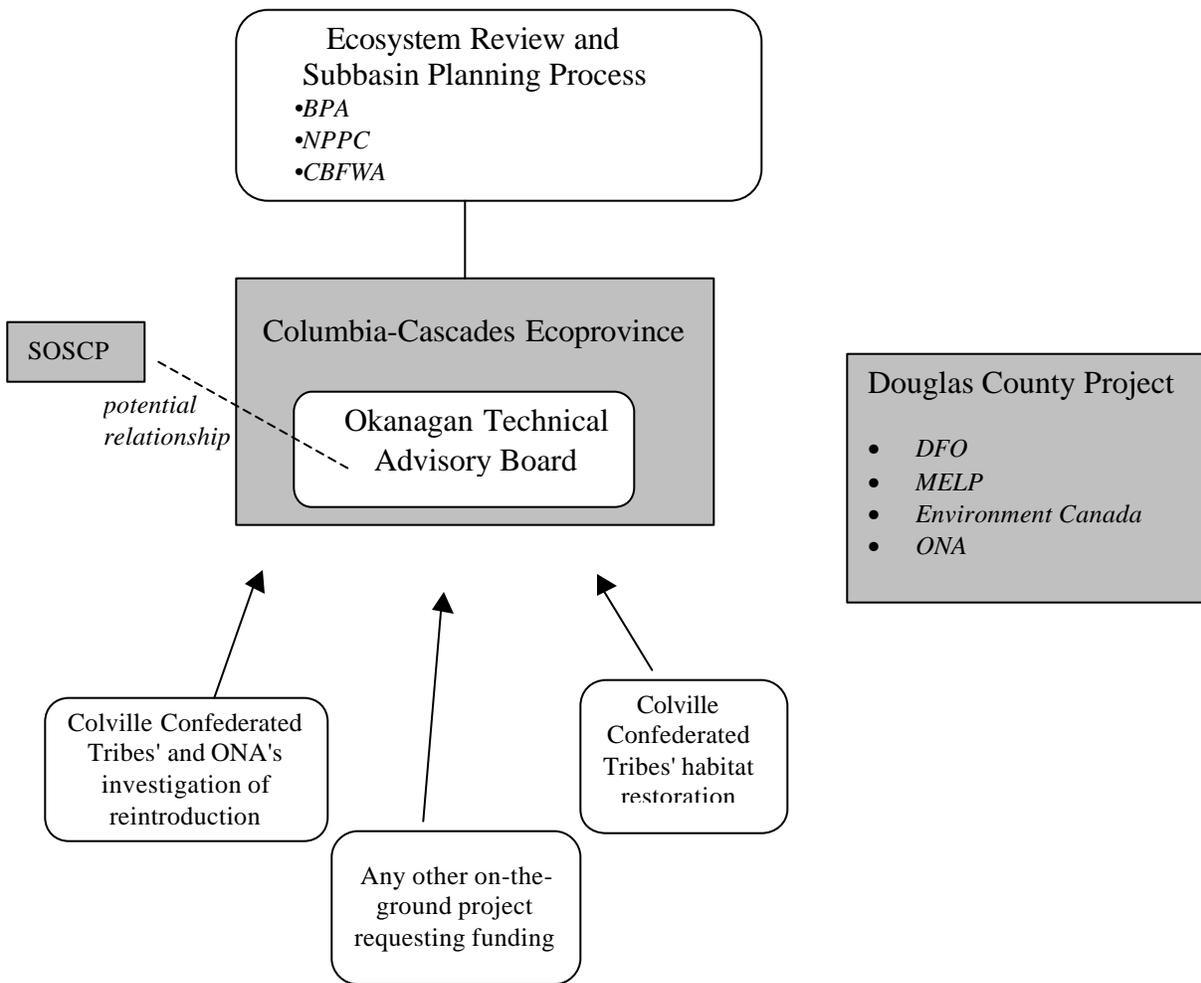


Figure 1. Interorganizational representation of activity in the Okanagan Basin. This diagram attempts to show the three relevant efforts (shaded) and interaction between them. Note the disconnect between ERSP and Douglas County. (This is not meant to capture all activity in the basin, nor the diverse activities of any of the efforts pictured above.)

ACCOMPLISHMENTS

For a variety of reasons, the accomplishments to date of the two efforts have been limited. A common accomplishment cited by members affiliated with one or more groups is opened lines of communication and an increased awareness of what counterparts are doing. As with many transboundary efforts participants are quick to cite procedural longevity as a feat in its own right. One participant sums up the predominant opinion: “[I]n many respects [there’s been] fairly modest headway, but when I look at where it started from, which was pretty much a cold start, it has come a long way. It just depends on what your benchmark for success is.”⁹⁸ By this rationale, participants name three primary accomplishments: creating an unbiased review of the sockeye problem, identifying opportunities for improvement of the sockeye population, and establishing a communication network.⁹⁹

Unbiased review

The Douglas County project generated an extensive review of projects and potential sockeye gains. One participant recalls, “We have gone through that and thought about where the bottlenecks are for this population, and possible improvements or resolutions to those bottlenecks. And we’ve found that many of the projects that we thought would actually help the population actually do very, very little to help improve their status... [T]hrough a lot of review of possible strategies, we have begun to eliminate several options. That, I think, has helped us to focus on what the options are that will actually work on the ground.”¹⁰⁰

Raising awareness

The Douglas County Project also raised awareness in Canadian agencies of their agency’s impact on sockeye populations. Increased awareness could potentially result in different actions by the agencies, especially dam managers. The Douglas County fisheries biologist contends, “While we don’t have anything physical on the ground, we’ve funded research that has brought people in B.C. a much higher appreciation for what things they do and how those impact the fisheries resources that they have a responsibility to protect.”¹⁰¹

Communications network

Finally, increased socialization has improved communication between resource managers in both cases. In some cases, colleagues working on the same population of fish were introduced for the first time through the project. A fisheries biologist asserts, “And so,

Significant Milestones

- 1996-** Douglas County approaches Canadian resource managers about potential collaboration.
- 1997-** Okanagan Basin Technical Working Group formed.
- 1999-** NPPC initiates overhaul of its annual funding planning process.
- 2000-** SOSCP created.
- 2001-** Okanagan Subbasin Planning Process approaches SOSCP about participating.
- 2002 -** First Okanagan Subbasin Plan will be completed

even if we completely walked away from the project at this juncture, the B.C. and Canadian government have tools at their disposal that will help them to be much better managers of the system for protecting these resources.”¹⁰²

CONCLUSIONS

The Okanagan story is being written each day. There is no single, identifiable process or organization that is responsible for coordinating conservation efforts throughout the basin. Instead, the needs of the Okanagan sockeye motivate the bulk of resource management work in the valley. This approach to management is poised for a transition, however, to an ecosystem management paradigm. The basin has the opportunity to establish a powerful coordinated ecosystem planning forum.

Implicit in the activity in the Okanagan Basin is the recognition that both the nations and tribes must take responsibility for the basin’s resources. As one Douglas County participant commented, “Sometimes watersheds need to be looked at as units, not necessarily just along the political boundaries. In order to do that...you have to ignore the international boundary.... I think the program we’ll develop will be biologically defensible, and that’s what we’re attempting to do.”¹⁰³ Ironically, this paradigm shift might come about by harmonizing protection measures for a *single* species.

Lessons

- **Where collaborators lack a shared sense of place, a focal species can make collaboration easier.** Modern scientific paradigms advocate for managing resources at the ecosystemic level, rather than solely for timber harvest or salmon recovery. Nevertheless, since transboundary collaborators often do not share a history, culture, or even a language, there is a potential disconnect about what a watershed means and should be used for. Until participants have a common sense of the place, ecosystem management will be difficult to implement. The Okanagan is an example of such an ecosystem. In this case, participants coalesced around sockeye salmon instead. A Douglas County project participant recalls, “There are groups on both sides of the border who are proponents for maintaining and restoring this particular stock of salmon and ensuring that it’s access to water is adequate for meet that objective and that creates an ongoing focal point for transboundary discussion and interest.”¹⁰⁴
- **Transboundary work requires patience and sincere commitment from participants.** Collaboration is predicated upon shared trust among participants. Trust takes time and repeated interaction to create especially when there is tension. Transboundary collaborators need to be acutely aware that these efforts need time to find common interests. One Douglas County participant recalls, “It seems practically trite, but discovering [common interests] is exciting. Once you realize that there is this commonality between all the players as far as something to do, now all of a sudden there is a lot of excitement and there is momentum that’s being generated. The project takes on a brand new meaning—it’s worth the effort.”¹⁰⁵

- **Participants in a transboundary collaborative effort must be able to take the perspective of other participants.** The importance of this stock of sockeye salmon differs among the First Nation, Canadian, and U.S. participants in this basin. This is the last remaining anadromous stock in the Canadian Okanagan, and a stock of significant cultural importance to the native peoples in the area. U.S. concern, however, is not at the level. Participants in either effort must be willing to understand that there are different, equally valid perspectives on the same issue.
- **Access to organizational resources is a key to success.** Like it or not, organizations that found themselves on volunteer time will travel a much more difficult path to success than a well-resourced group. Funding channels allow transboundary collaborators a method of predicating future work on common goals and priorities. Although most transboundary efforts will not operate in a situation where the majority of implementation dollars can be influenced at a distinct chokepoint, the ERPSS model is a powerful way to effect coordinated management. A participant in the ERPSS process sums it up well: “It all comes down to funding, it all comes down to money.”¹⁰⁶
- **International agreements that create transboundary channels of communication, treaties or otherwise, facilitate collaboration.** Transboundary work in the Okanagan benefits from the several international agreements that apply to its resources—that is, the PST and the CRT. The preexisting institutional infrastructure can eliminate the bureaucratic obstacles that frustrated the Douglas County project, as the ERPSS experience illustrates. Simply having some document or some established channel of communication with counterparts across the border can give collaborators the traction to gain momentum.
- **Transboundary collaborations should document progress and success to the greatest extent possible.** Documentation of an effort’s progress serves several positive functions. It can positively impact morale, which is especially important when problems seem too large to reconcile. It creates an institutional memory that allows newcomers to understand the origins of the effort and see how far the collaboration has come. Documentation also publicizes the collaboration and indirectly reaches out to other interested parties.

Interview Contacts

- **Shawn Black**, Field Associate (Okanagan Valley), The Land Conservancy of British Columbia
- **Judy Brock**, Chairwoman, Okanagan-Similkameen Conservation Alliance
- **Jay Cook**, Director of Science and Stewardship, The Nature Conservancy of Washington
- **Chris Fisher**, Fisheries Biologist, Colville Confederated Tribes
- **Mitch Friedman**, Executive Director, Northwest Ecosystem Alliance
- **John Harrison**, Public Information Officer, Northwest Power Planning Council
- **Kim Hyatt**, Okanagan Basin Technical Working Group Member, Department of Fisheries and Oceans
- **Rick Klinge**, Fisheries Biologist, Douglas County (Wash.) Public Utility District
- **Keith Wolf**, Director of Ecological Sciences at Golder Associates, the firm creating the process for ERSPP

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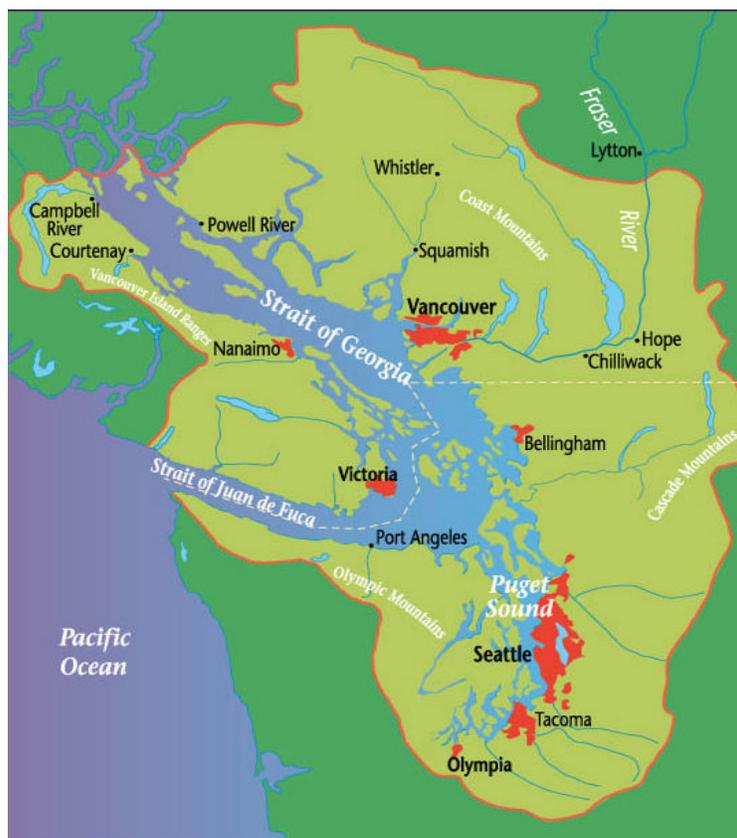
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THE PUGET SOUND-GEORGIA BASIN INTERNATIONAL TASK FORCE

Washington, U.S. – British Columbia, Canada



Source: Environment Canada, Georgia Basin Ecosystem Initiative

INTRODUCTION

Combined with burgeoning economic opportunities in trade and technology, the natural beauty of its oceanfront and forest landscapes have drawn much attention to the Puget Sound-Georgia Basin ecoregion. The Puget Sound-Georgia Basin International Task Force (Task Force) is one of the many regional initiatives focused on protecting the area's precious natural resources in the face of increasing development. What has made the Task Force particularly effective in its ability to implement true ecosystem management is its *mandate* to work on a transboundary basis. No aspect of this region's environment can realistically be separated from the larger Sound-Basin ecosystem, and the Task Force recognizes this reality. Shared equally between the State of Washington

and the Province of British Columbia (B.C.), this marine complex is inherently binational.

Spawned from the landmark Environmental Cooperation Agreement signed between the state and province in the early 1990s, the Task Force provides a good example of how government agencies in countries with clearly different management regimes and operating procedures can *effectively* coordinate the joint stewardship of natural resources. Additionally, the Task Force proves that government can respond to ecological challenges when commitment and strategic planning are part of the process.

Why Transboundary Management?

For those agencies with jurisdiction over environmental issues in the Puget Sound-Georgia Basin region, it only makes sense to operate under the rubric of a single, binational ecosystem. As was stated by an employee of the B.C. Ministry of Environment, “what we really have here is a joint ecosystem, and we have to admit that.”¹ While B.C. and Washington follow different governmental frameworks and operating procedures, agency practitioners working within the region realize the need for both sides to work toward common, ecosystemic goals. Clearly, the marine resources do not acknowledge the political boundary between Washington and B.C. Consequently, the agencies managing these resources have found it futile to ignore this reality, making transboundary management efforts virtually necessary.

Since the inception of the Task Force, individuals, from political leaders to on-the-ground practitioners, have been a driving force behind sustainability and effectiveness. In addition, the organization’s structure works with and not against the distinct government structures of the two countries involved. This has been a particularly important aspect of the Task Force’s operations, for without an acceptable coordination mechanism, the fate of the Sound-Basin ecosystem remains subject to the whim of disjointed management styles.

CONTEXT

The Puget Sound-Georgia Basin Ecosystem

The shared waters of British Columbia and Washington form one large hydrologic system composed of three natural basins. To the north lies the Strait of Georgia; to the south, lies Puget Sound; and connecting the two with the Pacific Ocean is the Strait of Juan de Fuca.² In combination, these systems form an estuary, “where seawater from the open Pacific Ocean is diluted by fresh water from numerous rivers... originating high in the surrounding glaciated mountains.”³ The muddy shores of the inland sea created by Puget Sound and the Strait of Georgia provide habitat for commercial and recreational shellfish such as oysters and crabs.⁴ The upland habitats, from the water’s edge to the highest mountains, play a particularly critical role in maintaining the health of the ecosystem.

Land Ownership Pattern

Both Washington and B.C. were once heavily forested, which has helped to shape the land ownership patterns of the region. Today, the U.S. Forest Service and forest products industries are the main commercial forestland owners in Washington, at 31% and 26% respectively.⁵ In the Puget Sound area, the majority of land is not owned by the federal government but is divided between the state, counties, and corporate and individual private landowners.⁶ The situation in B.C. is simplified by the fact that the Provincial government owns 97% of the commercial forestlands and much of the province is forested. For example, 91% of Vancouver Island, home to the City of Victoria and one the Georgia Basin's major land masses, is under forest cover. As of 1993, only 20% of the Island, forested or not, was privately owned.⁷

Ecological and Economic Values

The scenic beauty and rich natural resource base of Puget Sound and the Georgia Basin are inextricably tied to the region's thriving economy. Regardless of whether or not business owners have a personal interest in environmental protection, many of their livelihoods depend on the health of the area's ecosystems. In particular, commercial and tribal fisheries, shellfish growers, agriculture, forestry, recreation and tourism-related industries, and real estate development benefit from, and even rely upon, a high quality natural environment to succeed. Salmon fishing from Puget Sound area streams alone brings in over \$80 million per year, while the Sound's oyster industry is one of the top sources of commercial oysters nationwide.⁸

In addition, the mild climate, outdoor amenities, and favorable economic conditions have attracted many workers to the region, leading a number of industries to relocate there. For example, companies with interests in aerospace, advanced technology (such as software and wireless communications), and international trade now comprise the majority of the urban-based regional economy.⁹

Ecosystem Stresses

In the past 25 years, the population of the Puget Sound-Georgia Basin region has more than doubled, and it is predicted that in the next 15 years, the population may double again, putting enormous pressures on the area's environment. "With rapid population increases, rich agricultural land is lost to housing and roads, wildlife habitat is lost or destroyed, and some species are put at grave risk."¹⁰

Increasing urbanization is among the factors that have led to further decline in species populations already listed as either threatened or endangered by the U.S. federal government. These include: the gray wolf, grizzly bear, bald eagle, northern spotted owl, leatherback and loggerhead sea turtles, the Oregon silverspot butterfly, and several plants and fish species.¹¹

Particularly at risk are the 200+ species of fish and other aquatic organisms that live in the inland sea's waters. The current controversies surrounding salmon and hydropower interests in the Pacific Northwest indicate the strong influence of fish populations on the regional economy and ecology. Unfortunately, "many of these [species] are now less

abundant than they were just a few years ago – in some cases, alarmingly so.”¹² Declines in regional marine fish stocks can be linked primarily to overfishing, although changes in climate and ocean conditions have taken their toll as well.¹³ In addition, many of the oysters, clams, and mussels are contaminated by bacteria and viruses derived from urban sewage and agricultural runoff. Birds living on the shores of the Puget Sound-Georgia Basin system and feeding from its waters have also been negatively affected. Chemical contaminants are blamed for eggshell thinning and deformities in some bird populations.¹⁴ Other threats to the region’s ecology include exotic species (brought in with ballast water), freshwater diversions, and oil spills.¹⁵

History of Regional Cooperation

Fortunately, both B.C. and Washington have a history of transboundary environmental successes from which to draw the strength to fight these current ecological battles. B.C. has the distinction of being the Canadian province engaged in the most transboundary agreements, participating in 38% of all state-provincial interactions.¹⁶ Similarly, Washington is the state most active in transboundary collaboration - often in partnership with B.C. - with 34 agreements to its name.

At the local level, the governments of San Juan County in the U.S. and Canada’s Gulf Islands have been working together to develop shared Marine Protected Areas (MPAs) within their jurisdictions.¹⁷ There is a Memorandum of Agreement between these jurisdictions, specifically stating that efforts will be made to designate and manage a transboundary MPA.

