

Chapter 1: Introduction

THE GROWING ROLE OF LAND TRUSTS AND PRIVATE LAND CONSERVATION

Between 1970 and 1990, the United States lost almost 20 million acres of rural land to development, with residential and commercial centers consuming over 400,000 acres per year (American Rivers, 2002). The negative impacts of this development have spurred an associated growth in conservation efforts. Among the many considerations helping drive land conservation efforts are the desires to preserve wildlife habitat, maintain large-scale ecological processes, and protect specific threatened and endangered species. In addition to ecological factors, there are numerous social interests at play. Social considerations include the positive psychological effects of green space, the desire for natural recreation areas, and the historical and scenic value of rural lands. Combined, the ecological and social benefits of conservation provide compelling reasons for protecting land in the face of growing development pressures.

Many organizations and agencies work to conserve undeveloped lands, but their goals and associated strategies vary widely. Federal and state agencies manage billions of acres of public land. Although these public lands help conserve ecosystems and biodiversity, their management regimes do not necessarily provide the greatest degree of protection. While government agencies manage public lands, nonprofit land trusts typically focus on protecting private land.

In recent years, the public has recognized the need for private land protection and has taken action to promote land conservation across the country. While yearly totals vary depending on the number of local elections, ballot initiatives are becoming an increasingly popular way to endorse and support local land protection measures. In 2000, for example, voters approved 84 percent of land protection ballot initiatives. These land initiatives will raise \$7.5 billion for the protection of local natural areas (Smith, 2001). Private land conservation may well be the fastest growing segment of the environmental movement. This surge in protection is largely fueled by people's desire to save the green spaces and open lands that make their region of the country unique and valuable (Land Trust Alliance, 2002).

This growing public support for land conservation has resulted from and helped fuel a corresponding growth in the number of land trusts in the United States. Currently, this country boasts 1,263 local and regional nonprofit land trusts, a 42 percent increase over 1990 levels (Land Trust Alliance, 2002). The achievements of these local and regional land trusts have grown even faster. By 2000, land trusts had protected more than 6.2 million acres, a 226 percent increase over the 1.9 million acres protected as of 1990 (Table 1.1). Of this total, nearly 2.6 million acres were protected using conservation easements, almost a fivefold increase over 1990 totals (Land Trust Alliance, 2002).

Table 1.1: Land protected by local and regional land trusts

Acres Protected	1990	2000	Increase
Conservation Easements	450,385	2,589,619	475%
Owned by Land Trusts	435,522	1,247,342	196%
Transferred to Government Agencies and Other Organizations	1,022,640	2,388,264	129%
TOTAL	1,908,547	6,225,225	226%

Source: Land Trust Alliance, 2002

The growth of land trusts in the Midwest reflects the national trend. The number of land trusts in the Midwest has increased by more than 56 percent, up from 119 land trusts in 1990 to nearly 190 in 2000. According to the Land Trust Alliance's 2000 National Land Trust Census, these land trusts and conservancies have protected more than 344,300 acres. In Michigan alone, thirty-eight local and regional land trusts have protected 79,456 acres, with 33,654 acres of that total owned by the land trusts, 20,877 acres in conservation easements, and another 24,925 acres transferred to governmental agencies or conserved by other means (Land Trust Alliance, 2002).

THE GRAND TRAVERSE REGIONAL LAND CONSERVANCY

Michigan's northern Lower Peninsula reflects the national and statewide trends toward increased development and land conversion and the concomitant growth of private, non-profit land conservancies. Once a landscape dominated solely by forests and farms, northern Michigan now faces its own struggles with sprawl, farmland loss, fragmented forests, and degraded natural areas. Meeting these threats are a growing number of local and regional land conservancies that seek to protect the region's significant natural, scenic, and recreational lands from development. The Grand Traverse Regional Land Conservancy (GTRLC) is one such organization.

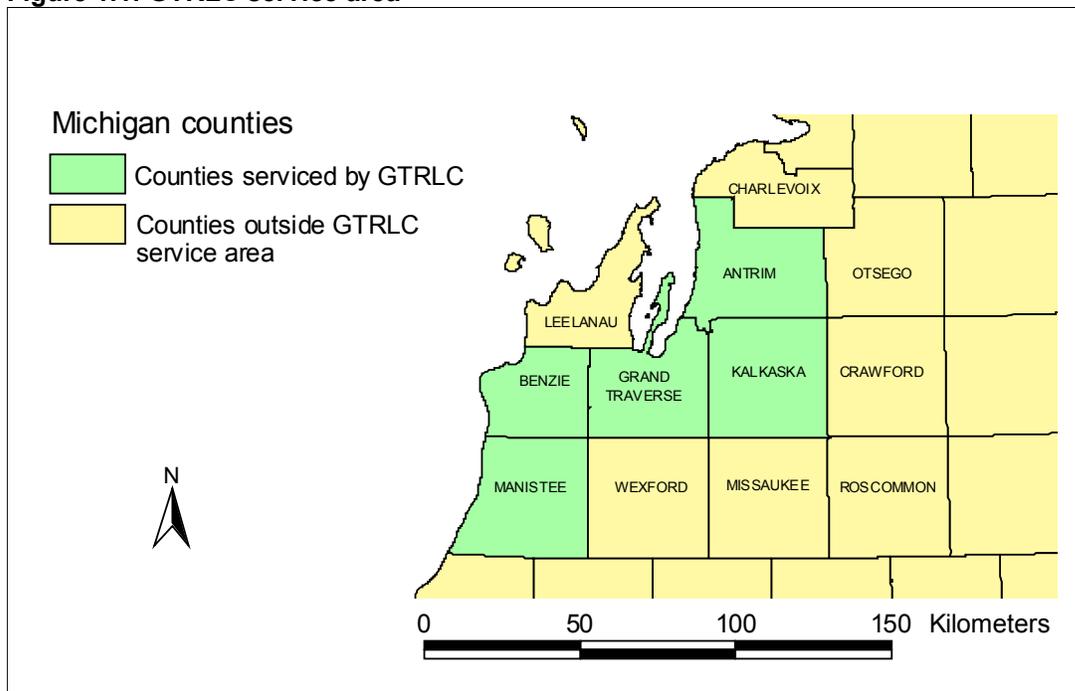
Founded in 1991, GTRLC has established itself as a leading regional land conservancy, with a history of on-the-ground accomplishments in Michigan's northwestern Lower Peninsula. GTRLC's original service area consisted of Antrim, Benzie, Grand Traverse, and Kalkaska counties. In October of 2001, GTRLC's Board of Directors voted to expand this service area to include Manistee County (Figure 1.1). GTRLC's mission is "to protect significant natural, scenic and farm lands for present and future generations." To achieve this mission, GTRLC strives to protect critical watersheds, wildlife habitats, productive farmlands, and unique dune landscapes. GTRLC started with a staff of one and now boasts 12 full-time employees. Its accomplishments in the field have grown even faster.

Most land trusts use three main techniques to promote conservation on private lands – fee simple acquisition, land donations, and conservation easements. The most widely used of these methods is the conservation easement. A conservation easement is a legal agreement between a landowner and a land trust or government agency that permanently protects land by preventing or limiting its future development. In addition to these three methods of protecting private lands, some land trusts now also engage in conservation development.

Conservation development involves land trusts working with developers, planners, and local units of government to design conservation-oriented development (Land Trust Alliance, 2002).

Over the last decade, GTRLC has preserved over 12,000 acres, including 26 nature preserves, 91 conservation easements, and nearly 36 miles of lake, river, and stream shoreline. To secure these results, GTRLC employs a variety of land protection methods, including fee simple acquisition, conservation easements, land donations, and bargain-sales. GTRLC also advances the conservation efforts of other groups through a technique called transfers. In a transfer arrangement, GTRLC uses its flexible financial resources to temporarily buy and hold land until a state agency or another conservation group secures acquisition funds for the project. In addition, GTRLC often provides advice and other assistance to government and local communities working to secure land for conservation purposes. These partnerships with local governments, the state of Michigan, the Michigan Natural Resources Trust Fund, and federal grant programs have greatly contributed to GTRLC's ability to protect land in northwestern Michigan (Rigney, 2001).