In addition, Native American First Nations and tribes in the region are inherently transboundary and, as a general rule, do not distinguish themselves as different populations on each side of the arbitrary line which splits their homeland. Working on a transboundary basis is second nature for groups like the Coast Salish. In fact, the Coast Salish word for “border” simply means “fence” or “the division down the middle of a house.”¹⁸ Such a definition clearly diminishes the perception of the U.S.-Canada border as any sort of insurmountable barrier.

History of the Task Force

As the 1990s approached, U.S. and Canadian concerns regarding the declining health of the Puget Sound-Georgia Basin ecosystem escalated, and the need to build from past collaborative efforts became glaringly important. Officials in the U.S. were particularly worried about the Canadians “apparent lack of progress” in sewage treatment and the destructive impact that continual discharges from large, waterfront cities like Victoria and Vancouver would have on the quality of the marine environment.¹⁹ Likewise, the Canadians had concerns about U.S. activities in the shared waters, including supertanker shipments of Alaskan crude oil to the lower 48 via Puget Sound and their potential for catastrophic and permanently damaging oil spills. In addition, terrestrial and aquatic systems on both sides of the border were beginning to feel the negative effects of a recent population boom experienced across the northern Pacific coast. As pressures on the region’s natural resources intensified, issues of growth management assumed top priority in both Washington and British Columbia.

Wishing to address these concerns, policymakers in the U.S. and Canada began talking to one another about devising a proactive plan. Clearly, “the old patterns of intermittent and ad hoc activity, or reliance upon reactive federal mechanisms after problems reached a critical stage...were going to be inadequate to meet the needs of a growing region that places a high value on its natural environment.”²⁰ With that in mind, executives in the B.C. Ministry of Environment and the Washington Department of Ecology met informally in May of 1991 to discuss options for what might best encourage more effective cooperation among the various jurisdictions relevant to the situation.²¹

This meeting opened the channels of communication between agencies on both sides of the border and clarified the responsibilities assumed by each.²² It also made evident the existence of an “institutional gap” regarding how to most appropriately administer transboundary environmental management. The feeling among those at the meeting was that an upper-level political endorsement, perhaps in the form of a mandate for information sharing, was needed.

Sparked by that initial meeting in 1991, Washington Governor Booth Gardner and B.C. Premier Mike Harcourt signed an Environmental Cooperation Agreement (ECA) in May of 1992.²³ The ECA laid the groundwork for the state and the province to work together on transboundary environmental problems.²⁴ In 1999, U.S. EPA Administrator Carol Browner, and Canadian Minister of the Environment David Anderson, signed their own statement of regional environmental cooperation.²⁵ This agreement, which is not limited to marine issues but also includes growth management and air quality issues, has been fully blessed by both federal governments as a formal international agreement.

Significant Milestones

1991- Initial meetings between Washington and B.C. officials to discuss joint management options for the Sound-Straits ecosystem.

1992- Environmental Cooperation Agreement signed by Governor of Washington and Premier of British Columbia. Environmental Cooperation Council created.

Puget Sound-Georgia Basin International Task Force established.

1999- Agreement signed by U.S. EPA Administrator and Canadian Minister of Environment.

APPROACH TO TRANSBOUNDARY COOPERATION

Involved Stakeholders

Recognizing the need to build permanent bridges for effective information exchange across national boundaries, the first action under the ECA was the establishment of an Environmental Cooperation Council, which in turn created the Puget Sound-Georgia Basin International Task Force (the Task Force).²⁶ Upon initiation, the Task Force included representatives of U.S. EPA, the Northwest Fisheries Science Center, Environment Canada’s Department of Fisheries and Oceans, the Washington Department of Ecology, the Washington Department of Natural Resources, the Washington

Department of Fish and Wildlife, the Puget Sound Water Quality Authority, the B.C. Ministry of Environment, Lands and Parks, and the Northwest Indian Fisheries Commission.²⁷ Task Force co-chairs are the B.C. Ministry of Environment and the Puget Sound Water Quality Action Team.

The most recent additions to the Task Force include the Coast Salish First Nations in B.C. as well as the Northwest Straits Commission, an organization based in the San Juan Islands that is concerned about protecting and improving the natural environment of the region's northern straits.²⁸ The inclusion of these groups lengthens the reach of the Task Force into important Native American and local communities.

Task Force Members

- U.S. organizations represented:
 - Northwest Indian Fisheries Commission
 - Northwest Fisheries Science Center (NOAA)
 - Northwest Straits Commission
 - Puget Sound Water Quality Action Team
 - Washington Dept. of Ecology
 - Washington Dept. of Fish & Wildlife
 - Washington Dept. of Natural Resources
 - U.S. Environmental Protection Agency
 - U.S. Fish and Wildlife Service
- Canadian organizations represented:
 - B.C. Ministry of Environment, Lands, & Parks
 - Coast Salish Sea Initiative
 - Environment Canada
 - Fisheries and Oceans Canada
 - Parks Canada

The official involvement of the Northwest Straits Commission is particularly interesting because they are the only local government representatives on the Task Force. The U.S. Congress established the Commission two years ago to protect and restore the marine resources of northern Puget Sound and the Strait of Juan de Fuca.²⁹ This work is done through seven Marine Resources Committees (MRCs), which were established under legislation passed by the county commissioners in each of the seven counties in this geographic area. These committees enjoy a diversity of stakeholders, including local scientists as well as leaders from industry, conservation, and government. The Commission provides technical assistance and funding to the MRCs and helps to coordinate special regional projects between them. The authorizing report which created the Northwest Straits Commission calls for joint action with Canadian counterparts when appropriate. As a result of their appointment to the Task Force, the Northwest Straits Commission is now well positioned to make the contacts that can help facilitate such cooperation.³⁰

Having the Coast Salish First Nations sitting at the Task Force table is another important step toward furthering transboundary collaboration in Puget Sound-Georgia Basin. The Coast Salish are Native Americans whose traditional territory spans the B.C.-Washington border. The binational Coast Salish family includes 55 Canadian First Nations and 30 U.S. tribes.³¹ They are represented on the Task Force by the Coast Salish Sea Initiative, a policy forum which addresses environmental issues, like air and water quality, that are important to Coast Salish communities.³²

While the Task Force has broadened its membership to include non-traditional governmental entities like the Coast Salish Sea Initiative, there have been no official appointments of completely non-governmental partners to date. However, such

organizations have been active in Task Force work groups. For example, Adopt-a-Beach and People for Puget Sound are both involved in exotic species eradication and education efforts organized under the larger Task Force umbrella.³³

The Task Force's Organizational Structure

As indicated by the agencies it represents, the Task Force tends to focus on state- and provincial- level activities rather than those that occur at the local level.³⁴ There are over 120 cities within the entire Puget Sound-Strait of Juan de Fuca area alone, and the Task Force is simply not equipped to address the individual challenges of all these local municipalities. Instead, Task Force work groups try to engage local governments on issues that specifically affect them. These work groups address various dimensions of habitat restoration, the protection of marine life, and the eradication of exotic species.

Task Force meetings are held on a biannual basis, alternating between being held the U.S. and Canada. Despite this attempt to equitably distribute meeting locations, it is often difficult for Task Force members to attend those meetings which are not held in their country. The area covered by the Task Force is large and “all the water in the middle makes it hard to get around.”³⁵ The meetings are open to the public and have occasionally attracted members of environmental and other public interest groups.

The B.C. Ministry of Environment and the Puget Sound Water Quality Action Team are Task Force co-chairs in perpetuity.³⁶ These positions stay within these agencies regardless of whether or not the individuals currently serving as co-chairs remain agency employees. This stipulation demonstrates the seriousness of commitment to the Task Force on the part of both the Province of British Columbia and the State of Washington.

Goals and Strategies

The Puget Sound-Georgia Basin International Task Force has both policy or process-based objectives as well as on-the-ground, ecological benchmarks it hopes to achieve. Often times these goals are pursued simultaneously and, as one of the Task Force co-chairs has stated, “you can never be too sure of where one takes over from the other.”³⁷ When asked about the Task Force's strategies for goal achievement, the Canadian co-chair told the following story:

There was this one case where there was boat coming in from Michigan through Washington State and it had zebra mussels attached to it, and it was spotted down in the States. The guy who spotted it wasn't quite sure of his authority and knew if he exceeded his authority he could be fired. So, the boat made its way into Canada, but this guy helped us find out its license, its destination, and that sort of thing, and we were able to prevent that boat from being launched before we got it cleaned up. Now, is that the result of technical on-the-ground know-how or is it because we had a policy that we work together on trying to prevent that from happening? I don't know. It's probably both.

Operating Procedures

The Task Force is an effort that has truly been shaped by its circumstances. The difficulty in traveling around the region combined with the divergent governmental arrangements and policies employed by the U.S. and Canada has led the Task Force to adopt a parallel tracks structure. Essentially, this means that each side works within the guidelines of its jurisdictional authorities – no new governmental structure has been created. However, the Task Force’s mission of “promoting and coordinating mutual efforts” requires that its members communicate regularly to make sure they are on the same track.³⁸ Most of the communication between Task Force members is over the phone although face-to-face interaction occurs at least quarterly if not more often for various work group activities.

The details of cross-border coordination introduced complexities that Task Force founders were unable to fully foresee. Although Task Force work groups were intended to be truly *transboundary*, it has been structurally and logistically impossible for these groups to actually accomplish anything based only on *in situ* interactions with each other. Despite the fact that “the speed of light does not actually change at the border,” the link provided by common scientific understanding of the problems at hand is not strong enough to overcome institutional difference.³⁹ The governmental structures within which the B.C. and Washington contingencies are working are so profoundly different that it has generally seemed irrelevant to have the groups struggle to meet jointly as long as they are working in parallel.⁴⁰

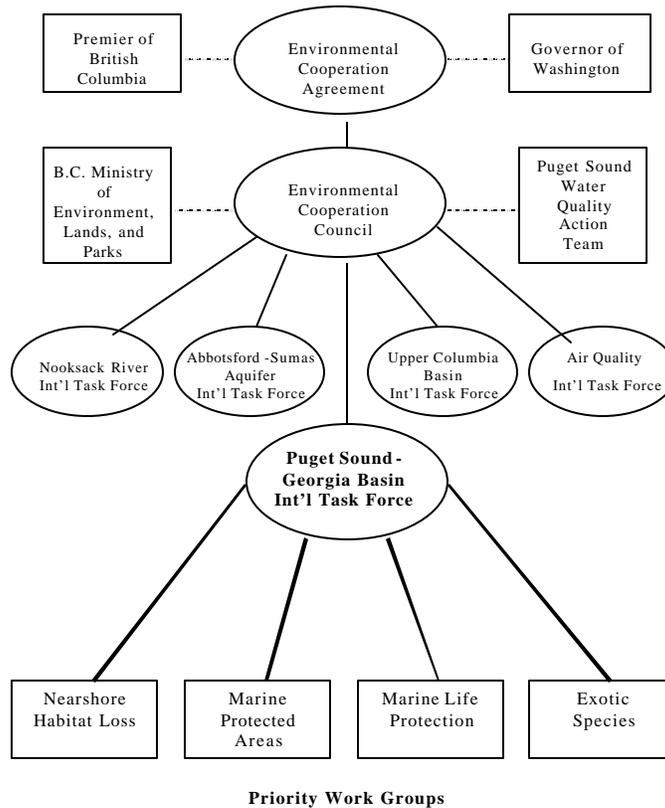
Although the Task Force has been able to generate good, defensible ideas through its integration of the science and policy surrounding many of the region’s pressing environmental concerns, it is not a body whose decisions have any particular official authority.⁴¹ In this sense, the Task Force is non-threatening, which has facilitated more willing participation by some of its members. It has not been, nor will ever be, an adversarial forum within which, for example, “the Americans try to get the Canadians to treat Victoria’s sewage or the Canadians try to get the Americans to not over-fish salmon.”⁴² The Task Force is about sharing information and jointly investigating common problems. Through this process, each side will hopefully learn to do things better.

The Task Force reports to the Environmental Cooperation Council whose members have the ability to endorse recommended policies and actions. Such endorsement lends legitimacy to the Task Force itself and makes it easier for its member agencies to lobby for funds in support of various transboundary projects like near shore habitat restoration, to give a recent example. In the simplest terms, “they either endorse stuff that we [the Task Force] come to them with or they help us [the Task Force] get stuff done.”⁴³

Both Task Force co-chairs utilize appropriate government channels to further the Task Force’s mission. For example, the B.C. Ministry of Environment is involved in a multi-agency project called the Georgia Basin Ecosystem Initiative (GBEI) which it hopes use as an mechanism to implement some of the work identified by the Task Force. Much of

the Task Force's agenda regarding habitat restoration and toxic pollution prevention is being carried out, on the Canadian side, via GBEI.⁴⁴

Puget Sound-Georgia Basin International Task Force



Barriers to Working Across Borders

A significant barrier to the Task Force's transboundary operations was the one-year withdrawal of British Columbia from all Task Force activities.⁴⁵ At the time the Pacific Salmon Treaty was being renegotiated, B.C. Premier Harcourt became very upset over what he considered to be unjustifiably high fish take limits on the part of the U.S. Even though the Task Force does not address the Pacific Salmon Treaty specifically, B.C. banned its members from participating until the debate over fishing allotments was settled. What ensued was that the Washington leaders of the Task Force's workgroups moved ahead, conducting studies and making recommendations, while the B.C. contingency fell behind. When B.C. rejoined the Task Force a year later, there was little else to do but simply set up a parallel but clearly separate structure on the Canadian side of the border.

In addition, some have cited the formidable nature and "awkwardness of government-to-government types of structures" like the Task Force as problematic.⁴⁶ Although the Task Force is diverse in its governmental representation, there is no explicit detailed

description of the responsibilities and appropriate point people for each agency. It has been suggested that a matrix containing this information could have a phenomenal impact on facilitating transboundary collaboration.⁴⁷ However, it is often the case that responsibilities are not evenly matched among counterpart agencies. For example, a local agency in the U.S. with a mandate to maintain fish habitat may have the authority to designate a Marine Protected Area while its Canadian equivalent does not.⁴⁸

There have also been issues with data sharing. Canada does not have a Freedom of Information Act like the U.S., making it so its government agencies have a lot more difficulty legally sharing information with others. In terms of swapping technical data across the international border, further complications have arisen due to the utilization of different, and often incompatible, data set formats in each country.⁴⁹

Lastly, the unresolved treaty negotiations among the Coast Salish First Nations and the Canadian federal government have added layers of complexity and uncertainty to the work of the Task Force. The majority of treaties in place in B.C. are pre-confederated treaties, and, in fact, most of the First Nations in the Georgia Basin region are not covered by treaties.⁵⁰ This situation leaves the Canadian Coast Salish unsure of which of their rights, if any, are being protected by the government. On the U.S. side, however, the Coast Salish enjoy greater clarification on this issue. The U.S. Coast Salish have agreements in place for fisheries management, zoning, and water quality among other things.

Opposition to the Task Force

While the Task Force has not made any truly harmful enemies, the main criticisms against it have come from the U.S. side. Environmental groups, such as the American Oceans Campaign, have lodged complaints stating that the Task Force is not pushing the Canadians to do their part in tackling the tough environmental issues facing the shared ecosystem.⁵¹ These environmental advocacy organizations will occasionally comment on this issue at the Task Force's public meetings.

ACCOMPLISHMENTS

In spite of the challenges it has faced, the Task Force has been particularly successful in opening the lines of communication between concerned parties in both B.C. and Washington. The practice of information sharing has seemed to benefit the Canadians in particular, since it has brought together agencies and organizations in B.C. that have never before worked together.⁵² However, in addition to greatly increasing the frequency of interaction between various governmental entities on the Canadian side, the Task Force has also been the forum within which U.S. participants have been able to push ahead on the latest wave of more comprehensive ecosystem management-based initiatives.

Participants credit the Task Force specifically with facilitating effective cross-border communication. At Task Force meetings, each member present delivers an update on the

recent activities of his or her agency. This not only provides a direct conduit for information sharing, but it also allows individuals to be brought up to speed on important regional issues which with they may not be intimately involved.⁵³ In light of these benefits and in the face of various logistical challenges, the fact that the Task Force meets on a regular basis is a major accomplishment in and of itself. Fifteen years ago, it was considered a big deal for someone from “the other side” to attend a meeting of one side’s practitioners with the purpose of sharing information. Thanks in large part to the Task Force, this practice has become second nature to those working on environmental issues throughout the Puget Sound-Georgia Basin region.⁵⁴

Short of eliminating the international border all together, the Puget Sound-Georgia Basin International Task Force is “probably working better than any other thing you could do” to effect transboundary ecosystem management.⁵⁵ Genuine effort has been made by parties on both sides of the border to be inclusive in all efforts that are relevant to the work of the Task Force. For example, U.S. members have been invited to attend meetings of the Georgia Basin Ecosystem Initiative, while, likewise, the leaders of the Puget Sound Research Council have redefined their scope to reflect the interconnected nature of the Puget Sound-Georgia Basin ecosystem complex.⁵⁶ These occurrences indicate a clear shift in the mentality of working on transboundary environmental issues in the region. In the last 10 to 15 years, practitioners have gone from barely talking to their counterparts on the other side of the border to actively participating in each other’s activities. Exemplified by the work of the Task Force, this trend toward ecosystem thinking has pervaded organizations throughout the region and has perhaps been the greatest and most far-reaching of its accomplishments.⁵⁷

While some believe that the significant outcomes of a process like the Task Force are more about inclusive cross-border participation than specific ecological results, the Task Force has enjoyed numerous ecological successes. As discussed earlier, open lines of communication between countries prevented zebra mussels from spreading throughout the Georgia Basin and up into the Fraser River. In addition, the results of B.C.-based efforts to monitor the effects of hatchery-raised salmon on native populations have been shared with colleagues in Washington.⁵⁸

The ease with which agencies on both sides of the border are able to learn from each other is one of the more significant outcomes of Task Force involvement. The U.S. and Canada have a historically competitive relationship, as nations of similar stature often do. In light of this reality, it is encouraging and almost surprising that Task Force participants have not been hesitant to borrow ideas from “the other” country. A good case in point is the free-flowing exchange of information between two Task Force work groups.⁵⁹ A U.S. official on the Marine Protected Areas work group essentially copied the successful and well-tested Canadian model and adapted it to meet Washington State standards. This Task Force member was then able to return the favor by lending her expertise on specific protection strategies for marine plants and animals to her Canadian colleagues involved with a different work group.

Special Factors Facilitating Transboundary Action

In a deliberate effort to not reinvent the wheel, the Task Force essentially followed in the footsteps of the Environmental Cooperation Council (ECC) and has greatly benefited as a result. The ECC has been remarkably successful, “attracting the attention of bodies such as the CEC [Commission on Environmental Cooperation] and the IJC [International Joint Commission] as a model of transborder cooperation.”⁶⁰ In its unobtrusive manner, the ECC has been able to catalyze real action and improve lines of communication among a host of stakeholders, ranging from government to the scientific community to citizen interest groups.⁶¹ Like the ECC, the Task Force built from existing governmental frameworks, avoiding the unnecessary and unwelcome extension of bureaucracy throughout the region.⁶² Such simplification has had the unanticipated consequence of requiring that officials in both B.C. and Washington learn more about each other’s differences and seek more creative options for problem solving.

The role of individuals cannot be overstated in a discussion of what has made the Task Force successful in transboundary resource management. In particular, the friendship between Washington Governor Booth Gardner and B.C. Premier Mike Harcourt as well as their personal commitments to environmental causes have been heralded as key to getting the Task Force up and running.⁶³ Similarly, this political endorsement lent prominence and legitimacy to an endeavor with high hopes but no definitive plan for how its goals were going to be achieved.