Figure 1.1: GTRLC service area



In order to address the growing impact of development in the region and expand its record of success, GTRLC is transforming its land protection efforts from an opportunistic to a proactive and planned operation. Like most other land trusts, GTRLC once used a relatively piecemeal approach to easement and acquisition work. If a landowner was willing to sell or donate an easement and the land had conservation value, GTRLC pursued protection efforts. While this parcel-by-parcel approach protected thousands of acres of valuable land, it was not guided by a comprehensive plan. GTRLC was concerned that the lack of a long-term

plan would reduce the ecological viability of some of its holdings and minimize the landscape-scale impact that it sought to deliver. GTRLC's Executive Director, Glen Chown, summed up the organization's concerns by stating, "We don't want to end up with islands of preserved lands surrounded by seas of development" (Smith, 2001).

GTRLC now relies increasingly on comprehensive conservation planning to guide its land protection efforts. In this model, GTRLC uses a number of different parameters to identify and prioritize lands for protection. With this approach, GTRLC aims to maximize the efficiency of its resource allocation and create a network of conservation areas that are spatially linked and ecologically sustainable (Rigney, 2001).

GTRLC's increased commitment to planning and prioritization efforts has enabled it to think more broadly about the most important landscapes and ecological systems within its service area. In the past few years, GTRLC has focused extensively on coordinated efforts on Lake Michigan dunes, prime farmland in the fruit belt, and the Chain of Lakes region of Antrim County. Spurred by The Nature Conservancy's designation of the Manistee River as regionally significant within the larger Great Lakes ecoregion (DePhilip, 2001), GTRLC has recently turned its attention to the Manistee River and its watershed. GTRLC conducted a quick assessment of the area and reached two conclusions. First, the ecological features and processes present in the watershed were a high priority for conservation. Second, the size of the watershed, coupled with its boundaries beyond GTRLC's traditional service area meant that GTRLC had limited knowledge of the key lands to protect. Clearly, the Manistee River watershed represents a large, important area where GTRLC can further develop its conservation planning and prioritization protocols.

MANISTEE RIVER WATERSHED AND THE PROJECT STUDY AREA

The Manistee River lies in the northwestern portion of Michigan's Lower Peninsula, flowing south and then southwest for nearly 371 kilometers from its headwaters in Antrim County to its mouth at Lake Michigan in Manistee County (Figure 1.2). The river's watershed is one of the largest and healthiest in the state. It drains over 5,000 square kilometers and covers portions of the following twelve counties: Antrim, Benzie, Crawford, Grand Traverse, Kalkaska, Lake, Manistee, Mason, Missaukee, Osceola, Otsego, and Wexford (Rozich, 1998).

In order to narrow the project's geographic focus and to produce a product of clear utility to GTRLC, the Manistee River project team (hereafter referred to as "project team" or "team") defined a smaller study area within the watershed (see Chapter 3). The study area consists of the watershed's 12 uppermost subwatersheds (Figure 1.2). These subwatersheds drain approximately 1,370 square kilometers and cover portions of the following five counties: Antrim, Crawford, Kalkaska, Missaukee, and Otsego.

Human activity has impacted the Manistee River along virtually its entire length – there are

two hydropower dams on its mainstem and numerous smaller dams on its tributaries. The watershed is similarly affected by varying levels of human disturbance, most notably scattered residential development and oil and gas exploration. Farming and forestry have altered much of the pre-settlement landscape.

Despite these impacts, the Manistee River remains one of Michigan's healthiest and most scenic rivers and one of its most popular for fishing and recreation. Twenty-six miles of the river are designated under the National Wild and Scenic Rivers system, and much of the rest of its length could qualify (US Forest Service, 1983). Several important factors contribute to the health of the river and its watershed, including the region's geology, land ownership patterns, and comparably low development pressures. The substrate geology is characterized by thick layers of highly permeable sands that filter runoff and reduce pollutant loads in the river. Groundwater-dominated hydrology also helps support relatively cool and stable flows year-round, making the river prime habitat for trout and other cold-water organisms (Rozich, 1998).

In addition to the local geology, large amounts of public lands and historically low development pressures have combined to protect many of the watershed's natural and scenic resources. Forest, wetland, and non-intensive agriculture are the dominant land covers in the watershed. Natural cover types are even more predominant in the study area (Table 1.2). Significant portions of the watershed are publicly owned and protected as natural areas. The Michigan Department of Natural Resources and the U.S. Forest Service own 65 percent of the lands along the corridor of the river's mainstem.

However, the de facto protection afforded by the watershed's physiographic characteristics and relative isolation is disappearing as development pressures increase in the region. A primary concern is increasing residential construction, including both large-scale subdivisions, such as Lakes of the North in southeastern Antrim County, and scattered housing in rural areas. While the majority of these projects are relatively small, the combined impact of this new development can be substantial. Of prime concern is the development's potential to disrupt the river's stable hydrology, fragment wildlife habitat, and degrade the riparian and associated upland ecosystems.

Many familiar with the area believe that the Manistee River stands at an important crossroads. Decisions made over the next ten years on conservation, development, and resource management in the region will determine whether or not the watershed retains its current mosaic of naturally functioning ecosystems. Similar to many other areas, conservation efforts in the region are driven by the desire to preserve existing ecological systems and natural areas and the recognition of increasing threats to those features.

Figure 1.2: Location of Manistee River watershed and study area within Michigan and in relation to other Michigan watersheds

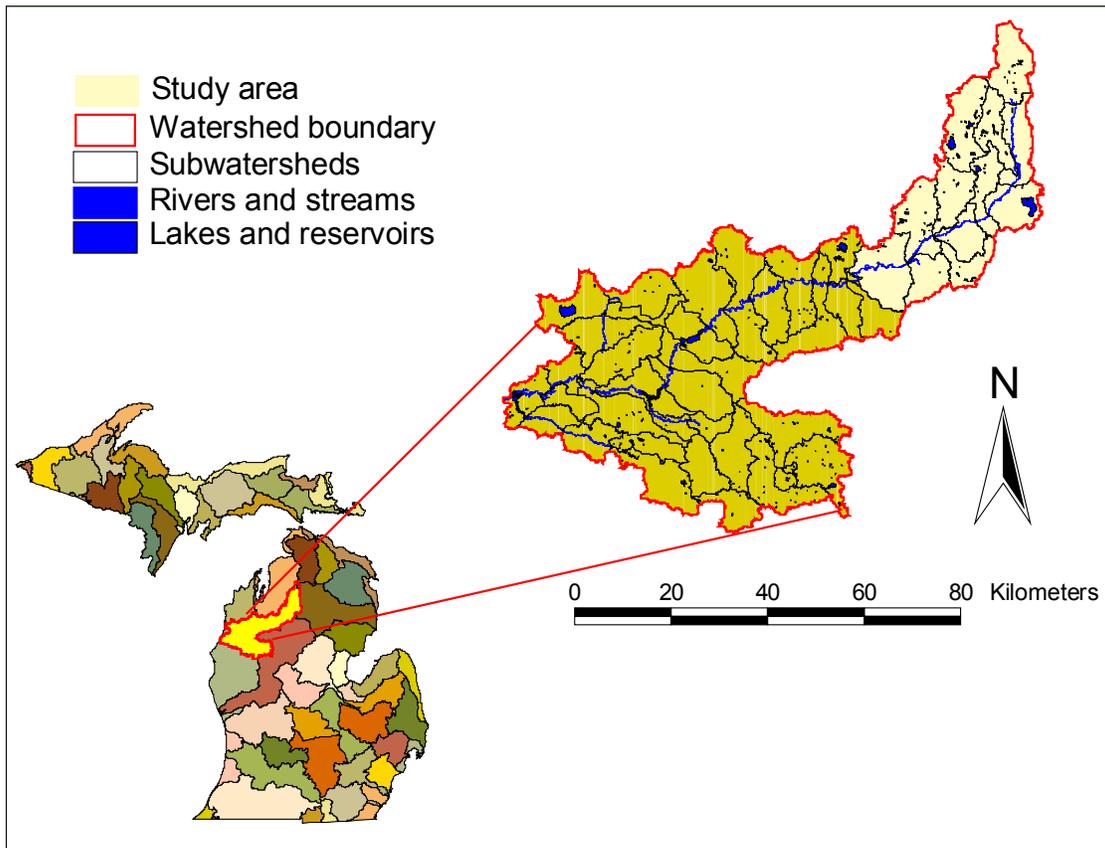


Table 1.2: Land cover in Manistee River watershed

Land Use	Percentage of Watershed	Percentage of Study Area
Forest Lands	41.5%	78.6%
Agricultural*	39.0%	6.4%
Wetlands (Forested & Non-forested)	12.8%	2.4%
Urban and Suburban	3.3%	2.7%
Range Land	1.7%	8.3%
Lakes and Streams	1.7%	1.7%

Source: Rozich, 1998 and MIRIS 1978 Land Cover Data

*Most agriculture is orchards, Christmas trees, or pasture; there is little cultivated cropland.