Individual Task Force members have also been credited with providing critical momentum to the joint effort.⁶⁴ Specifically, an enthusiastic participant from U.S. EPA has been cited as especially essential to the perpetuation of the Task Force. If he had retired six or seven years ago as he had originally planned, it was feared that the whole process would fall apart. However, he only just retired two years ago, leaving a stable and functioning Task Force in his stead. His visionary ecosystem view has now become “engrained in the bureaucratic mentality” of those agencies involved in the Task Force, ensuring that they will work together to protect the viability of the holistic unit.⁶⁵ However, it is still important for the Task Force to be able to rely on its individual members to take the initiative to make things happen within their respective agencies.

CONCLUSION

The Puget Sound-Georgia Basin International Task Force has many bragging points, from establishing effective cross-border procedural strategies to achieving on-the-ground successes in ecological protection. In addition, the precedent set by having a state and province initiate and then enter into what was to become a successful template of a transboundary agreement is particularly significant. The subnational leadership of the Task Force is important to the assertion that not all transboundary work needs to be derived from the federal level.⁶⁶ Although federal participation was sought, Task Force initiators made it clear that they were committed to proceeding with their agenda regardless of whether or not federal officials were involved.

Both observers and participants claim the Puget Sound-Georgia Basin International Task Force has been an overall success to date. The Canadian co-chair cites the 2000 U.S. EPA-Environment Canada agreement, which was modeled after the ECA that established the Task Force, as case in point that this is a model that works.⁶⁷ Although each cross-border region in North America has its own particular details to wrestle with, the experience of the Puget Sound-Georgia Basin Task Force provides a road map for others struggling with the issue of reconciling differing governmental structures for the sake of thwarting impending ecological threats.

Lessons

The Task Force story highlights a number of lessons that can be helpful, when applicable, to future transboundary ecosystem management initiatives:

- **A formal structure can be powerful.** Utilizing established governmental frameworks can be an advantage in that the transboundary effort has direct access to policy and decision makers.
- **Working within existing government frameworks facilitates effective transboundary management.** The U.S. and Canadian partners engaged in this effort are constantly learning from each other and copying each other's best management practices, instead of "reinventing the wheel" or forcing the creation of a new international governmental agency.
- **Political support can get things started.** This project clearly benefited from the fact the Premier and Governor were friends committed to helping each other solve joint problems.
- **Individuals involved at all levels are important.** Beyond political leaders, there are key individuals that have helped keep the Task Force going. Without commitment, from both sides, to the goals of a joint mission, it is doomed to fail.
- **Risk-taking is part of the process.** Transboundary ecosystem management is a tricky and uncertain endeavor, often requiring a leap of faith from where most agency practitioners are used to operating. Its rewards can be great, but only if participants are willing and able to take chances.

Interview Contacts

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- **Gordon Hanson**, Task Force member (Canada), consultant to the Coast Salish Sea Initiative
- **Les Swain**, Canadian Co-Chair of the Task Force, B.C. Ministry of Environment, Lands and Parks

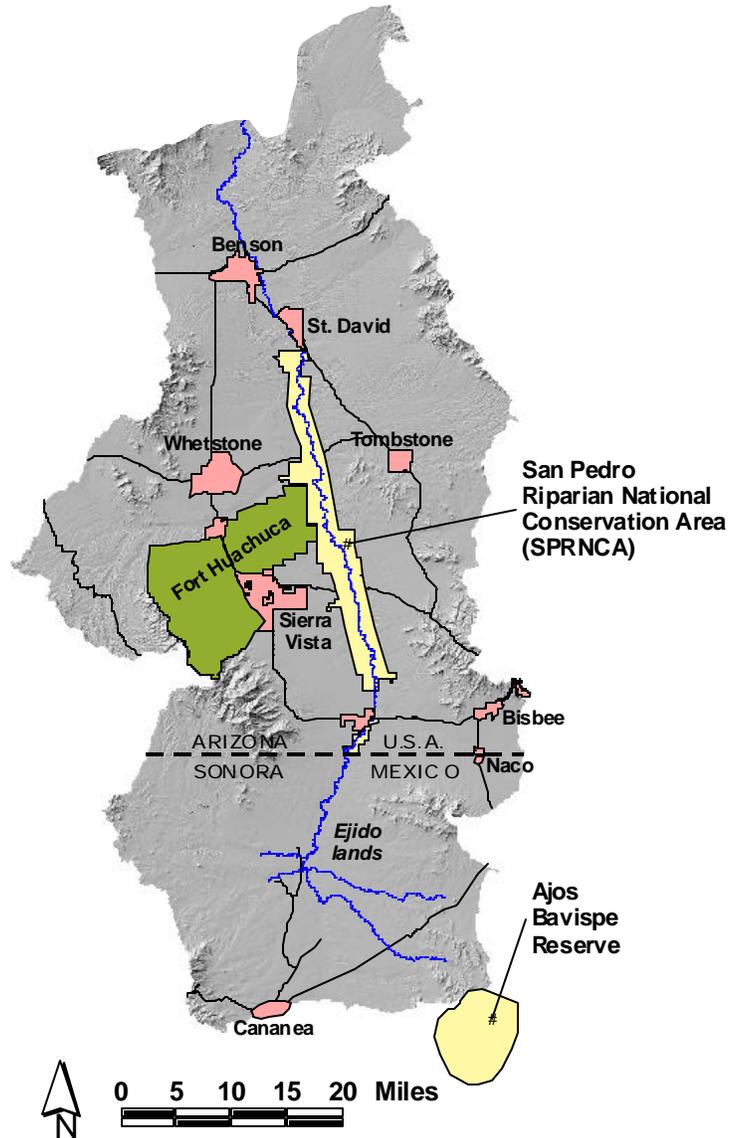
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UPPER SAN PEDRO RIVER BASIN

Arizona, U.S. – Sonora, Mexico



INTRODUCTION

The Upper San Pedro River is one of the last free-flowing rivers in the desert borderlands region, supporting a rich riparian corridor that is critical to local and regional biodiversity. The groundwater aquifer that supports the San Pedro River also sustains the municipal, agricultural and industrial land uses that exist in the basin. Since the early

1990s, resource managers have recognized that the Upper San Pedro Basin and its natural resources are indeed binational and that its management needs transcend the cultural, political, and economic differences across the international border.

This case study outlines a unique, multi-faceted approach to transboundary collaboration that has benefited from the intervention of the tri-national Commission on Environmental Cooperation (CEC), the dedication of individuals working on the ground, and the creativity of high-level officials in designing an unusual conservation program. These discrete yet interconnected programs involving federal agencies, the CEC, and local stakeholders have made significant progress in bridging the information and communication gap between the U.S. and Mexico. While there are several transboundary programs that exist in the basin, this case study will focus on the Upper San Pedro River Basin Issue Team, the Commission for Environmental Cooperation's Upper San Pedro Initiative, and the federal-level San Pedro Binational Initiative.

The programs described in this case study demonstrate that a certain level of transboundary collaboration can occur on an ad hoc basis without a formal international agreement. These on-the-ground activities have played an important role in building the foundation of communication, trust, and understanding. Building from this foundation, the U.S. Department of the Interior and the Mexican Secretariat of the Environment and Natural Resources have been developing a partnership that was initiated through a Joint Declaration. This partnership, the San Pedro Binational Initiative, has facilitated the pending designation of an expanded reserve in the Mexican portion of the basin. If decreed, this reserve will be a significant step towards protecting the Upper San Pedro ecosystem.

This case study also illustrates the usefulness of political champions who are interested in the area and committed to transboundary efforts. The support of the U.S. Secretary of the Interior and his Mexican counterpart have given top-down encouragement to collaborative efforts on the ground and have also made possible a creative and ambitious strategy to overcome some of the barriers to transboundary collaboration. Finally, this case demonstrates how an international institution (the CEC) can be useful to transboundary efforts by providing a forum for information gathering and discussion, which helped to push stakeholders to define and implement management solutions.

Why Transboundary Collaboration?

In 1988, the U.S. Congress established the San Pedro Riparian National Conservation Area (SPRNCA), recognizing the ecological and social values of the river and the need to protect them. Despite this protection, however, the viability of this ecosystem continues to be threatened by groundwater pumping on both sides of the international border. Over that past several years, stakeholders have become increasingly aware that the San Pedro basin is indeed binational, and that any concerted effort to protect the ecological resources of the river will have to address the social, economic, hydrological and ecological conditions on both sides of the international border. The programs described in the case study reflect various approaches to such an effort, building momentum towards ever more inclusive and coordinated management of this transboundary resource.

While these transboundary programs have only begun to address the daunting issue of groundwater allocation, they have made great strides in improving both the level of knowledge about the San Pedro and the communication and understanding between those stakeholders who look after and depend upon it. Through creativity, dedication and innovation, there has been considerable progress towards a more culturally and ecologically connected basin. In 1999, Secretary of the Interior Bruce Babbitt observed: “Looking across the border, the emerging partnership between Arizona and Sonora is a powerful success story. We have come a long way in overcoming the cross-border communication barriers... This is not about compromising sovereignty; rather, [it is] about creating a new model, a common landscape where a new binational culture would be created out of the best of both cultures.”¹

CONTEXT

The 4,000 square mile/6,400 square kilometer² Upper San Pedro River Basin spans the international border between Arizona, U.S.A., and Sonora, Mexico. From its headwaters near the mining town of Cananea, Sonora, the San Pedro River flows north into the United States, passing near the towns of Sierra Vista, Tombstone, and Benson, Arizona towards its confluence with the Gila River, a tributary of the Colorado River. This arid region, known as the Basin and Range Province, is located at the transition zone between the Sonoran and Chihuahuan desert ecoregions. This landscape is characterized by lowland deserts of big sacaton grasslands and desert shrublands that are interspersed with isolated mountain ranges. These mountain ranges, or “sky islands,” are covered with forests of Mexican oak and pine.³

In stark contrast to this desert landscape is the lush riparian corridor of the San Pedro River, consisting of Fremont cottonwood/Gooding willow forests, mesquite *bosques*, and riverine marshlands or *ciénegas*. The San Pedro is one of the last free-flowing rivers in the region, and it supports a riparian forest ecosystem that is recognized to be of critical importance to regional biodiversity, serving as an important stopover for migratory songbirds. This ecosystem also supports numerous species of waterbirds, native fish, reptiles, amphibians and mammals.

Land ownership and management

Home to about 120,000 people,⁴ the Upper San Pedro River Basin consists of a mix of public and private land ownerships on both sides of the international border. Mexico’s San Pedro basin consists mainly of farms and ranches that are owned by private individuals or collectively owned *ejidos*.⁵ *Ejidos* are lands that were established by the Mexican government in 1958 to be used as common lands for the community members (*ejidatarios*).⁶ In the United States, publicly-owned lands in the Upper San Pedro Basin include the Fort Huachuca Military Reservation, Coronado National Forest, Coronado National Memorial, extensive state-owned lands, and lands managed by the federal Bureau of Land Management, including the San Pedro Riparian National Conservation Area (SPRNCA).

In 1988, the U.S. Congress established the 55,000-acre SPRNCA, “to protect the riparian area and aquatic, wildlife, archaeological, paleontological, scientific, cultural, educational and recreational resources of the public lands surrounding the San Pedro River...”⁷ Along with the establishment of the SPRNCA came a land use planning process that included substantial public participation.⁸ This process resulted in the prohibition of mineral development and cattle grazing within the SPRNCA, as well as the retirement of thousands of acres of agricultural land that were formerly used for irrigation.⁹

While most of the Upper San Pedro’s riparian corridor is protected in the U.S. by the SPRNCA, the river corridor enjoys no official protection south of the international border. In Mexico, however, the Ajos Bavispe Reserve (*Reserva Forestal Nacional y Refugio de Fauna Silvestre ‘Ajos Bavispe’*) covers a small corner of the basin’s southeastern headwaters in the Sierra Madre Mountains.¹⁰ This area is managed by the Mexican Secretariat of the Environment and Natural Resources (SEMARNAT)[†]. The recent efforts of the San Pedro Binational Initiative, described below, have been instrumental in planning and implementing a reserve that protects parts of the riparian habitat in Mexico.

Ecological Values

The single largest ecological value of the Upper San Pedro Basin lies in its intact riparian communities. Each year, millions of songbirds migrate between their wintering ground in southern Mexico and Central America, and their summer breeding areas in the U.S. and Canada. In order to cross the landscapes of the Sonoran and Chihuahuan Deserts successfully, these songbirds congregate along some of the few north-south corridors where they can find food, water, and shelter. The San Pedro River is one of those corridors.¹¹

The San Pedro’s lush riparian corridor plays an important role in maintaining both local and regional biodiversity, supporting habitat for migratory songbirds and numerous other wildlife species. A number of these species are threatened, endangered, or rare, including the southwestern willow flycatcher.¹² The riparian habitat that is sustained by the San Pedro is threatened by human impacts that began over 400 years ago.

Historical Human Uses

Since the arrival of Europeans in 1540, human activities in the basin have had a profound effect on this desert ecosystem. Beginning with the introduction of livestock by early Spanish settlers, human activities in the basin have expanded to include irrigated agriculture, suburban development, and copper mining. Over the last 100 years, much of the human settlement and activity has been sustained by pumping from the 50 million acre-foot aquifer that lies beneath this binational basin.¹³

[†] This agency was formerly called SEMARNAP, since it also included Fisheries (*pesca*). For the purpose of clarity, both the current and former secretariats will be referred to by the current acronym, SEMARNAT.

The culmination of human activities, especially groundwater withdrawal, has contributed to the degradation of the San Pedro ecosystem, and the alteration of the river's flow from a largely perennial to a largely ephemeral stream system.[‡] As a result, the riparian forests and grasslands along the river that are dependent on groundwater inflow have become more vulnerable to climatic fluctuations.¹⁴

Competing Economic Values

The human communities that have flourished in the San Pedro basin have done so because of the availability of groundwater. Economic activities, ranging from agriculture to mining and municipal use, are inextricably linked to the same groundwater aquifer that sustains the San Pedro ecosystem. Among the basin's largest water users is *Mexicana de Cananea*, one of the largest open-pit copper mines in the world. This mine is located on the southwestern edge of the basin near the town of Cananea.¹⁵ Other major water users in Mexico's part of the basin are *ejidatarios* and other agricultural users, who have taken advantage of larger pumps that have become available in recent years.¹⁶ Ejido reforms in the early 1990's allowed for the sale of common lands to private farmers. These reforms have changed some of the agricultural land uses, leaving some observers to believe that groundwater pumping has expanded in the past decade.¹⁷

In Arizona, the largest single water user is the Fort Huachuca Army Base, located near Sierra Vista. While the Fort has taken strides to reduce its water consumption,¹⁸ these reductions are offset by residential growth in the area and its associated water needs. The Sierra Vista area is estimated to be one of the fastest growing in Arizona.¹⁹ While irrigated agriculture was greatly reduced in the U.S. part of the basin by the SPRNCA designation, its groundwater use is still significant, especially in the Benson area.²⁰

The economic values of the San Pedro's groundwater quite literally competes with its riparian ecosystem. While 53 percent of the total groundwater depletion in the Arizona portion of the basin is for municipal and agricultural uses, 42 percent comes from evapotranspiration from the vegetation along the riparian corridor.^{§ 21} As the human population grows, the groundwater deficit (withdrawals vs. inflow) will increase, lowering the water table along the river and increasing the competition between the basin's natural and human communities.

Socioeconomic Considerations

The prospect of limiting groundwater use in the basin directly conflicts with its economic viability. As Fort Huachuca and the Cananea copper mine are the basin's single largest consumers of groundwater, they are also the primary economic engines on their respective sides of the border.²² Forty percent of the employment in Cochise County, Arizona is associated with Fort Huachuca, which has been a presence in the region for 120 years. Similarly, the copper mine supports a significant part of the population in and

[‡] At least seven miles of the system remain perennial. Besides human impacts, changes in the river's flow have also been attributed to an earthquake in 1887.

[§] Groundwater depletion data is unavailable for Sonora.

around Cananea. These institutions have been and will continue to be important stakeholders in the San Pedro basin.²³

Over the past century, heavy livestock grazing in Arizona's part of the basin has caused many of the native grasslands to convert to desert scrub. In Mexico, grazing in recent years has been less intense, especially on the *ejido* lands, which has allowed many of the grasslands to recover to their natural state. These increased resource values have enhanced the value of the areas to wildlife viewing and hunting.²⁴ Recognition of these potential economic values of an intact ecosystem can help empower citizens on both sides of the border to better coordinate opportunities for conservation and tourism throughout this binational basin.

Barriers to Transboundary Collaboration

While the basin economies on either side of the border are equally connected to the river and its associated groundwater system, the cultural and socioeconomic differences between countries are quite pronounced. These obvious differences have often been a hindrance to cooperation across the international border, where different customs, laws, and settlement patterns prevail. A significant barrier has been the language difference. While many natural resource professionals on either side of the border are bilingual, most of the broader stakeholders in the basin are not. This has been an impediment to the development of public dialogue on issues concerning the basin-wide community.

The border itself has also been a physical barrier to binational research and management activities in the basin. One Mexican scientist working in the region noted that one of the largest barriers to his work has been dealing with customs and the Border Patrol in the U.S., as well as problems with the police and army in Mexico who are looking for illegal aliens and drug traffickers.²⁵ These border issues reflect some of the economic differences between Mexico and the U.S. that have made it difficult to coordinate resource management activities across the international border.

In the U.S. part of the basin, there is growing concern about the health of the river, and a great deal of effort has been focused (albeit amid controversy) on how water use can continue without further impacting the ecosystem. Despite these concerns however, everybody on the U.S. side of the basin has clean water to drink. In Mexico, people's primary concerns are much more immediate, relating to the quality and availability of drinking water.²⁶

Different natural resource priorities have made it difficult to coordinate research and management activities throughout the basin, as the state and federal governments in Mexico have been focused on other, more pressing issues in the region.^{**27} As one Department of Interior official described, "for on-the-ground cooperation, the biggest

** The Sonoran government has, for the past two years, been providing water to the City of Cananea while also working to mitigate water quality concerns in Rio Sonora. Sharing its headwaters and mining contamination concerns with the San Pedro near Cananea, the Rio Sonora flows south towards Sonora's capital city of Hermosillo.

barrier was that the Mexican federal government was not very focused on the San Pedro for a long time, so there really weren't very many people to work with."²⁸

The increasing role of Mexico

Over the last several years, there has been a marked increase in the level of Mexican involvement in the basin. This growing role can be partially attributed to an overall rise of natural resource issues in the national policy agenda. Since 1995, the federal government of Mexico has substantially increased its level of support for protected area designations, management and operations. Now, the San Pedro is included in a larger effort by the Mexican federal government to provide adequate management to natural resources and biodiversity in northeastern Sonora.²⁹

Along with a greater overall recognition of the San Pedro's resources, pressure from American organizations has also helped turn Mexico's attention to the San Pedro.³⁰ These organizations have included The Nature Conservancy, which listed the San Pedro among its Last Great Places of the Western Hemisphere;³¹ American Rivers, which placed the San Pedro on its 1999 Most Endangered Rivers list;³² the American Bird Conservancy, which in 1996 considered it to be a Globally Important Bird Area;³³ and the Center for Biological Diversity.³⁴ Programs and initiatives by resource management agencies and the Commission on Environmental Cooperation have also raised Mexico's awareness of the San Pedro. These programs are discussed in detail below.