PROJECT DESIGN

The project team developed a conservation plan for the upper Manistee River watershed by reviewing ecological information, cataloging and analyzing important social factors, and manipulating existing data in a geographic information system (GIS). In the end, the team prioritized lands for conservation at both regional and parcel scales, analyzed threats to the study area's ecological integrity, and conducted a stakeholder analysis to examine opportunities for collaboration between parties interested in protecting important lands in the upper Manistee region.

The team began the project with an extensive literature review focused on land conservation and ecosystem management. Through this research the team evaluated several conservation planning approaches. Reviewing past planning approaches helped the team develop its own list of overarching goals and specific conservation objectives and eventually design its own planning approach for the project. Chapter 2 describes the team's development of its conservation approach and introduces the project's mission, goals, and objectives.

After establishing its goals and objectives, the team selected and formally delineated the geographic boundaries of the project's study area. There were three main considerations driving this process. First, the team had to ensure that the size of the study area was manageable given the time and resources of the project. Second, the team had to select a general location within the larger Manistee River watershed. Lastly, the team had to delineate exact boundaries based on defined and justifiable criteria. In the end, the team selected the 12 uppermost subwatersheds of the Manistee River watershed. Chapter 3 provides the details of this selection and delineation process.

The team determined that this conservation plan should incorporate the ecological, social, and political factors affecting conservation in the upper Manistee region. To that end, the team researched historical and current land uses and land ownership within the study area.

In addition, the team conducted the following separate analyses:

- Demographics – Using data from the US Bureau of Census, the team developed a demographic profile for the study area.
- Government Influences on Land Conservation – By conducting telephone interviews with county planning departments, examining county and township master plans and zoning ordinances, and reviewing existing government regulations, the team inventoried and evaluated the impact of government agencies on conservation efforts in the study area.
- Stakeholder Analysis – Through extensive telephone interviews and secondary research, the team identified the stakeholders in the study area and summarized their main interests, concerns, and positions related to land conservation.

- Threats to Ecological Systems and Functions – The team researched and evaluated each of the major threats to ecological integrity within the study area. The team also described and evaluated several potential sources of these threats.

The social descriptions and analyses are located in Chapter 4 and the threat assessment is found in Chapter 6.

The team’s conservation plan places a primary emphasis on evaluating and protecting areas of high ecological importance. Therefore, it was necessary to provide a basic description of the study area’s ecosystems and hydrology. Chapter 5 describes the regional ecosystems, local ecosystems, and hydrologic characteristics of the study area.

Guided by overarching goals and specific objectives, and having considered some of the social and ecological complexities inherent to conservation, this plan uses a detailed GIS-based analysis to identify the highest priority areas for conservation within the study area (termed Conservation Focus Areas or CFAs). Within the top ranked CFAs, the plan prioritizes individual land parcels for protection. Chapter 7 describes in detail the methods involved in this two-staged prioritization process and Chapter 8 provides a thorough description of the results of the team’s GIS-based analysis.

The project team expects the conservation plan to have three primary applications. First, the team intends for the plan to help guide and direct GTRLC’s investments of both time and financial resources in the upper Manistee River watershed. The team also hopes that the project is useful to a variety of other parties, including The Nature Conservancy, local conservation organizations, the Michigan Department of Natural Resources, and local planners. Second, the team hopes that the goals, objectives, methodology, and results of the plan further GTRLC’s larger efforts at developing a conservation planning protocol that delivers a quality product while operating within the finite resource limits of a middle-sized land conservancy. Finally, the team hopes that this project provides a framework that encourages collaborative decision-making and ecosystem-based land management in the Upper Manistee river watershed. Success on these fronts should help preserve the ecological integrity of the Manistee River watershed and GTRLC’s ability to deliver meaningful, landscape-scale protection throughout its service area. Chapter 9 outlines the most important implementation considerations and highlights many of the opportunities for collaboration and future work in the region.