Trust, understanding, and goodwill

Despite the increased attention that the federal government is giving to the basin, the Mexican natural resource agencies that are working in the San Pedro are operating with limited resources (compared to their U.S. counterparts) to conduct research and develop management options for the basin.³⁵ Indeed, while the Cananea mine is a significant economic engine for the region, most of the profits flow out of the basin leaving very few resources for social programs and ecosystem protection.³⁶ The Mexican resource management agencies are very committed to protecting the San Pedro ecosystem, but limited staff and funding has made it difficult to achieve their conservation goals in a short period of time.³⁷

In addition to the disparity of resources and information across the border, there has been a lack of communication, coordination and understanding between the communities on either side. This resulted in a certain amount of mistrust and "finger-pointing" among the basin's citizenry over who is to blame for the San Pedro's woes. Mexican resource managers, the Cananea mine, and *ejidatarios* have often been disparaged by American citizens for neglecting the resources on their side of the basin. Some contend that these charges are inaccurate,³⁸ illustrating that they only exacerbate the barriers to trust and cooperation. The real issue here is groundwater, and many stakeholders, such as the Cananea mining company, are very protective of information about this resource. As one American researcher explains, "there's a sentiment that if they let us know what they have we're going to take it."³⁹

This lack of trust, which is exacerbated by the cultural and economic barriers to collaboration across the border, illustrates that there is much to be done in terms of developing a greater sense of connection and community throughout the San Pedro basin. However, while these socioeconomic barriers to collaboration are persistent, they can be overcome by expressions of goodwill and reciprocity. As one researcher explains, the communities on either side of the border can have very different concerns and priorities: “If you go down to Mexico and talk about water, they’re going to want to talk about public health.” She goes on to point out, “That’s where people on the U.S. side can really offer something”⁴⁰ in terms of technical assistance, resources and expertise.

By recognizing and addressing the core concerns of the Mexican citizens and assisting with such things as water quality monitoring and restoration, agencies and researchers that are concerned with the ecological health of the San Pedro can help galvanize support among Mexican citizens, governments, and perhaps in time, the Cananea mine.⁴¹ In one small but significant example of goodwill, the Huachuca Audubon Society in Arizona donated Spanish-language ecology books to teachers in Mexico.⁴²

Political Considerations

Besides the differences in economic resources and opportunities on either side of the border, the level of political advocacy and activism is also very different between American and Mexican parts of the San Pedro basin. Cochise County, which comprises most of the American part of the basin, is considered to be one of the most politically conservative areas in the region, with vocal property rights and anti-government contingencies.⁴³ To many local citizens in this part of Arizona, it makes no sense to allow the consumptive water use of the riparian vegetation to limit economic growth.⁴⁴ Given this tradeoff, the ecological values of the river are of minor importance, as evidenced by a Sierra Vista city councilman’s statement that, “If the San Pedro is a national treasure, we are an impoverished nation. You can’t drown a fish in it.”⁴⁵

Much of this local resentment to efforts to protect the San Pedro comes from long-term rural landowners and developers, who are hostile towards “outside” interference in local land and water use issues, including those on state or federally-owned lands. Many locals in Cochise County are still bitter over the retirement of traditional grazing and agricultural land to create SPRNCA.⁴⁶ The increased presence of local and national environmental organizations has been effective in raising the cause of the San Pedro, but it also has fueled the fears of property rights activists.⁴⁷ As a result, there have been sharp divisions in the community, with factions falling along very adversarial lines.⁴⁸ However, the recent creation of the Upper San Pedro Partnership in the U.S. part of the basin (described below) has helped bring these forces together, and “people are really working together pretty well these days.”⁴⁹

In Mexico’s part of the basin, there are no organized property-rights or anti-government groups, and fewer advocates for ecological protection than there are on the U.S. side.⁵⁰ Instead, the politics of the basin are largely driven by the economic power of the Cananea mine, which has traditionally dominated water policy and management. A researcher in the basin explains that the mine has “more political clout than any of the local

governments and all of the federal agencies,” as evidenced by disputes over water supply to the city of Cananea.⁵¹ The Nature Conservancy’s U.S.-Mexico Coordinator continues: “The mining company is... incredibly powerful. They bring in quite a bit of revenue to the State of Sonora, so they are a powerful enemy or ally, depending on whose side you’re on.”⁵² Lasting protection of Mexico’s San Pedro will have to include the mine but will also require a strengthening of local governments, agencies and community leaders in the basin.⁵³

Recognition of a Transboundary Resource

Over the past 400 years, early settlers and modern communities have learned how to live and prosper in the arid environment of the San Pedro basin. Now, human activities on both sides of the international border are nourished by the same transboundary groundwater aquifer that sustains the riparian ecosystem of the San Pedro. In this competition for water, the river has been losing.

While much of the riparian corridor is now protected within Arizona, the viability of the river is still threatened by groundwater pumping throughout the binational basin. In recent years, researchers, resource managers and policy makers have realized that they cannot address these issues by looking at only part of the puzzle. The fate of the San Pedro river and the groundwater aquifer that sustains it – resources that both the human and natural communities of the basin are vitally dependent upon – are inextricably connected on both sides of the border.

Despite the cultural and economic differences that have made Arizona and Sonora seem like different worlds, stakeholders in the San Pedro basin are beginning to recognize these connections, and the need for better coordination across the border to address water issues that pertain to the entire basin. The following programs illustrate how resource managers and stakeholders in the basin have been working to improve communication and cooperation across the border in order to articulate and implement solutions as a basin-wide community.

APPROACH TO TRANSBOUNDARY MANAGEMENT

The 1988 establishment of the BLM’s San Pedro Riparian National Conservation Area (SPRNCA) illustrated the ecological importance of the San Pedro and the need to protect its unique resources. The threats to these resources, however, are much more widely distributed throughout the basin than just along the river. Despite the protection of the SPRNCA, the San Pedro ecosystem remains vulnerable to development and water withdrawals on both sides of the international border. Along with increasing recognition of the San Pedro’s importance, momentum has been gathering over the past decade to protect the San Pedro as a transboundary resource. This momentum comes in the form of several separate but very connected programs, events, and initiatives— these include the Upper San Pedro River Basin Issue Team, the CEC Upper San Pedro Initiative, the San Pedro Binational Initiative, and other transboundary activities.

Upper San Pedro River Basin Issue Team

Beginning in 1986, the Bureau of Land Management (BLM) made several attempts to contact their counterparts working in the Mexican part of the basin. While the BLM had no experience working across the border, they made some initial contacts, and with the help of The Nature Conservancy and the Arizona-Mexico Commission,^{††} these relationships were fostered and expanded over the years.⁵⁴

In 1994, the U.S. Department of Interior (DOI) organized the United States-Mexico Border Field Coordinating Committee (FCC) to harmonize activities among the various DOI agencies that were working along the U.S.-Mexico border.⁵⁵ Recognizing that the San Pedro was an area of high interest to many DOI bureaus, the Upper San Pedro River Basin Issue Team was established to determine how the individual bureaus could work with each other, and with their counterpart natural resource research and management agencies in Mexico.

Capitalizing on the contacts that the BLM and other DOI agencies had previously established in Mexico, representatives from SEMARNAT, IMADES (Institute for the Environment and Sustainable Development for the State of Sonora), and other research institutions became involved in the Issue Team shortly after its inception.^{††56} The Issue Team Coordinator explains: “Inviting Mexican representatives to participate on the Issue Team was a natural and they began their participation very early.”⁵⁷ Since its inception, the Issue Team has become a useful forum for building relationships and improving communication between resource managers, researchers and other stakeholders in this binational basin.

The membership of the Issue Team is not fixed—it varies depending on the issues being considered. Primary participants generally include the DOI agencies, IMADES, SEMARNAT, local and state governments and agencies, universities in Arizona and Sonora, and non-governmental organizations such as The Nature Conservancy, the Sonoran Institute, Huachuca Audubon Society, and the Friends of the San Pedro River.⁵⁸

Principal Transboundary Actors

- U.S. Department of Interior agencies (BLM, USGS, NPS, etc.)
- Mexican Secretariat of the Environment and Natural Resources (SEMARNAT)
- Commission for Environmental Cooperation (CEC)
- Institute for the Environment and Sustainable Development for the State of Sonora (IMADES)
- Udall Center for Studies in Public Policy at the University of Arizona
- Semi-Arid Land-Surface Atmosphere Program (SALSA)
- The Nature Conservancy

^{††} The Arizona-Mexico Commission is a non-profit commission dedicated to improving the economy and way of life in the Arizona-Sonora region by utilizing cultural, economic, human, natural and technical resources.

^{‡‡} In addition to the greater Issue Team activities, the National Park Service and the U.S. Geological Survey have been working with SEMARNAT since 1998 on cooperative fire and wildlife studies between the Ajos Bavispe Reserve in Sonora, and Chiricahua National Monument in Arizona (east of the San Pedro basin). As “sky islands,” these sites share a similar ecology, but have different histories of land use and fire suppression.

Issue Team activities have included a binational resource management training, coordinated habitat management, and joint studies of neotropical migrant bird species.⁵⁹

For the first several years, the Issue Team met regularly to develop better understanding of the participants and resources on either side of the border. These activities, which included field trips and joint research projects, helped facilitate the development of trust and the sharing of information across the border. This cross-boundary exchange of information and ideas has been bolstered by a sense of top-down encouragement and support for transboundary activities within the agencies.

This top-down encouragement, however, took place without any official binational agreement or declaration. Instead, the relationships and trust that were established by the Issue Team laid the groundwork for a more ambitious initiative in 1999 that was established by a Joint Declaration (see below). One thing that enabled the Issue Team to move forward was the support that has come from agency supervisors, the FCC program, and Secretary of Interior Bruce Babbitt himself. An Arizona native, Babbitt effectively championed protection efforts in the San Pedro and has helped build the momentum for transboundary consideration of the basin's resources.⁶⁰

As Issue Team activities began to slow down in 1996, the Commission for Environmental Cooperation (CEC)^{§§} took center stage with an initiative to study the resources of the binational basin.⁶¹ Because of all of the activity relating to this study, the Issue Team stopped meeting regularly until 1999, when it resurfaced with occasional meetings and activities.⁶²

CEC Upper San Pedro Initiative

In 1996, the Southwest Center for Biological Diversity petitioned the CEC to investigate whether Fort Huachuca violated the National Environmental Policy Act (NEPA) by failing to address the impacts of Fort activities and associated groundwater depletions on the San Pedro system. Recognizing the SPRNCA as an Important Bird Area, the CEC launched its Upper San Pedro Initiative in 1997.⁶³ While it was not well received on the U.S. side of the basin, this CEC Initiative was effective in pushing the stakeholders to articulate their options for protecting both human and ecological needs in the Upper San Pedro River basin.

The CEC's Initiative set out to investigate the ecological, biohydrologic, socioeconomic and institutional conditions in the Upper San Pedro basin, evaluating a range of solutions that were under consideration by stakeholders.⁶⁴ In addition, the CEC wanted the study to serve as an example of how to protect a transboundary watershed.⁶⁵ An Expert Study Team, consisting of scientists from both the United States and Mexico, was in charge of the study.⁶⁶ While members of the Issue Team were not on the Expert Study Team, they contributed through interviews and reviews of the study.⁶⁷

^{§§} The CEC is a trilateral institution set up by a side agreement to North American Free Trade Agreement (NAFTA) to facilitate cooperation and public participation in conserving the natural environment within the context of increasing economic and social links between the US, Canada and Mexico. The CEC also investigates allegations of non-enforcement of environmental laws by member nations.

Though it was funded and organized from outside the basin, the CEC initiative played a major role in galvanizing interest and encouraging a broader dialogue about the issues in the San Pedro.⁶⁸ At the outset, the local communities in the U.S. were suspicious of the CEC and promptly opposed the study. One local official characterized this sentiment, calling the CEC “an arrogant group of internationalists coming here telling us what to do.”⁶⁹ Tensions calmed over time, as many communities recognized that this outside expertise might be able to help them with their water supply problems.⁷⁰ During the preparation of the draft report on the San Pedro, the CEC commissioned a public input process at the request of the local communities.⁷¹

Public Input

In 1998, the Udall Center for Studies in Public Policy at the University of Arizona (Udall Center) conducted the public input process for the CEC study.⁷² This process, based mainly on U.S. stakeholders, demonstrated that there was broad-based appreciation for the river, recognition of the shared interests and responsibilities between stakeholders, support for sharing the burdens of conservation among water users, and a desire for local participation and control. However, many participants criticized the CEC study for not adequately addressing hydrologic conditions in Mexico and the impact of Mexican economic activities on the system.⁷³ The results of this process were considered in the final draft of the technical report.⁷⁴

CEC Report

In 1999, the final draft of the CEC’s report was released. The report, *Ribbon of Life: An Agenda for Preserving Transboundary Migratory Bird Habitat on the Upper San Pedro River*, included some of the following primary recommendations:

- Reduce irrigated agriculture in the Mexican side of the basin
- Limit irrigated agriculture extractions on the U.S. side of the basin
- Develop water conservation and recycle/recharge initiatives to reduce municipal and domestic water demands
- Establish a binational, coordinated planning structure to develop a comprehensive water planning and management plan⁷⁵
- Create a protected area in Mexico’s part of the basin⁷⁶

Water conservation and recharge projects were widely accepted, and are beginning to be implemented in the U.S.⁷⁷ However, the reduction of irrigated agriculture, seen by the CEC to be the most economically feasible solution, was severely criticized on both sides of the border because of its social implications.⁷⁸ Some citizens were concerned that the solutions unfairly targeted agricultural users, while failing to address growth management around Sierra Vista. As one citizen put it, “there is too much emphasis on politically easy solutions like retiring agriculture rather than the politically more difficult solution of cutting urban growth.”⁷⁹

The calls for drastically reducing irrigated agriculture in the basin have been cause for alarm among the farmers, ranchers and *ejidatarios* who depend on irrigation for their livelihood.⁸⁰ While some American participants in the CEC process argued that Mexico

should do its fair share to reduce groundwater use, others were concerned that such measures would have a disproportionate impact on Mexican citizens. “Is it a fair solution, (that is) just, given the economic consequences to an already deprived region?” asked one participant.⁸¹ It is interesting to note that, consistent with some of the complaints about the CEC report, it makes little mention of the possibilities of limiting water consumption by the Cananea copper mine. The mine is the single largest water user in the basin, which already has had an impact on the ability of nearby *ejidos* to pump the groundwater needed for agriculture.⁸²

Binational Coordinated Management

Another recommendation by the CEC included a binational, basin-wide coordinated resource management program. This idea of better coordinated, transboundary management of the basin is not new; one of the original long-term goals of the Issue Team was to eventually develop a management plan for the entire basin that would be compatible with the laws and needs of both countries.⁸³ There has also been persistent mention of the formation of a binational commission that would coordinate water and resource management in the basin,⁸⁴ and many resource managers and citizens in Mexico are interested in the formation of a watershed council that would be similar to the San Pedro Partnership^{***} in the U.S.⁸⁵ Despite the debate over whether such an organization should be a governmental commission or a grassroots watershed group,⁸⁶ most observers feel that some sort of binational entity is possible.⁸⁷ Many however, feel that the establishment of a watershed council in Mexico would be the first of many steps toward the long-term goal of binational coordination.⁸⁸

The final recommendation by the CEC was to establish a protected area in the Mexican part of the basin.⁸⁹ While this solution has been widely supported, many stakeholders in the basin have recognized that the creation of such a reserve would be difficult for Mexico’s cash-strapped government, and would surely meet resistance from the Cananea mine. By 1999, however, a unique binational partnership would make this vision seem possible, or even likely.

San Pedro Binational Initiative

Following the release of the CEC report on the San Pedro in 1999, U.S. Secretary of the Interior Bruce Babbitt and Mexico’s Secretary of the Environment and Natural Resources (SEMARNAT) Julia Carabias launched the San Pedro Binational Initiative. Building off of the existing work in the field, these two leaders developed a very unique and creative approach to transboundary conservation. By signing a Joint Declaration, Babbitt and Carabias formalized the sharing of funds, information, and conservation expertise across the border.⁹⁰ The most significant and unusual aspect of the Initiative was a program to designate a protected area in the Mexican part of the basin that would be paid for by \$1.5 million from private U.S. sources. In addition, the U.S. Department of Interior announced plans to use Land and Water Conservation Fund money to purchase additional land and water rights within Arizona.⁹¹

*** Described below, the Upper San Pedro Partnership is a collaborative partnership of eighteen agencies and organizations that is seeking to better coordinate water management in the U.S. part of the basin.

Working with partners such as the World Wildlife Fund and the National Fish and Wildlife Foundation, the Department of Interior arranged for funds to be put into the Mexican Fund for the Conservation of Nature, *Fondo Mexicano*.⁹² Portions of this trust fund were to be used for the establishment of a large protected area that would encompass the San Pedro River in Mexico. According to its preliminary design, the Mavavi Biosphere Reserve would be an expansion of the existing Ajos Bavispe Reserve that would include much of the San Pedro corridor under a higher level of protection.⁹³

Mavavi Reserve designation

During the initial phase of discussions about the Mavavi Reserve, Hector Arias, a prominent researcher in the basin, was working on a plan to compensate farmers for not pumping groundwater. This plan fell through when Arias took a job outside of the basin. Now, the Reserve design is focused on protecting the land.⁹⁴ In November, 2000, the Mexican federal government published a notice to decree the Mavavi Biosphere Reserve in the San Pedro basin. Public notice of the decree allows interested parties to raise concerns with the National Commission for Protected Natural Areas (CONANP – a subsidiary of SEMARNAT).⁹⁵

The original Mavavi Reserve design included core protected areas along the San Pedro River near the Cananea mine operations. Due to concerns expressed by the mining sector during public hearings, adjustments were made to the reserve design. Now, CONANP is conducting additional public meetings and is developing a management plan for the Reserve. The management plan will establish the uses, zoning, and proposed actions for operation and administration of the area. CONANP plans on submitting a final Mavavi Biosphere Reserve Decree by the end of 2001.^{††† 96}

While this proposed reserve would expand the visibility and protected status of much of Mexico's part of the basin, the fact that it does not directly address water use has drawn criticism from some of the people who are working in the basin.⁹⁷ Others, however, are optimistic that the Mavavi Reserve will be a step towards protecting the river, by providing the recognition and funding that will

Significant Milestones

- 1988**- San Pedro Riparian National Conservation Area created in the United States.
- 1994**- Upper San Pedro River Basin Issue Team established among U.S. and Mexican agencies.
- 1997**- Commission for Environmental Cooperation (CEC) initiates a study of the basin.
- 1999**- CEC *Ribbon of Life* report completed
- 1999**- San Pedro Binational Initiative launched by Joint Declaration between the U.S. DOI and SEMARNAT.
- 1999**- Transboundary *Divided Waters-Common Ground* Conference held.
- 2000** - Notice to decree the Mavavi Biosphere Reserve published by the Mexican government.

^{†††} The Mavavi Biosphere Reserve Project is included in Mexican President Vicente Fox's National Crusade for Water and Forests because of its role in the border region. This initiative will work for protection of the resource and the promotion of more efficient water use through public participation.

promote more efficient water use.⁹⁸ As a researcher at the Udall Center put it, “I would agree that creation of the reserve doesn’t address that, but it’s a step towards addressing that- it’s a step towards protecting the area, and it raises awareness that this is a resource that is nationally and internationally valued.”⁹⁹

Facilitating Factors

While transboundary activities involving federal-level agencies had been going on for several years, this higher-level initiative necessitated the signing of a Joint Declaration to formalize the agreement to establish the protected area. However, despite this semi-formal governmental endorsement, the structure of this program has been loose, focusing on a specific goal and involving a small number of stakeholders. The apparent effectiveness of the Binational Initiative has been largely credited to Babbitt’s level of interest in the area, and his relationship with Carabias. As described by a DOI official: “The Babbitt-Carabias relationship and friendship really helped... They’ve become really good friends over the last five years, and I think because of that friendship they have enough trust in each other to sign this Joint Declaration and agree to do something in the basin.”¹⁰⁰ This relationship has been a powerful force in building trust across the border and leveraging the resources to make the Mavavi Reserve possible.

Other Transboundary Activities

SALSA Program

Besides the transboundary programs and events described above, there have been several other programs and efforts that have greatly enhanced the spirit of binational cooperation in the San Pedro basin. One of the most significant of these has been the Semi-Arid Land-Surface-Atmosphere (SALSA) program. Consisting of researchers from the United States, Mexico and Europe, the goal of the SALSA program is “to advance scientific understanding of the hydrology and ecological diversity of semiarid regions in order to provide reliable information for natural resource decision making.”¹⁰¹

With a purpose and participation that has been closely related to that of the Issue Team (above), the SALSA program has made a significant contribution to the current understanding of the basin’s resources and has also been instrumental in advancing the cause of binational coordination. Following the CEC study, the SALSA program sponsored a binational conference in 1999.

At the *Divided Waters-Common Ground* conference, participants spent the first day in Cananea, Sonora, the second day along the river, and the third day in Bisbee, Arizona to better understand the San Pedro basin in its entirety. The objectives of the conference were to foster knowledge exchange, communication, and cooperation across the border, and to obtain future research direction from resource managers, decision-makers, and the public.¹⁰² This conference was recognized as a landmark event that will help take the transboundary preservation of the San Pedro into its next phase of development.

Local Outreach

Several other programs have also contributed to transboundary coordination and understanding in the San Pedro. For example, The Nature Conservancy has been

working with IMADES on community outreach work in Mexico, hoping to help communities maintain a livelihood in the basin while minimizing their impacts. These activities have also included community-based monitoring efforts that can help enhance the level of involvement of these communities in understanding and protecting the ecological resources of the basin.¹⁰³

Upper San Pedro Partnership

Limited to the U.S. part of the basin, the Upper San Pedro Partnership has become an important force for collaborative decision making among the American agencies, municipalities and organizations that are involved. Consisting of eighteen local, state, and federal agencies, as well as several non-governmental organizations, the Partnership has been working toward the development of a comprehensive water resources plan for the U.S. part of the basin.¹⁰⁴ Despite criticism that this partnership has inadequate public involvement,¹⁰⁵ it has become an important asset for cooperative management and discussion in the U.S. If a watershed council or similar entity could be created on the Mexican side of the basin, the Partnership could interface with that entity to enhance binational coordination.¹⁰⁶

Each with its own unique purpose, these various programs and efforts greatly contribute to a “culture of cooperation” in the basin. They illustrate that collaborative problem solving is possible and set a precedent for the larger, more ambitious transboundary efforts that are described above.

ACCOMPLISHMENTS

Coordinated management and protection of the transboundary San Pedro basin is far from complete, but there have been many accomplishments to date. The increased communication and cooperation between U.S. and Mexican researchers and resource managers is a positive end in itself.¹⁰⁷ This coordination and sharing of information, as well as a more sophisticated use of technologies such as Geographic Information Systems and remote sensing, has greatly enhanced the collective understanding of the basin’s resource base.¹⁰⁸

The fundraising activities in the U.S. to help Mexico establish the Mavavi Reserve was a significant and creative accomplishment on the part of federal officials and non-governmental organizations.¹⁰⁹ While the surface protections of the reserve will not directly affect water use, it will add a layer of protection and recognition to the area. This increased attention could help attract additional funding and technical expertise that can help make agricultural operations more water-efficient.¹¹⁰ If the Mavavi Reserve is decreed, its establishment through the Binational Initiative will be a boost for protection efforts in the San Pedro basin and will also set the stage for a more comprehensive approach to transboundary conservation.

Another important outcome of the transboundary initiatives in the San Pedro is the increased awareness of basin resources on both sides of the border. In Mexico, there is

an increased awareness that the river is an ecological resource, and that the condition of Mexico's part of the basin should be a source of pride.¹¹¹ In the U.S., there is increased awareness that the issues and resources surrounding the San Pedro are indeed binational, and they have had to learn to work with a neighbor, that according to one researcher, "they didn't consider from the point of view of management."¹¹²

Despite all of the progress made in coordinating research, management, and administration, the core issue of water hangs like a dark cloud over all of these activities. "You can't just turn back the clock," says the BLM's Issue Team Coordinator, "so you have to decide how you're going to deal with the increased development that is going to occur and still protect the river."¹¹³ The sheer magnitude of this issue is still present, despite the notable progress of these efforts. Little has been done to address urban growth in Arizona, and the Cananea mine will be a continuous threat to the viability of conservation efforts in Mexico.¹¹⁴

Over the past decade, the momentum towards coordinated transboundary resource management in the San Pedro basin has increased, with several new initiatives and events. Throughout all of this, the people who have been involved in these processes have learned valuable lessons. The DOI's U.S./Mexico Coordinator points out that it is important that the U.S. is not too far ahead of Mexico, and that both countries come together "as equal partners with common priorities, and mutual concerns."¹¹⁵ Because of Mexico's limited resources and the difficulties of working across an international border, patience is important.¹¹⁶

CONCLUSION

While the barriers to coordinating resource management and research across the U.S./Mexico border have been daunting in the San Pedro, the energy and commitment has been dedicated to overcome these barriers is encouraging. With all of these transboundary programs and efforts in the region, the momentum towards more coordinated resource management throughout the binational basin is growing. These programs have not solved the basin's imposing groundwater issues, however, and the San Pedro is still threatened by economic activities. What these unique efforts have done is develop a better understanding of what the basin community's conservation options are, and establish the trust and communication channels that are essential to tackling these issues as a basin-wide community. These accomplishments will set a firm foundation for continued efforts to preserve ecological integrity of the San Pedro River along with the communities that depend on it as a valuable, transboundary resource.

Lessons

The efforts and programs that were investigated for this case study revealed the following lessons about transboundary resource management:

- **The involvement of high-level government officials is useful in leveraging resources and encouraging transboundary, inter-agency collaboration.** The

relationship between U.S. Secretary of the Interior and Mexico's Secretary of the Environment and Natural Resources was important in facilitating transboundary collaboration among resource management agencies. The support of these leaders gave a sense of top-down encouragement to transboundary, inter-agency efforts such as the Upper San Pedro River Basin Issue Team. In addition, their relationship was critical in developing the San Pedro Binational Initiative, a creative approach to expanding the protection of the San Pedro ecosystem.

- **An official transboundary agreement can be helpful in leveraging funding, recognition and support for collaborative programs.** While the Issue Team made significant progress without any sort of binational agreement, the more ambitious objectives of the Binational Initiative necessitated the signing of a Joint Declaration between high-level agency officials. It is important to note that a formal, international treaty was not needed.
- **While informal, ad hoc coordination can be effective, the creation of a formal binational structure is recognized to be necessary for a long-term collaborative process.** Various ad hoc efforts have been useful in developing relationship, trust and communication. While these efforts have been useful in gathering momentum towards protecting the San Pedro, many participants recognize the future need for a coordinated binational board or management plan to effectively address difficult groundwater issues.
- **Public involvement is important, and should to be integrated early in the process.** While most of the binational programs in the San Pedro basin have sought public involvement on an as-needed basis, their lack of public involvement has drawn criticism. Some of the officials in the basin recognize the need for increased public involvement, and lament having not initiated it earlier in the process.
- **The involvement of an international institution can help facilitate dialogue about transboundary resources that may result in the development of possible resource management solutions.** While the Commission for Environmental Cooperation's study of the basin was seen at first to be an outside interference in local affairs, it helped draw the attention of to the issues in the basin, and also helped stakeholders begin to articulate management strategies. Several of those strategies are beginning to be implemented.
- **Efforts of goodwill and understanding that recognizing the socioeconomic needs of transboundary partners can be effective in promoting a greater sense of community.** Since Mexico has limited resources to commit to the San Pedro, initiatives that bring resources to the table, such as funding or support, have helped Mexico become an equal partner in protecting the river. Besides making conservation actions more feasible, these initiatives also break down the barriers of misunderstanding and mistrust that can impede the development and sustainability of transboundary efforts.

- **It is important that both nations come together as equal partners, and that the interests of one are not forced upon the other.** While the U.S. and Mexico have many common goals towards protecting the river, they also have their differences in economic realities. It is important that U.S. agencies and organizations continue to recognize this and find creative ways to overcome these differences.
- **It is important to recognize small gains and not get bogged down by the sheer magnitude of some issues.** The groundwater issues in the San Pedro basin are imposing, and a more coordinated transboundary management structure to deal with this core issue is far from a reality. However, substantial progress has been made in many areas, and it is important to recognize those incremental steps towards protecting the San Pedro ecosystem.
- **Transboundary work can take much longer than expected, so patience is important.** Working through the barriers transboundary collaboration, it has taken a long time to develop the relationships and communication that are necessary for effective transboundary collaboration and eventual ecological achievements.

Interview Contacts

- **Hector Arias**, World Wildlife Fund – Mexico
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- **Celia Pigueron**, National Commission for Protected Natural Areas (CONANP), Mexican Secretariat of the Environment and Natural Resources (SEMARNAT)

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APPENDICES

APPENDIX A

CASE STUDY SUMMARIES

The following case study summaries describe the transboundary programs and efforts that were not selected for in-depth analysis.

- **Big Bend Region**
Texas, U.S. & Chihuahua and Coahuila, Mexico
- **Garrison Diversion**
North Dakota, U.S. & Manitoba, Canada
- **Great Lakes United**
8 U.S. States & Ontario and Quebec, Canada
- **Great Plains Partnership**
13 U.S. States, Canada, Mexico
- **International Porcupine Caribou Treaty**
Alaska, U.S. & Northwest Territories, Canada
- **Kootenai River Sturgeon**
Montana and Idaho, U.S. & British Columbia, Canada
- **Laguna Madre**
Texas, U.S. & Tamaulipas, Mexico
- **Milk-St. Mary's Watershed**
Montana, U.S. & Alberta, Canada
- **North Cascades Ecosystem**
Washington, U.S. & British Columbia, Canada
- **Rio Grande Basin Commission**
3 U.S. States & 5 Mexican States
- **Souris River**
North Dakota, U.S. & Manitoba and Saskatchewan, Canada
- **Tatshenshini-Elsek Ecosystem**
Alaska, U.S. & British Columbia, Canada
- **Tijuana River**
California, U.S. & Baja California, Mexico
- **Upper Columbia River Basin**
Idaho, Montana, and Washington, U.S. & British Columbia, Canada

BIG BEND REGION

The transboundary Big Bend region consists of a wide variety of habitats ranging from Chihuahuan desert shrublands and grasslands to mountainous areas consisting of ponderosa pine and Douglas fir¹. Ranging in elevation from 1,800 to 8,418 feet,² this area is bisected by the Rio Grande River, which serves as the boundary between the United States and Mexico.

The focus of transboundary cooperation in this region is between established protected areas on either side of the border. In the U.S., this consists of Big Bend National Park, Big Bend Ranch State Park, and the Black Gap Wildlife Management Area, all in the State of Texas. The protected areas in Mexico include *Maderas del Carmen* in the State of Coahuila, and *Cañon de Santa Elena* in the State of Chihuahua. Together, these protected areas comprise over two million acres of land that supports a diverse array of wildlife species including rare species such as the Mexican black bear, peregrine falcon, Mexican long-nosed bat, and Mexican beaver.³

ECOSYSTEM CHARACTERISTICS

The largest threats to this ecosystem are the diminishing quantity and quality of water in the Rio Grande. Most of the water is taken out of the river before it reaches the Big Bend region, and what does flow carries heavy loads of DDT, DDE, selenium and mercury. These compounds have been found in prey species of peregrine falcons, one of the main species of concern in this region.

Another issue is the deteriorating air quality, due largely to the recent construction of two coal-fired power plants near the area in Mexico. Some models have shown that while these new plants have exasperated the pollution, much of it comes from sources in the U.S. Several federal agencies, including the Environmental Protection Agency and the State Department, are involved in a binational investigation of the sources of air pollution in the Big Bend region⁴.

CASE SUMMARY

The idea of an international park in the Big Bend region predates the 1944 establishment of Big Bend National Park. Over the years, the establishment of a protected area on the south side of the border lost momentum until the early 1990s, when the idea of establishing Mexican protected areas in the region resurfaced. Recognizing the substantial value of the Mexican side of the ecosystem, the *Maderas del Carmen* and *Cañon de Santa Elena* Protected Areas were established by presidential decree in 1994.⁵ It is important to note that these are protected areas, not national parks, and are managed primarily for wildlife, not tourism. As some conservation groups continue to promote the

ideas of an International Park, managers on both side of the border have been working to better coordinate their management of these areas.

While this coordinated management in the Big Bend region occurs on a limited basis, it has been officially recognized as being consistent with the National Park Service's (NPS) management goals for transboundary wildlife resources. Official recognition of the need for coordinated management began in the 1980s, when the Superintendent of Big Bend National Park saw that despite the shared resource connections, there was little effort to understand the cultural, political and economic differences of their neighboring Mexican communities. In order to improve cooperation, the Southwest Regional Director of the NPS signed an Agreement of Goodwill with the Governor of Coahuila, acknowledging the benefits of cooperation.⁶ More formal recognition of cooperation has come in the form of a Memorandum of Understanding between the U.S. Department of Interior and the Mexican Secretariat for Environment, Natural Resources, and Fisheries (SEMARNAT).⁷

According to Big Bend National Park's Public Information Officer, the concepts and ideas from those agreements are working their way into their management plans and management practices, and have given legitimacy to the ad hoc cooperation that occurs between resource managers. This cooperation includes joint wildlife and water quality research and monitoring. Because of their lack of resources, NPA staff often assist their Mexican counterparts in conducting this research by, for example, allowing them to borrow radio-telemetry equipment or by sharing canoe patrols on the Rio Grande. In developing the latest General Management Plan for Big Bend National Park, NPS held public meetings in the neighboring Mexican villages to notify the people of the process, and solicited input and feedback from their counterparts who manage the Mexican protected areas.⁸

ELEMENTS OF TRANSBOUNDARY COLLABORATION

Some of the factors that facilitate this cooperation are the common goals of the management agencies, and the close geographical ties of the people on both sides of the border. As the NPS official put it, "We consider part of our constituency to be those folks who live immediately across the border in Mexico... They're living in the same area, utilizing the same resources. The river is that common thread to all of us." Other facilitating factors include the support and legitimacy that comes down from the upper levels of the Park Service and from state and federal elected officials.⁹

Challenges to transboundary cooperation stem largely from the vastly different management situations on either side of the border, both in terms of resources and strategies. For example, *Maderas del Carmen* is administered by a Director several hundred miles away, with only two or three permanent staff working out of a rented adobe house. An NPS official noted that in terms of management infrastructure, "(the Mexican agencies) deal with things that we don't even consider anymore."¹⁰ There are also the language and cultural differences. The neighboring Mexican villages are

removed from both the U.S. and Mexican political and economic systems, and there is still some awareness and sensitivity over the “long and not necessarily happy history between the U.S. and Mexico.”¹¹ These differences come to bear when looking at the different management models.

While Big Bend National Park is oriented towards both resource protection and public visitation, the latter is a low priority for the Mexican protected areas. These have designated core areas that are surrounded by buffer areas where resource uses and human habitation are permitted. Organizations within the U.S. that are pushing for the international park idea, have not, according to some, been fully respectful of these management, cultural and infrastructure differences, often trying to impose an American idea of a National Park in an area where that model does not fit. “Sometimes [the NGO’s] push a little too hard and get ahead trumpeting things when they aren’t ready to go. That can create some hard feelings” that hinder on-the-ground cooperation between management agencies¹².

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ENDNOTES

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THE GARRISON DIVERSION UNIT PROJECT

ECOLOGICAL CHARACTERISTICS AND CONCERNS

The Garrison Diversion project is planned for North Dakota and would move water from the Missouri River Basin into the Hudson Bay drainage, which is in Manitoba, Canada. The land that the project would serve is primarily privately owned. In ND much of the land is used for farming and could use the water for irrigation while commercial fishing is historically a vital industry in the Hudson Bay basin in Manitoba. As the project has changed over the years, it has become more focused on supplying water to many of the towns in North Dakota rather than for irrigation.¹

The Garrison Diversion as originally envisioned would transfer enormous quantities of water from the Missouri River Watershed to the Hudson Bay drainage. The U.S. did not consider this to be a problem when planning the diversion, but Canadian officials were very concerned with possible biota transfer from one basin to the other. Initially they were concerned about exotic fish entering Lake Winnipeg and harming their commercial fishing industry. Today Canada is concerned with any biota transfer, including microorganisms that might degrade the water quality in the Hudson Bay drainage.²

CASE SUMMARY

Congress first authorized the initial phase of the Garrison Diversion Project in 1965. The original plan for this project was to irrigate a million acres of farmland in North Dakota by taking water from the Garrison Dam and Reservoir, which is in the Missouri River Watershed, and diverting it to the eastern and central parts of the state, some of which are in the Hudson Bay drainage. The initial phase would irrigate 250,000 acres, provide municipal and industrial water, recreation, fish and wildlife development, and flood control for North Dakota. Throughout the 1970s and 1980s there were problems with this project and little was accomplished. Among the many problems was the concern of the Canadian government that there would be biota transfer from the Missouri River Basin into the Hudson River Basin that would harm the commercial fishing industry.

By 1984 there were so many concerns including economic issues, local opposition, Minnesota opposition, and Canadian water quality concerns that the Garrison Unit Commission was formed to reconsider the project. This led to Congress passing the 1986 Garrison Diversion Reformulation Act. This Act completely changed the project, as it authorized irrigation of only 130,000 acres, none of which drained into the Hudson Bay. The Act allowed diversion of water for municipal and industrial water use, including transferring water to cities in the Hudson Bay drainage. It was clear in the Act that this water was to be treated prior to transfer to the Hudson Bay drainage. The act also

GREAT LAKES UNITED

ECOLOGICAL CHARACTERISTICS AND CONCERNS

The Great Lakes watershed includes eight states as well as the province of Ontario. The five lakes, Lakes Michigan, Ontario, Superior, Erie and Huron, make up the largest area of surface freshwater in the world, representing almost twenty percent of the world's freshwater supply and covering an area of 94,000 square miles. More than one-tenth of the U.S. population and one-fourth of the Canadian population live in the Great Lakes drainage basin. The basin is home to a quarter of Canada's agricultural production and almost a tenth of the agricultural production of the U.S. Industry is also a major player in the Great Lakes Basin.¹ Tourism and travel are vital economically for many states within the basin. Both commercial and sports fishing are big business in the Great Lakes. The Lakes are essential to the lives of many Midwesterners, as they provide jobs, power, recreation, etc.²

There are a tremendous number of stresses placed on the Great Lakes ecosystem by humans. Water quality is an important issue in this ecosystem. There are major problems with contaminants such as mercury or other heavy metals in the lakes, habitats of wildlife are being threatened and destroyed, invasive species are choking out native plants and animals, and excessive nutrients such as phosphorous are upsetting the balance in the ecosystem.³ Persistent toxic chemicals threaten both people and wildlife in the basin. There are fish advisory for many species because consumption of these animals could be harmful to the health of humans.⁴

CASE SUMMARY

Great Lakes United (GLU) was founded in 1982 by fifty-five environmental and civic leaders as "an international coalition dedicated to preserving and restoring the Great Lakes-St. Lawrence River ecosystem."⁵ GLU hoped "to establish coordinated environmental leadership in the Great Lakes."⁶ They wanted one unified voice in the region that could push both governments into action. This single, unified voice meant neither government could hide behind the failings of the other but had to face up to citizens' concerns for the ecosystem.⁷ GLU is a citizen's coalition that has been binational since the beginning and now includes over 200 organizations committed to the health of the Great Lakes, including environmentalists and conservationists, hunters and anglers, community groups, U.S. and Canadian citizens, labor unions, as well as First Nations and Native American Tribes. Their primary goal is to protect and conserve the Great Lakes ecosystem.⁸ They do this through policy initiatives, educational programs, citizen action, and grassroots leadership.⁹

GLU has a wide range of activities, but an example of an early project was their successful push to increase awareness of the legal structures in place to facilitate

THE GREAT PLAINS PARTNERSHIP

ECOLOGICAL CHARACTERISTICS AND CONCERNS

The Great Plains Partnership covers an area which includes 13 states (Iowa, Kansas, Missouri, Nebraska, Oklahoma, Texas, New Mexico, Colorado, Wyoming, North Dakota, South Dakota, Montana, and Minnesota), three Canadian provinces (Manitoba, Saskatchewan, and Alberta), and several Mexican border states.¹ This vast grassland region is bounded to the west by the Rocky Mountains and to the east by the Mississippi River Valley. The Great Plain provide habitat for numerous native and migratory bird species, some of which are among the 214 threatened or endangered species listed in the region. It is also home to the Ogallala aquifer, the largest freshwater body in the world.²

The Great Plains ecosystem was once the largest grassland on earth, comprised of native tall and short grass prairies, covering a total of over one million square miles.³ Some of the stresses this ecosystem has endured to date include agriculture, livestock grazing, and tourism/recreation.⁴ Water quality has declined because of pollution from toxins from industrial and agricultural sources and poor land management. Soil productivity has suffered because of erosion, changes in pH from irrigation, and overgrazing. The biodiversity of species, particularly those that are threatened or endangered, has suffered due to the loss of grassland habitat and the spread of epidemic disease among waterfowl. Natural landscapes have been marred by development. Wetlands and stream channels have experiences devastating changes due to large-scale floods and the increase in the damage they inflict due to structural alterations. Water resources have been declining as a result of overuse. The rural character of the region is fading, mainly because of the loss of population due to the declining rural/agrarian economy. Also, the area cannot escape the negative effects of global climate change which have been destructive to plant- and animal-life alike.

CASE SUMMARY

“The Great Plains Partnership (GPP) was a unique, outcome oriented partnership whose purpose was to help local partnerships achieve a healthy land, healthy communities which depended on the land, and healthy ecological communities. The Partnership provided technical assistance and helped in overcoming institutional and regulatory hurdles which local partnerships were unable to resolve on their own.”⁵ The GPP, which was only in existence from 1995 to 1998, grew out of an earlier project entitled the Great Plains Initiative. The GPP was initiated by the former Governor of Kansas and was coordinated by the Western Governors Association. The State of Kansas had spent \$20 million to restore the Cheyenne Bottoms wetland, and the governor was curious to know what other states and countries were doing for the same migratory birds they were aiming to protect in Kansas.⁶

THE INTERNATIONAL PORCUPINE CARIBOU BOARD

ECOSYSTEM CHARACTERISTICS AND CONCERNS

The Porcupine caribou inhabit a range extending from northeastern Alaska across the north Yukon to the MacKenzie Delta in the Northwest Territories. In late winter-early spring, they migrate northward toward the Beaufort Sea coast, and the females give birth to their calves within an area covered by the Arctic National Wildlife Refuge (ANWR).¹ In total, this range covers over 100,000 square miles and includes five national parks and/or preserves: ANWR, the Vuntut National Park, the Ivvavik National Park, the Yukon Charlie Preserve, and the Inuvialuit Special Conservation Area.²

The development of oil in ANWR is a very contentious issue and one that poses a serious threat to the integrity of the Porcupine caribou's habitat. However, the Porcupine herd has proven to be one of the caribou herds that has been able to survive at relatively high and stable levels for a long period of time. In addition, there are so few people living in the area that the demand for harvest in the herd has always been much less than the herd could sustain.³ So, there have not been any ecological crises affecting the perpetuation of the Porcupine caribou as of yet.

All groups of native people in the region engage in sustainable caribou hunting, and this has seemed not to have negative effects on the overall population. In terms of feelings surrounding the compatibility of oil development and the caribou, the north slope Eskimos in Alaska are the only group of Native Americans in favor of it.⁴ Not surprisingly, the International Porcupine Caribou Board (the International Board) does not support oil development, due in part to the fact that the Alaskan Eskimos are a minority on the Board.

CASE SUMMARY

Issues surrounding the transboundary management of the North American Porcupine Caribou herd rose to prominence in the late 1970s. It was at this point that it was realized there were probably large oil reserves in ANWR. In addition, the Yukon First Nations were moving toward settling their long disputed land claims agreement at this time.⁵ A small yet unprecedented decline in several caribou herds in Alaska was also noticed in the 1970s. In order to remedy this situation, authorities wanted to restrict hunting but they needed a mechanism to enforce such action equitably on both sides of the border. On July 7, 1987, the Agreement on the Conservation of the Porcupine Caribou Herd was signed by the U.S. State Department, the Canadian federal government, and the Yukon and Alaskan governments.⁶ The Agreement "promotes international cooperation and

KOOTENAI RIVER WHITE STURGEON

ECOSYSTEM CHARACTERISTICS AND CONCERNS

The Kootenai River originates in the Rocky Mountains near the source of the Columbia River. While the Columbia flows north, the Kootenai River flows south into the Koocanusa Lake reservoir, which spans the Canada-USA border. Koocanusa Lake, created by Libby Dam in Montana, is 166 km long, covers 186 square kilometres.¹ From Koocanusa Lake, the Kootenai joins the Columbia River and eventually drains into the Pacific Ocean. The entire watershed of the Kootenai River covers 49,000 square kilometers (19,000 square miles) in northwestern Montana, northern Idaho, and British Columbia.

The clear, cold water of the Kootenay provides high quality habitat for a number of creatures, including grizzly bear, grey wolf, and bull trout. The central focus of conservation efforts in the region, however, are directed at a genetically distinct population of white sturgeon. The Kootenai River population of white sturgeon was listed as an endangered species under the Endangered Species Act of 1973 on September 6, 1994.²

The Kootenai River ecosystem has been degraded severely over the past 50 years.³ The aquatic ecosystem has changed from being nutrient-rich, to one that is lacking in nutrients. Anthropomorphic changes to the rivercourse, such as separation of the river from its floodplain (channelization and diking), impoundment (construction and operation of Libby dam), and pollution abatement in the watershed, are a few of the possible sources of the degradation.⁴ In addition, other human activities contribute to the deterioration of the Basin's health, including silviculture, mining, and pulp milling.⁵ The interaction of these factors over a period of decades, and their resulting trophic effects, are responsible for the collapse of the Kootenai River ecosystem and the measurable symptoms of declining and endangered fish populations.⁶

In particular, the Kootenai white sturgeon is now suffering from severe recruitment failure. Inadequate numbers of juvenile fish are being generated to replace current populations.⁷ For instance, a recent sampling detected only a few white sturgeon in the one- to five-year-old range despite prohibitions on harvest.⁸

CASE SUMMARY

Following the listing of the sturgeon in 1994, scientists realized the gravity of the problem. A virtual lack of recruitment spanning two decades jeopardized the future of the stock. The Kootenai River White Sturgeon Study and Conservation Aquaculture Project was initiated to preserve the genetic health of the population, begin rebuilding natural age class structure in the population, and prevent extirpation while physical measures were considered and implemented to restore natural spawning conditions.⁹ The

LAGUNA MADRE BINATIONAL INITIATIVE

ECOSYSTEM CHARACTERISTICS AND CONCERNS

The Laguna Madre is a large hypersaline coastal lagoon that stretches along the Gulf of Mexico coast of Texas and Tamaulipas, Mexico joined roughly in the middle by the Rio Grande Delta. The lagoon's average depth is only three feet and it has been nicknamed "marine marsh" for its abundant seagrass beds. These seagrass beds trap and conserve nutrients that are essential to other marine organisms, creating a reservoir of nutrients that otherwise would be flushed out of the system. They are the most distinctive features of the Laguna Madre, acting as extremely productive nurseries for marine life in the bay and Gulf. The binational area is a foraging and nesting ground for the largest concentration of shorebirds, ducks, and geese in any lagoon system in Texas, Mexico, or the Caribbean.¹

The Laguna Madre is also an important resource for the residents of the area, supporting \$225 million in annual revenue from sport-fish and recreation tourism in Texas alone. The entire lagoon generates about 3,600 tons of shrimp each year, and the Texas system provides nearly 50% of the annual state catch. The Laguna ecosystem also houses ocelot, and peregrine and aplomado falcons.²

Bordering this productive ecosystem are human communities struggling for survival. Two of these communities rank as the metropolitan statistical areas with the *lowest* per capita income in the United States.³ Mexican communities in the region struggle to pull in a subsistence fish and shrimp catch from the Laguna and the Gulf, competing with commercial fisherman and recreational anglers.

The primary threat to the area remains development of the waterway. The U.S. developed the lagoon into a navigable waterway for barge traffic, called the Inner-coastal Waterway. A 1998 project proposal would have extended the Inter-coastal Waterway through the Mexican Laguna Madre down the coast to Vera Cruz.⁴ Development of the waterway on the Mexican side of the border would greatly increase the amount of traffic through the marine marshes, disrupting the Laguna's function as wildlife habitat. On the U.S. side, a persistent threat remains disposing of dredge material annually removed from the Inner-coastal Waterway to facilitate navigation.

Additionally, urban development pressures on South Padre Island and along the Texas coast are physically altering the Laguna's land base. The Director of the U.S. effort explained the reason for rapid development: "In a region that's very buried in social need, which [local leaders] *are* trying to figure out how to address, the standard response has been to industrialize the heck out of everything and bring in jobs that way."⁵

THE MILK-ST. MARY'S WATERSHED

ECOLOGICAL CHARACTERISTICS AND CONCERNS

The Milk River begins in Montana, travels 216 miles through Alberta, Canada and then returns to Northern Montana.¹ The land in the Milk River Basin is primarily privately owned and includes a great deal of agricultural land in Montana. While this land is excellent for farming, precipitation is not heavy in the area. Even early settlers in the basin needed to divert water from other sources for irrigation of their crops. The most logical river to divert was the St. Mary's River, which originates in the Rocky Mountains in Glacier National Park and nears the Milk at its headwaters, although the two rivers never actually meet. The St. Mary's enjoys heavy precipitation in the mountains and flows north into Canada into the Saskatchewan River and eventually into Hudson's Bay.² The Canadian portion of the Milk River Basin also falls under private land ownership but is used mainly for ranching, rather than farming. While this does not require as much water as farming, the Canadian portion of the Milk River has been allocated for use among its citizens.

This project is not focused on the health of the ecosystem or environmental concerns in the basin. The Milk River Project deals with the single issue of water quantity, rather than water quality or other environmentally important issues. The main stress of concern in this basin is having too many water needs and not enough water to maintain a stable supply in both nations.³

CASE SUMMARY

The Milk River Project diverts water from the St. Mary's River to the Milk River for irrigation of 121,000 acres of agricultural land in Blaine, Phillips and Valley Counties of Montana. This is an enormous project which includes two storage dams, five diversion dams, a pumping plant, over 400 miles of canals and laterals, and 295 miles of drains to deliver the water. The water is diverted from the St. Mary's River in the United States but must travel through Canada before returning to Montana to be used for irrigation of alfalfa, native hay, oats, wheat and barley. The Bureau of Reclamation is the primary federal agency responsible for the development of this project as well as the storage of water in the region, yet the local irrigation districts have responsibility for distributing the water.⁴

The U.S. first conceived of the Milk River Project in the late 1800s, and it was first authorized in 1903. This authorization was conditional because the U.S. realized it could not act unilaterally on this project. Very early in the development of the Milk River Project, the U.S. realized that the most feasible option was to divert the water into the headwaters of the Milk, where the Milk and St. Mary's ran closest together. This meant the water would travel through Canada before being used, so the U.S. had no choice but

NORTH CASCADES ECOSYSTEM

The North Cascades ecosystem spans the international border between the State of Washington and the Province of British Columbia. The centerpiece of this 15,000 square mile area is Washington's North Cascades National Park.¹ Other significant protected areas in the U.S. include the Pasayten and Mt. Baker Wilderness Areas and Ross Lake National Recreation Area. In British Columbia, protected areas within the ecosystem include Manning Provincial Park, Chiliwack Provincial Park and the Skagit Valley Provincial Recreation Area. The heart of this ecosystem can be defined as the Upper Skagit River watershed, which encompasses many of the above protected areas, as well as Okanagan National Forest Lands in Washington and crown lands in British Columbia.

This collection of protected areas provides important habitat for numerous wildlife species, including the grizzly bear, the lynx and salmon. The economic values that this ecosystem provides include tourism, logging, ranching, and the provision of hydropower.²

ECOSYSTEM CHARACTERISTICS

The main stresses to the North Cascades ecosystem stem from the above economic activities, especially logging and hydropower generation. Since the creation of North Cascades National Park in 1968, there has been recognition of the need to coordinate management along the border, where parts of wilderness areas in the U.S. directly abut B.C. Crown lands slated for clearcut logging. The proposal to raise the Ross Dam on the Skagit River was a major threat to this ecosystem, as it would have inundated important habitat and scenic areas within North Cascades National Park and the Skagit Valley in British Columbia.³

CASE SUMMARY

The Ross Dam controversy galvanized conservationists on both sides of the border, and led to one of the early proposals for the establishment of an international park in the North Cascades. In 1971, the Seattle-based North Cascades Conservation Council voiced its opposition to the High Ross Dam before the International Joint Commission (IJC), arguing instead for the concept of an international park. It was hoped that raising the protected status of B.C.'s Skagit Valley to that of a National Park would add to the rationale against the dam project. During this time, officials in British Columbia considered this option, while also starting the process of setting aside Chilliwack Lake (adjacent to North Cascades National Park) as a Provincial Park. By the late-1970s, however the international park idea "went dormant" (despite its endorsement by the National Park Service), as attention became focused on the High Ross Dam negotiations.⁴

RÍO GRANDE BASIN COALITION

ECOSYSTEM CHARACTERISTICS AND CONCERNS

The Río Grande, or Río Bravo in Mexico, is one of the longest rivercourses in North America. It begins in the San Juan Mountains of southern Colorado and traces a 1,885-mile course before it empties into the Gulf of Mexico through Durango, Chihuahua, Coahuila, Nuevo León, and Tamaulipas in Mexico; Colorado, New Mexico and Texas in the United States; and the Native American Pueblos in northern New Mexico. Along the way the river and its tributaries drain a land area of 185,000 square miles, roughly the size of the Red Sea. This drainage basin encompasses a widely varied group of ecosystem types from arid desert to forest to alpine meadow. Downstream of Colorado, only tributaries from Mexico and the United States ensure permanent streamflow in the lower stem.

The Río Grande/Río Bravo Basin suffers from widespread water and air pollution and a rapidly expanding population. The average population growth rate of the border states on either side was 27 percent in the 1980s and remained high during the 1990s. The population of the eight Texas border counties is currently three million and is expected to double by 2050.¹ Severe economic conditions, particularly in Native American Pueblos and along the border itself, challenge efforts to protect ecosystem function from careless industrial practices.

To further complicate matters, public policy decisions are often made in decision centers distant from the basin, such as Washington, D.C., or Mexico City. They have consistently misunderstood the sensitivity of issues in the basin and fallen short of providing grassroots solutions for local communities.² Widespread resentment of federal or international action has undermined past efforts at the implementation level.

CASE SUMMARY

The Coalition is a binational, consensus-based organization incorporated in both the United States and Mexico. A fifteen member Board oversees the Coalition. Board members reflect geographic and ethnic diversity of the basin, and represent an active effort to include a diverse group of stakeholders. The Board provides vision for the organization and develops policy. Two co-directors run the organization, one from the United States and the other from Mexico. These co-directors work collectively to develop the programs and oversee the day-to-day operation of the organization. The organization also has two assistant directors whose major job is outreach and program development.

THE SOURIS RIVER BASIN

ECOLOGICAL CHARACTERISTICS AND CONCERNS

The Souris River begins in Saskatchewan, flows into North Dakota, and returns to Canada by flowing into Manitoba. The basin covers 24,000 square miles. There is quite a bit of private land in this area, but there are also several major U.S. Fish and Wildlife Refuges on the portion of the Souris River that flows through North Dakota. In Canada power production through coal-fired power plants is important along the Souris, as is farming on the private lands in the basin.

The most salient resource issue in the Souris River Basin is water quantity and maintaining adequate supply for all users year round. There are a wide variety of demands for water in this region, and there is a limited supply. In Canada the water is used primarily for hydropower cooling for coal-fired power plants. There are several large dams in Canada for this purpose, such as Alameda and Rafferty. These dams also serve the function of flood control for Americans in North Dakota. On the Canadian side of the border there is also a need for water for farming. On the southern side of the border, there are many water needs including those for migratory birds that use the wildlife refuges in North Dakota.

CASE SUMMARY

The International Souris River Board is run by the International Joint Commission (IJC) under the authority of the Boundary Waters Treaty of 1909. Recently the IJC reorganized its boards in this area, leading to the new International Souris River Board which deals with all IJC responsibilities in this river basin. The IJC has been involved in this region to varying degrees since 1948. Their main responsibility in this area is water apportionment, making sure the states and provinces receive the amount of water agreed to by both governments. The IJC serves as an advisor to both governments and often acts as an intermediary between the U.S. and Canada. They do not have official decision-making authority on this or any of their boards and can only make recommendations to the two governments.

In addition to the IJC Board, there is the Souris River Bilateral Monitoring Group in this region. This was established in 1989 by the two governments and is run by federal agencies, not by the IJC. This agreement grew out of the construction of the Rafferty and Alameda dams in Saskatchewan. The U.S. committed funds to the building of these dams because they greatly benefit flood control in North Dakota. While government agencies are tasked with implementing this agreement, it does recognize the role of IJC in water apportionment in the basin. The agreement set up a bilateral working group to

TATSHENSHINI-ALSEK WILDERNESS PARK

ECOLOGICAL CHARACTERISTICS AND CONCERNS

The Tatshenshini-Alsek Wilderness Park is a Class A provincial park located in northwest British Columbia, covering an area of one million hectares. It is part of the Haines Triangle, wedged between the Kluane National Park in the Yukon Territory to the north and the Wrangall-St. Elias and Glacier Bay National Parks in the Alaska panhandle to the south and west.¹ This is an extremely rugged area, dominated by the St. Elias Mountains. It is home to the largest non-polar ice cap in the world and also possesses over 350 valley glaciers.²

In addition, the Tatshenshini-Alsek region provides critical habitat for several key threatened and endangered species.³ The region is one of the last strongholds of North America's grizzly. It is also home to the blue or "glacier" bear and one-half of British Columbia's Dall sheep population. Several dwindling species of birds also live in the area, including the king eider, Stellars' eider, the harlequin duck, the trumpeter swam, and the gyre falcon.

The Tatshenshini-Alsek region is known for its incredibly high ecological value, including its many unique wilderness and biodiversity values. It enjoys a rich diversity of vegetation, including many rare plant species. It is also one of the most underdeveloped areas in the Province of British Columbia. Threats to the precious wilderness of the Tatshenshini-Alsek include mining, hunting, outdoor recreational activities (river rafting, hiking, mountaineering, cross-country skiing, fishing, camping).⁴ These threats could indirectly affect the very viability of the economic activities cited as threats themselves.

The Tatshenshini-Alsek river system is home to 95% of the Chinook salmon, 90% of the sockeye salmon, and 75% of the Coho salmon for the commercial fisheries of the Deep Bay and the Gulf of Alaska.⁵ The region's salmon population also provides for native harvests, sport fishing and commercial harvests.⁶ "A park management agreement to protect the native catch levels was negotiated and signed by the government of British Columbia and the Champagne and Aishihik First Nations."⁷ Any damage to natural systems of the Tatshenshini-Alsek will not only affect fisheries but outdoor recreational opportunities and tourism as well.

CASE SUMMARY

The Tatshenshini-Alsek Wilderness Park was officially established on June 22, 1993 by the then-Premier of British Columbia, Mike Harcourt.⁸ Due to its designation as a provincial park, it is wholly owned by the Province of British Columbia and is managed by the British Columbia Ministry of Environment, Lands and Parks (ELP). Those

TIJUANA RIVER WATERSHED PROJECT

ECOLOGICAL CHARACTERISTICS AND CONCERNS

The Tijuana River watershed is a 1,725 square mile drainage basin that straddles the California-Baja California border.¹ Two-thirds of the basin lies within Mexico. The watershed is dominated by salt marsh habitat but also includes dunes, beaches, mudflats, coastal sage, and uplands.² Several of the key animal and plant species that live in the area are becoming increasingly more threatened or endangered. These include the light-footed clapper rail, the California Least tern, the Least Bell's vireo, the salt marsh bird's beak, and cordgrass.³

In essence, the land ownership map of this region looks "like a patchwork quilt."⁴ The Tijuana River winds its way through many private properties, as well as land owned and/or managed by cities, counties, and various state and federal resource agencies, including the U.S. Fish and Wildlife Service and the California Department of Fish and Game. Elevation ranges from more than 6,300 feet to sea level, and the climate is largely semi-arid, with vegetation ranging from pines to desert.⁵ In total, the Tijuana River valley covers 3,000 acres and includes some of the last undeveloped coastal wetlands in San Diego County.

The San Diego-Tijuana metropolitan area comprises the largest urban concentration on the U.S.-Mexico border.⁶ As a result of incessant growth, securing consistently safe drinking water sources has become more difficult. The population of the City of Tijuana has been growing at a rate of 6% a year over the past five years, while San Diego has been increasing at about 2% per year.⁷ This growth impinges on critical wildlife habitat and causes fragmentation and environmental degradation. Other concerns include agricultural pollution, erosion/ sedimentation, and flood control.⁸

As the population of Tijuana, in particular, has increased, the city has improved its water delivery service, but its sewage treatment system cannot handle increased demands. The result is that more and more of the wastewater has leaked into the Tijuana River, "polluting the waters, diluting the saltwater, and disturbing the balance of the salt marsh."⁹ To put it mildly, flooding and contamination have severely "weakened" the region's wetlands.

CASE SUMMARY

The Tijuana River Watershed Project (TRWP) was initiated by researchers in the Geography Department at San Diego State University.¹⁰ Other project partners include *el Colegio de la Frontera Norte* in Mexico, the National Oceanographic and Atmospheric Administration (NOAA), *L'Institut Francais de Recherche Scientifique pour le Developpement en Cooperation*, and the U.S. Geologic Survey (USGS). In addition,

UPPER COLUMBIA RIVER BASIN

ECOSYSTEM CHARACTERISTICS AND CONCERNS

The Columbia River is the dominant river system in the Pacific Northwest United States and southeastern British Columbia. The River and its tributaries drain almost 700,000 km². The River's headwaters originate at Columbia Lake on the west slope of the Canadian Rockies and flow north through the Rocky Mountain Trench, then south through the Selkirk Trench where they converge with the Kootenay and Pend d'Oreille Rivers before crossing into the United States. The river's size, transboundary nature, and consequent economic and ecological significance distinguish it as a unique system in North America.

The Upper Columbia River Basin represents the transboundary portion of the River basin. The area encompasses all of the watercourses located upstream of the Wells Dam, including six large tributary river systems.¹ These transboundary systems provide a wide variety of benefits to Pacific Northwest residents, including irrigation water, fish habitat, flatwater and rivercourse recreation opportunities, and power generation.

Human development pressures primarily threaten the Upper Columbia Basin. The region's rapidly expanding population increases demand for electricity and road infrastructure. Water diversion for agricultural use and impoundment for hydropower generation persist as significant threats to the Basin. Although it has decreased in recent years, resource extraction, such as silviculture and mining, also stresses riparian habitat necessary for fish spawning and sediment control.

CASE SUMMARY

The watercourses of the Upper Columbia River Basin are formally linked through the Columbia River Treaty of 1961. The Treaty was meant to provide flood control for municipalities and agricultural lands in the U.S. by impounding the river system at four points in Canada and at one point in the U.S. The treaty's terms require the U.S. to pay Canada annually for the flood control provided by impoundments in Canadian territory. The Northwest Power Planning Council (U.S.) was created through the Treaty to monitor and regulate the entire Columbia River's flow to stabilize hydropower production and mitigate the impact of the dams along the whole of the River's course.

Despite this narrow purview, language in the Treaty called for resource managers to treat the river as a holistic system, not simply as a watercourse that begins and ends at an international border. The treaty's charge, although largely ignored until the early 1990s, motivated a small group of resource officials to convene an international technical workshop in 1994. Four years later, another workshop was convened to discuss the future of ecosystem management in the Basin. Their purpose was to provide participants

with an opportunity to develop a common vision for the future, to identify the factors that are constraining our ability to achieve that vision, and to formulate general strategies and specific actions that could be used to support sustainable fisheries management.

The effort is beginning work on a system-wide assessment of ecosystem health, including benchmarking the river's health for future restoration efforts.

ELEMENTS OF TRANSBOUNDARY COLLABORATION

This landscape-scale effort is moving forward following ecosystem management principles. The Northwest Power Planning Council and the Columbia Basin Trust, the Canadian agency responsible for turning payments from the U.S. into mitigation and restoration work, share a formal international legal bond through the Treaty.² These agencies facilitated the collaboration of provincial and state agencies, as well as non-profit groups, at their conferences by working within existing laws. Following the conferences, a listerv was created for participants to further dialogue opened at the conference.

Incorporation of native peoples is especially important in fostering lasting collaboration. The cultural ties to the River Basin coupled with unresolved treaty negotiations in British Columbia make both of the aspects powerful components in the process. As a First Nations elder observed when opening the 1998 conference, "We're all from different places and different races, but for the next few days we're all of one heart—to preserve and protect our natural resource."³

In addition to convening large technical conferences, the two agencies plan to expand their efforts to do more than just funneling project dollars and sharing information. Political support appears widespread and funding has not yet been a limitation.

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¹ The Okanagan, Kootenay, Upper Columbia, Clark Fork, Pend d'Oreille, and Flathead River systems.

² John Harrison, Public Information Officer, Northwest Power Planning Council, personal communication, 21 November 2000.

³ Sustainable Fisheries Foundation, *Towards Ecosystem Management in the Upper Columbia River Basin: Workshop Proceedings*, preliminary draft, October 1998, <http://www.nwppc.org/canada.htm> (12 March 2001).

state and local government partners in Mexico and the U.S. are involved, as well as the Mexican national government.

The parties actually engaged in the project at any given time vary as the focus of activities change.¹¹ The focus of all activities under the project umbrella is the creation of a comprehensive set of cross-border geographic information systems (GIS), covering a range of issues – from water quality to flood control to spatial patterns of vehicular use.¹² The appropriate experts and officials are consulted for the development of each component of the larger system. It is hoped that this GIS database will facilitate U.S.-Mexico cooperation in addressing important resource use and environmental quality issues.

While the project does not operate under any legal mandates per se and does not maintain legally-binding decision-making authority, there is a Memorandum of Understanding in place between San Diego State University and *el Colegio de la Frontera Norte*.¹³ Even though it is not a “formal” organization in the sense that it does not hold regular meetings or maintain a designated staff, the Tijuana River Watershed Project is a well-established and respected program. In addition, the project enjoys widespread support and little opposition. What opposition exists is simply in the form of differing opinions among project members.¹⁴

ELEMENTS OF TRANSBOUNDARY COLLABORATION

The fact that the Tijuana River comprises a transboundary watershed and that there are academics on both sides of the border with similar interests helped coalesce the partners of the Tijuana River Watershed Project. There was common recognition that the region experienced and would continue to experience many problems which transcended the international border – what happened on one side of the border clearly has an impact on the other side, and it was felt that a common GIS-type database could help encourage a bi-national approach to problem-solving.¹⁵

The initial impetus to engage in transboundary work goes back to 1994, when researchers at San Diego State University and *el Colegio de la Frontera Norte* conducted some workshops, through the Southwest Center for Environmental Research and Policy, on transboundary geographic information systems (GIS).¹⁶ Through that effort, a lot of cross-border contacts were made and the Tijuana River Watershed Project was born.

While the Project Team includes both Mexicans and Americans, clear differences in priorities surface between the two countries, which can be linked, in part, to the nations’ differing levels of economic development and different cultures.¹⁷ For example, the Mexicans seem to want the database to focus on socioeconomic variables while the Americans consider transboundary environmental factors to be more significant. However, there are a number of grassroots environmental organizations in operation along the U.S.-Mexico border, and they are becoming more and more active in Tijuana.¹⁸

So, there is some effort being made to raise the visibility of environmental concerns among average Mexican citizens living in the border region.

While the Tijuana River Watershed Project is an example of a good working transboundary relationship, it is mainly a partnering of academics sharing information rather than a true effort to improve the coordination of shared resource management across international borders. The Transborder Watershed Research Program (TWRP), an off-shoot effort derived from the Tijuana River Watershed Project, is a more comprehensive joint program between San Diego State University, Arizona State University and the University of Utah.¹⁹ The goal of this program is to not only look at the Tijuana watershed but also to compare it to other watersheds along the border as a way of beginning a much larger watershed research program in the border region. The Tijuana River Watershed Project was initiated with funding by NOAA in 1994, and from that evolved a number of projects such as the TWRP.

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² National Oceanographic and Atmospheric Administration, "National Estuarine Research Reserves: Tijuana River," www.ocrm.nos.noaa.gov/nerr/reserves/nerrtijuana.html (October 26, 2000).

³ *Ibid.*

⁴ Lori Saldana, "Tijuana River: a controversy runs through it," <http://home.san.rr.com/saldana/et0694s1.html> (October 8, 2000).

⁵ www2.planeta.com/madder/ecotravel/border/0695gis.html

⁶ "An Integrated Cross-Border GIS for the San Diego-Tijuana Interface," Principal Investigators: Drs. Richard Wright and Ernst C. Griffin, San Diego State University, www.scerp.org/scerp/projects/IS95_7.html (October 8, 2000).

⁷ Richard Wright, Coordinator, Tijuana River Watershed Project, Professor, Department of Geography, San Diego State University, San Diego, CA, personal communication (November 17, 2000).

⁸ University of California – Davis. UC Davis Information Center for the Environment, Davis, CA, 1997.

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¹⁰ Tijuana River Watershed Project. "Tijuana River Watershed Project: Proyecto de la Cuenca del Rio Tijuana" <http://typhoon.sdsu.edu/TJWATER/index.html> (October 26, 2000).

¹¹ Wright (November 17, 2000).

¹² "An Integrated Cross-Border GIS..." (October 8, 2000).

¹³ Wright (November 17, 2000).

¹⁴ *Ibid.*

- ¹⁵ *Ibid.*
- ¹⁶ *Ibid.*
- ¹⁷ *Ibid.*
- ¹⁸ *Ibid.*
- ¹⁹ *Ibid.*

corporations that held mineral claims within what are now the park boundaries were financially compensated for having their claims revoked by the provincial government.⁹

The overall goals behind creating the provincial park were to provide permanent protection for region's natural resources and to encourage UNESCO-designation of the largest protected area in the world. The strategies for achieving these goals included: enshrining park boundaries in law; having the park designated a World Heritage Site; creating a special park advisory body; and identifying projects which could enhance the intent of international wilderness protection.¹⁰

ELEMENTS OF TRANSBOUNDARY COLLABORATION

The government of British Columbia wanted to invite Canadian, U.S., and First Nations government to develop an international accord in relation to management of the Tatshenshini-Alsek region. To date, an official international governing body has not been established.¹¹ However, UNESCO did bless the Wilderness Park with the recognition it was looking for: the Tatshenshini-Alsek Park, the Kluane National Park Reserve, and the Wrangall-St. Elias and Glacier Bay National Parks comprise the largest World Heritage Site to date.¹² "One definite objective that should be pursued is the development of a common interpretive program and granting this World Heritage Site a single name which reflects the region's shared natural and/or cultural heritage."¹³

As Premier of British Columbia, Mike Harcourt served as a true champion for the cause of wilderness protection, and his support of park designation for the Tatshenshini-Alsek region was critical to its getting passed. He was very much in favor of transboundary collaboration over management of these adjacent protected area and even called upon the Canadian, U.S., Yukon and First Nations governments to join B.C. in pursuing a new St. Elias-Tatshenshini World Wilderness Reserve designation, "with the highest management standards in the world."¹⁴ It was his hope that a special international advisory body would be established to work on the formal designation, boundaries and management objectives for the larger wilderness region.¹⁵

The Tatshenshini-Alsek Wilderness Park exemplifies how government can promote ecosystem management through action. This case provides a different perspective than the other transboundary efforts being examined in this document, namely in that it focuses on an area now comprised solely of public lands. It also is an example of how a continuum of core, protected areas can be successfully achieved. In addition, the economic and ecological concerns relevant to this region are intimately intertwined, and all federal levels of government, including tribal interests, have been engaged. And lastly, the Tatshenshini-Alsek complex bears notable resemblance to the North Fork/Flathead situation and promises to share some truly insightful lessons. Both regions are concerned with transboundary species and have had to fight off the advances of mining and other destructive industrial activities.

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² *Ibid.*

³ *Ibid.*

⁴ *Ibid.*

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⁶ T.L. McDaniels, "An analysis of the Tatshenshini-Atsek wilderness preservation decision," *Journal of Environmental Management*, Institute for Resources and Environment, University of British Columbia, Vancouver, B.C. (1999) 57, 123-141.

⁷ www.env.gov.bc.ca/main/annrep/ar97/parks.htm

⁸ British Columbia Land Use Coordination Office, News Release/*Communiqué*, "Tatshenshini Designated World Heritage Site by UNESCO: World's Largest International World Heritage Site Created," www.luco.gov.bc.ca/pas/specproj/tatshen/121594-1.htm (October 26, 2000).

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¹⁵ *Ibid.*

monitor water quality and the effects on the basin of these major dams. This structure facilitates cooperation on water quality issues.

ELEMENTS OF TRANSBOUNDARY COLLABORATION

The IJC has had some success in managing the Souris River Basin. The IJC Board allows ongoing communication between the countries as well as a sharing of information across the border. It helps that the IJC is an objective and somewhat neutral third party and can mediate at times between the two sides. The IJC is also able to assist the countries with information gathering through joint fact finding. This prevents the nations, states, and provinces from locking into the positions of their particular jurisdictions. The largest weakness of the IJC board is that it has no true decision-making authority and can only make recommendations to the governments. If one or both of the governments decide not to take the advice of the IJC, they can end up locked back into the difficult situation that made them come to the Board in the first place. Historically, the governments have taken the advice of IJC and this has not been a major problem. The Souris Board has not had to deal with very complex ecosystem level issues, and it is likely that the entire process could break down if faced with something beyond water apportionment.¹

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¹ Ted Bailey, Engineering Advisor International Joint Commission, Canadian Section, personal communication, 8 November 2000.

The Coalition's mission is to facilitate local communities in restoring and sustaining the environment, economies, and the social well being of the Basin. The Coalition has a number of programs, most concentrating around watershed issues: sustainable water use, local monitoring of water quality, etc. The Coalition serves primarily as a network, an information clearinghouse, and a support organization for members through various programs. A major accomplishment was the 1998 Uniting the Basin Congress, a follow-up to the 1994 Uniting the Basin Conference. The Congress produced a webpage and an email listserv that keeps members in constant contact with each other and facilitates day-to-day cross-boundary cooperation. In fact, given the size of the Basin, electronic means of communication are a vital link.

The Coalition also provides a holistic vision for meeting the region's challenges through region-wide, civic-based consensus and participation to support the implementation of public policies. This vision is supported by a consensus-driven programmatic strategy with action steps for member organizations.

ELEMENTS OF TRANSBOUNDARY COLLABORATION

The Coalition was formed in 1994 when several existing working groups and founding organizations hosted the Uniting the Basin Conference. This conference provided a forum for citizens, organizations, and corporations from throughout the basin to talk about issues and meet face-to-face in a non-adversarial setting. In 1995, the basin-wide Steering Committee met in Monterrey, Nuevo León, and Taos, New Mexico. The Committee decided that the Initiative would best be organized as a legal, non-profit organization. The Coalition is incorporated on both sides of the border and has offices throughout the basin.

The Coalition has a diverse membership of over 50 partner organizations from around the Basin. There is no direct opposition to the existence of the Coalition, although specific policies and programs are often called into question.

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The High Ross Dam proposal was based on a 1967 agreement between the City of Seattle and the Province of British Columbia. Increased awareness of the value of B.C.'s Skagit valley for recreation and conservation led the Province to formally oppose the project in 1972 and pass resolutions opposing it in 1973. The following decade of arguments appeals to the IJC and negotiations resulted in an innovative and unprecedented treaty. The Ross Dam Accord, negotiated between the City of Seattle and the Province of British Columbia, called for the project to be suspended, provided that the province compensate the city by providing power comparable to what would have been generated by the dam. An offshoot of this agreement was the creation of the Skagit Environmental Endowment Commission (SEEC)⁵.

The SEEC administers an endowment fund of \$5 million (plus annual payments by B.C. and Seattle) to enhance recreational opportunities and environmental protection of the Upper Skagit watershed. The Commission is made up of eight members, four appointed from each country, who administer grants to land management agencies, organizations and individuals on both sides of the border⁶. While the SEEC has been very successful at enhancing bi-national cooperation for individual projects, the efforts to coordinate ecosystem-wide management have not fared as well.

In the late 1980s, the National Park Service was still supportive of the international park idea to the extent that it promoted their larger goal of protecting the North Cascades ecosystem. In 1992, a coalition of conservation organizations formed the Cascades International Alliance to push the international park concept. This movement was bolstered by a conference at the University of Washington in 1994, but by this time the Park Service distanced itself from the effort, which was becoming increasingly controversial.⁷ Property rights and "wise-use" groups immediately opposed the proposal, some on the grounds that it was a "giant land grab" while others insisted that it was part of a United Nations plot to "dismember the U.S. and impose a one-world government."⁸

The following year, the Cascades International Alliance unveiled its plan for the North Cascades. It called for an international park consisting of existing protected areas and managed cooperatively by U.S. and Canadian officials, surrounded by a "stewardship area" on other federally owned lands. While members of the Alliance worked to sell this concept throughout the region, the entrenched resistance of local residents and the Canadian timber industry wore the effort down to a halt.⁹ Now, there is little mention of the effort by the organizations that had previously championed the effort.[†]

ELEMENTS OF TRANSBOUNDARY COLLABORATION

One of the greatest facilitating factors for the existing transboundary collaboration in the North Cascades, the SEEC, comes from its creation as an autonomous organization that is

[†] The North Cascades Conservation Alliance website mentions the International Park as one of its long-term goals, but it is not one of their current initiatives. In addition, online information from several conservation organizations that were cited by Charles Chester in his work on the topic are no longer online. These organizations include the National Parks and Conservation Association, www.npca.org, and the Northwest Ecosystem Alliance www.pacificrim.net/~nwea.

mandated to support projects on both sides of the border. The SEEC has funded numerous projects in the region, mostly recreational and interpretive facilities. It has been argued that the success of this organization, which stems from its origins in the High Ross Dam controversy, was revolutionary in that it went against the convention of international agreements by dealing with a transboundary dispute at the local level.¹⁰

The international park movement was hampered by the lack of a broad base of support, and its struggles in defining what constituted the ecosystem, how it should be managed, and how an international agreement should be structured.¹¹ Over time, its main proponents have lost the energy to pursue the idea and have moved on to other conservation efforts.

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¹¹ Marc Bardsley, President, North Cascades Conservation Council, personal communication on November 15, 2000.; National Park Service - North Cascades National Park, "Contested Terrain: An Administrative History (Chapter 15)," www.nps.gov/noca/adhi-15.htm, accessed September 24, 2000.

to work with their northern neighbor on this effort.⁵ Construction started in 1906, but the entire system was not complete until 1946. This project would never have been successful without the signing of the Boundary Waters Treaty in 1909, and even with this accomplishment it took 40 years to build. There were a number of problems along the way. One major reason for this extended timeline was the objections of the Canadians and the need for the two nations to work together.⁶

ELEMENTS OF TRANSBOUNDARY COLLABORATION

Prior to the signing of the Boundary Waters Treaty of 1909, little was accomplished on the Milk River Project because the barriers for the two nations to work together were just too great. There was no forum to exchange information and negotiate on the project. As soon as Congress authorized the project in the early 1900s, the Canadian government objected. At this point the U.S. ignored its neighbor, but eventually the U.S. realized that the Milk River Project would only be successful if the water was ensured safe travel through Canada.

The collaboration between the two nations has been very formal throughout the life of the project. Interaction for this basin is mainly between the federal agencies on each side of the border that are responsible for implementing the Boundary Waters Treaty. The main goal of this effort has been to maintain a stable water supply on both sides of the border and to keep each other informed of changes in water use. Agency officials do meet regularly and form agreements, but these are often referred to the IJC for final approval and acceptance.⁷

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CASE SUMMARY

Created in response to the proposed extension of the waterway, the Laguna Madre Binational Initiative seeks to define the economic and ecological value of the natural resources associated with the Laguna Madre region and motivate support for conservation of those resources. For the purposes of the project, the Laguna Madre is defined by the Lower Laguna Madre of Texas, which includes Cameron and Willacy County communities, and the northern Laguna Madre of Tamaulipas, including the counties of Matamoros, Valle Hermoso, and associated coastal villages.

The Initiative prides itself on its grassroots approach to problem solving.⁶ It is a joint venture between two long-time players in U.S.-Mexico border resource issues: Texas Center for Policy Studies and the Mexican Conservation Organization Pronatura Noreste. These two groups joined forces at the behest of the director of TCPS in late 1997 to focus an ongoing cross-border dialogue regarding resource issues that predated the Initiative.

The Initiative uses the most notable feature of the Laguna region, the wetland itself – its wading shorebirds make for excellent photographs – to raise the profile of sustainable development. From that position, the Initiative works to build sustainable development ideals into local decision processes with an ultimate goal of conservation of the region's unique resources.

The initiative accomplishes this by running two parallel processes: one targeting economic concerns and another environmental concerns. The current agenda has economic concerns at the forefront of efforts, with more conservation-oriented activities on the U.S. side of the border.

Espousing values like inclusiveness and cooperation, the Initiative has not encountered any direct opposition to its activities. That has not guaranteed success, however, since opposition to specific proposals exists. Chapman puts it this way: "It's more of a consensus-based process so we haven't come across any real *opposition*. The type of ideals we're trying to promote are not falling on deaf ears—they're just falling ... the project hasn't reached the entire community yet" so that's where resistance comes from.⁷

ELEMENTS OF TRANSBOUNDARY COLLABORATION

The degree of collaboration is inherently limited by the two partners' differing strategies, however. Pursuing both economic, social, and ecologic goals under one umbrella organization with only two lead staff members required differing strategies. From the project's outset, the international border split the specific programmatic strategies—but the Initiative retains a common overarching goal. Chapman notes, "It's not that we're on different tracks, we're basically in the same place but doing it in different ways."⁸

Information flows freely between the two groups. They talk weekly, usually via email. Information is then disseminated to relevant domestic groups working on the problem in

question. The Initiative has held a series of workshops and conferences. Most recently, the “Future of the Binational Laguna Madre Region: Economic and Natural Resource Symposium” was held, drawing 135 organization representatives and citizens.

These groups are engaged as the Initiative sees fit—conservation groups are involved when conservation initiatives are the focus; local universities are involved when the Initiative is working on community development. Thus, there are discrete micro-collaborative efforts for each project the Initiative begins, substituting for the committee function of a larger, more formal organization.

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⁴ Karen Chapman, Co-Director, Laguna Madres Binational Initiative, personal communication, 30 October 2000.

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objectives of the conservation aquaculture program are to produce a number of adult sturgeons per year that survive to breeding age.¹⁰ The project is spearheaded by the Kootenai Tribe of Idaho and funded with mitigation monies from the Bonneville Power Administration.

ELEMENTS OF TRANSBOUNDARY COLLABORATION

A unique element of the project, however, is the creation of an international recovery team for the species. Since the species depends on deep lentic (lake) habitat in Canada and clean, fast-moving spawning habitat in the U.S., international consideration of the habitat conditions and harmonization of mitigation and restoration efforts is the species only chance of survival. The Kootenai tribal council chair noted, “Sturgeon have been around a lot longer than international boundaries. They live in waters in Montana, Idaho, and British Columbia. What they need now is a cross-border solution to prevent their extinction.”¹¹

A ten-year, multi-agency white sturgeon recovery program, funded by the Bonneville Power Administration, brings together the resource agencies responsible for sturgeon recovery.¹² The British Columbia Ministry of Environment, Lands, and Parks and B.C. Fisheries partnered with the Kootenai Tribe of Idaho in November 1997 to bring a "fail-safe" Kootenai sturgeon recovery hatchery into operation at the ministry's Kootenai Trout Hatchery near Cranbrook.¹³ Construction of the sturgeon facility was completed in August 1998.

The first sturgeon eggs arrived from Idaho in June 1999. The young sturgeon were raised until they 15 months of age and were released into the Kootenai River near Bonners' Ferry, Idaho, in September 2000. This stocking program will be repeated each year and is carefully planned under the guidance of geneticists to ensure a high degree to genetic variability. Each young fish will carry an internal tag that will allow scientists to track survival, growth and migration patterns of each year class.¹⁴

In addition to the supplemental stocking program, the international recovery team has also experimented with modifying operations at Libby Dam to produce higher river flows during the critical spring spawning period.¹⁵ Sampling indicates that, although natural spawning rates are not increasing as a result of dam operation modifications, tagged hatchery sturgeon have excellent post-stocking survival rates.¹⁶

The transboundary collaborative project includes representation from state, federal, provincial and academic agencies, as well as First Nations and Native American tribes in the U.S.¹⁷

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¹⁷ “Kootenai River White Sturgeon Conservation Hatchery.”

coordination to conserve the Herd and its habitat so that the risk of irreversible damage or long-term adverse effects as a result of use of caribou or their habitat is minimized".⁷

There are two main agencies involved with the direct management of the Porcupine herd: the Yukon Department of Natural Resources and the Alaska Department of Fish and Game. However, the U.S. Fish and Wildlife Service is also involved due to its responsibility for habitat management in ANWR. In addition, the Canadian Wildlife Service and the government of the Northwest Territories also have vested interest in sound management of the Porcupine caribou.⁸

Under the Conservation Agreement an International Porcupine Caribou Board was formed. Canada and the U.S. each have four members on Board, representing the federal and state/territorial governments as well as the user communities. A bi-national Technical Committee of biologists and agency personnel advises the International Board. In terms of actual regulatory authority, the International Board only has the power to make recommendations to the relevant governmental bodies; commitments under the Agreement must be implemented by the appropriate government units under each country's jurisdiction.⁹ However, what tends to happen is that suggestions for changes in regulation come from the Board and they are just "rubberstamped" by the regulatory authorities on both the Canadian and U.S. sides.¹⁰ So, in effect, the Board's decisions are rather significant.

The treaty itself does not play a crucial role in the day-to-day management of the herd or the activities of the International Board. Despite this disconnect, the International Board is still considered an "official" organization, and it holds meetings on a regular basis.¹¹

Three main groups of native peoples have been involved in shaping the management regime for the Porcupine caribou. They are: Alaskan Eskimos, the Nuviant Eskimos from the north slope of the Brooks range, and the Athabaskan native people from Alaska on the south side of the range.¹² There is also a fourth group tangentially involved, the Inuvialuit. They are Eskimo people from the MacKenzie Delta region.

Overall, politicians have seemed supportive of the International Board's actions. Sound management of wildlife is practically a "motherhood" issue in this region.¹³ For this reason, nobody is going to criticize the Board unless something catastrophic happens and it does not react appropriately. However, there has been virtually no criticism to date.

ELEMENTS OF TRANSBOUNDARY COLLABORATION

Although there are only four signatories to the Conservation Agreement, within the porcupine caribou range, there are 12 areas with different management regimes: two federal governments (U.S. and Canada), three state or territorial government, eight native land claim agreements, five national parks and/or preserves, two native special management areas, and two specific ordinances.¹⁴ Considering the limited implementation of the treaty itself, in retrospect, it seems that perhaps the involvement of

both the U.S. and Canadian federal governments may really have been unnecessary.¹⁵ Having the federal governments involved complicated things and raised issues beyond a level that was really productive.

The 40-mile herd is another group of caribou that migrate across the U.S.-Canada border, and they are being managed under a very different structure than the Porcupine caribou.¹⁶ Their management does not involve anyone at the federal level; it's simply an agreement between the State of Alaska, the government of the Yukon, and the native people on both sides of the border, and everybody seems to be pleased with how it is working out. However, the fact that there is an official treaty in place regarding Porcupine caribou management certainly got people talking to each other and elevated the importance of the Porcupine herd both within Alaska and Canada, and even internationally.

Transboundary cooperation on the management of the Porcupine caribou has been helped by the fact that many of the regional entities making wildlife regulations today are very reluctant to act unilaterally where even 10 or 20 years ago it was very common for statutes to pass without bi-national consultation.¹⁷ There are rules about having public hearings and public input on such an issue, and today it would be almost unheard of for the Alaska Board of Game to make a regulation regarding the Porcupine caribou herd without consulting the International Board first.¹⁸

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¹⁶ *Ibid.*

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¹⁸ *Ibid.*

Federal, state, and local government agencies, as well as tribes, non-governmental organizations, and landowners were all critical GPP stakeholders. The GPP faced a particular challenge in that most of the land in the region is in private ownership and to be successful, strong grassroots involvement would be needed.⁷ The GPP was governed by a Council made up of executives, elected officials, citizens (including agencies, organizations, and communities).⁸ The Council provided leadership to the project, developing an overarching mission and approving project workplans. The GPP also had a work group comprised of senior agency managers and representatives of relevant organizations. The work group was essentially a network that aimed to identify and recruit partners, as well as remove barriers to sustainability and carry out assigned activities. The Western Governors Association played the overall coordinating role for the GPP.

The goals of the GPP centered on “catalyzing and empowering the people of the Great Plains to define and create their own generationally sustainable future.”⁹ The strategies for achieving these goals included: bringing together individuals and groups; removing institutional barriers to cooperation; developing the necessary science and data; enhancing local, regional, and world-wide learning; and encouraging on-the-ground projects conducted by local partners. The GPP existed within a supportive environment of other similar projects including The Nature Conservancy-U.S. Environmental Protection Agency Great Plains Program and the Great Plains International Data Network which was initiated by the Province of Manitoba.¹⁰

ELEMENTS OF TRANSBOUNDARY COLLABORATION

The fact that the GPP was a project of the Western Governors Association meant it enjoyed rather high-level state support, at least within the U.S. Community support was also widespread throughout the entire region. In addition, the North American Migratory Bird Treaty lent credence to the attempt to make this initiative tri-national (Canada, U.S., and Mexico). However, the expansive landscape covered under the scope of the project required a level of funding that proved difficult to sustain. As a result, the GPP disbanded and a smaller project called the High Plains Initiative now focuses on similar issues in the northern U.S. portion of the Great Plains landscape. In addition, the fact that the majority of land in the north-south swath of the Great Plains is privately owned made the coordination of stewardship activities particularly difficult. Despite these shortcomings, the Great Plains Partnership was an ambitious endeavor, aiming to address environmental protection proactively rather than reactively.

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transboundary cooperation in the Great Lakes. For instance, GLU successfully raised awareness in the 1980s of the Great Lakes Water Quality Agreement as well as the Boundary Waters Treaty of 1909. They forced each government as well as the IJC to listen to citizen concerns. They encouraged citizens to become more involved in the activities of the Commission, such as attending their biennial meetings to voice concerns about management.¹⁰

ELEMENTS OF TRANSBOUNDARY COLLABORATION

The case of the Great Lakes is the most successful case of transboundary cooperation and management along the U.S./Canadian border.¹¹ There is a rich history of working together that includes strong long-term commitments from both nations. Not only is there a commitment, but there is also an extensive legal framework and strong institutional structure to aid the countries in their joint management of the resource. Great Lakes United is an important player in this history of transboundary management. It is committed to being an international organization that strikes a balance between the U.S., Canada, the First Nations and the Native American tribes. In order to ensure this balance, the Board of Directors of the organization always includes eleven Canadian citizens, eleven U.S. citizens as well as one representative from the First Nations and one from the Tribes.¹² GLU is comprised of individuals and organizations committed to the Great Lakes basin. They understand that the only way to protect this invaluable resource is by involving all stakeholders and working in a transboundary fashion.¹³

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⁸ Kiy, Richard and John Wirth, ed., *Environmental Management on North America's Borders*, Texas A&M University Press, College Station, 1998, p. 20.

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¹³ “A Celebration of Great Lakes United 1982-1992,” 1992.

included more environmental mitigation measures for the projects, as much of the local and state opposition has been due to environmental concerns.³

To this point very little has been accomplished in the Garrison Diversion Project. The project no longer contains any irrigation although the U.S. does still plan to transfer water for drinking from one basin to the other, and Canada continues to object, feeling that there should be no degradation of the Hudson Bay drainage. It is not likely that anything will happen in the near future, as the two sides have not come close to settling these issues. Canada is sticking with its technical argument, and the U.S. is frustrated with all of the changes it has already made on the project. In 1999 Congressmen from North Dakota pushed to pass yet another piece of legislation to finally complete the project. They were unsuccessful but plan to continue this cause in the next session of Congress. Canada fiercely objected to this legislation, believing it did not follow the 1986 commitments.⁴

ELEMENTS OF TRANSBOUNDARY COLLABORATION

Throughout this project there have been problems with the two nations working together. Shortly after the authorization of the initial project in 1965, Canada began to voice its concerns about the biota transfer issues into the Hudson Bay watershed. There was not a good forum at this time for information sharing and exchange, and there was a lot of miscommunication early on between nations. The U.S. did not play its hand well in the beginning. They had no solid response to the Canadian concerns of biota transfer and told them not to worry and that they would take care of the issue but with nothing to back up this claim. This led to mistrust between the nations, and this is still evident today in this project. Canada has raised the stakes throughout the years, moving the issue of biota transfer from fish to fish eggs to bacteria and even viruses. The U.S. has completely changed the project, and it no longer includes any irrigation, yet the Canadians will not back down on the issue of biota transfer. The nations did form a consultative group in the 1970s to consider the issue of biota transfer, but this joint fact finding venture did not clear up the issues for either side. They continue to study the issues even as the project changes, but there is no clear resolution in sight. At this point the United States is trying to decide whether or not they should proceed on the project without the support of the Canadians. This could push the debate into court, but the nations have such a poor working relationship on this issue that it would not change the situation that much.⁵

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³ “Garrison Diversion Public Information – History,” Garrison Diversion Conservancy District, www.garrisondiv.org.

⁴ “Garrison Diversion: The Dakota Water Resources Act,” June 23, 2000.

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APPENDIX B

INTERVIEW QUESTIONS

CASE STUDY INTERVIEW QUESTIONS

INTRODUCTION

Script: “I am a graduate student at the University of Michigan, working on a Master’s thesis project about resource management across international borders. My project teammates and I are looking at a range of case studies involving the U.S. and its neighbors. We are interested in learning about what has facilitated successful transboundary efforts and how the presence of an international border has influenced efforts of varying success. More specifically, I would like to ask you some questions about the initiation, goals, and activities of the project with which you are involved [substitute with name of project if known]. Do you have time to talk now?”

NOTE: Weave in your knowledge of the particular case/project – tell the interviewee what you know and what you want to know.

(If YES) May I tape our conversation so that I can be sure to get your facts straight?

(If NO) When would be a more convenient time for this conversation?

.....

COLLABORATIVE PROCESS

Why did the parties initially come together?

- Was there a crisis or significant event?
- Did you come together due to a government mandate or under an existing treaty or legal authority?
- Did you come together due to economic concerns?
- Did you include your US or Canadian counterparts in the initial meetings?
- Did you come together with a common understanding of the problem and the transboundary nature of this problem?

Why are the parties still working together?

- Is there a long-term commitment from all parties?
- Have the parties changed over time?
- Is the other country currently involved in the effort?

ORGANIZATIONAL ARRANGEMENT

How is the effort organized?

- Do you have regular meetings? How often and where?

- Are minutes kept? And if so, are they shared?
- Do you have a paid coordinator?
- Do you have committees or working groups? If so, are the groups primarily scientific or more policy oriented in nature?
- Who leads the group? How is this person selected? Does the leadership responsibility rotate?
- Who funds the effort? Is funding a limiting factor? How so?
- How is information shared? Is there a repository for documents or is it email and phone calls?
- Does any single group or agency have oversight over your effort?
- What led you to adopt this structure?
- Would a different structure have worked as well as the one you used?
- In hindsight would you change the structure you used? Would another have been better or worse? Why?

What are your organization's main activities (broad)? [Focus on goals and strategies]

- What are the overall **goals** of the effort?
- What **strategies** are being used to achieve these goals?
- How did you create these goals and strategies?
- Are they based on outputs or outcomes? Why?
- What role does science play in this effort?
- How do you incorporate science into your activities?
- What is the source of your scientific information?
- How do you define the “success” of this effort?

INFLUENCE ON MANAGEMENT DECISIONS

Does this effort have legally binding decision-making authority?

- If yes, then authority over what?
- If no, how do you influence decisions being made?
- Is this authority binational? How do you influence decisions on either side of the border?

CHALLENGES AND OPPORTUNITIES

What were the barriers to coming together initially? How did you overcome them?

- Was the national border a barrier to working together? How did you work through this difficulty?

What were the facilitating factors that helped you (or allowed you to) come together?

To what extent has politics played a role in the effort?

- Has there been a strong political advocate for this effort?
- Is/Was there an advocate from each country?

From where do you draw your support?

- Is there local support for this effort? Regional? National?
- Is there binational support or is the majority of your support from one nation?

Is there opposition to this effort?

- Is there local opposition for this effort? Regional? National?
- Is there opposition in both nations, or is the majority of the opposition from only one side of the border?

OUTCOMES

Process successes?

Ecological evidence of success?

ADVICE TO OTHERS

In hindsight what would you have done differently?

What advice would you give to other people who are working on transboundary issues?

ADDITIONAL INFORMATION

If I need further information on this effort, may I contact you?

What are the names and numbers of other individuals or organizations that you think I should contact regarding this effort?

Is there documentation that I should read in order to better understand this effort? Could you send this to me?

NOTE: If these issues have NOT been addressed, then ask:

What are the resource values of the area?

- Ecological values (threatened and endangered species)?
- Economic values?

What are the threats to (or concerns surrounding) these resources?

- Effect of threats on the ecology?
- Effect of threats on the economy?
- Are these threats transboundary in nature?

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