

III. OBJECTIVES AND METHODOLOGY

This section includes descriptions of the specific objectives and methods for: (1) the study sample selection, (2) the easement comparison study, and (3) the monitoring surveys.

There were four primary objectives of this study:

- 1) to identify important trends in the language of WFCE documents;
- 2) to identify the range of techniques in use for monitoring easement restrictions and purposes on WFCEs;
- 3) to assess the effectiveness of monitoring techniques in use on WFCEs; and
- 4) to determine the correlations between easement restrictions and monitoring on WFCEs.

To accomplish the comparison of WFCE language, a list of potential restrictions and purposes was created by 1) adapting model easement tables presented in *Protecting the Land: Conservation Easements Past, Present, and Future* (Gustanski and Squires 2000) and 2) reading a selection of easements and recording the purposes and restrictions used in each. The comparison of 82 easements to this list of model easement language provided the basis for identifying trends in the content of easements.

To accomplish the survey-related objectives of this study, surveys were administered to the monitoring staff of the organizations holding the easements selected. Each easement specific survey inquired about the monitoring used for the restrictions and purposes as outlined in the easement language.

III.1 Study Sample Selection

III.1.1 Why 1,000 Acres and Larger?

Due to the very high number of conservation easements in the United States at the time of this study, a size threshold was established to create a smaller pool of potential easements. The threshold of 1,000 acres eliminated from the sample set a large number of easements, narrowing the sample set to a manageable size.

III.1.2 How Easements were Obtained

At the time of this study, no national registry or listing of working forest easements existed. Therefore, a list was created for the purposes of this study, beginning with information on easements from TNC and the Land Trust Alliance (LTA)(Van Ryn 2003). Additional information about state-held easements was sought from staff at the USDA Forest Legacy Program and from conservation organizations and agencies in each state. These groups were also asked to identify names of other organizations in their state that might hold WFCEs. These subsequent organizations were then contacted about the easements they hold. Because conservation organizations tend to be knowledgeable of the activities of other organizations within their state, this method was successful in creating a list with the majority of WFCEs over 1,000 acres. Assurances of privacy measures were given to the conservation professionals, in order to obtain the most accurate information.

The majority of easements identified in this manner was obtained in printed form and formed the basis of the study sample. In certain instances, the authors were only able to obtain copies of a subset of an organization's WFCEs over 1,000 acres, or in fewer cases, none at all. Despite these exceptions, 82 WFCEs over 1,000 acres were obtained, spanning a broad range of sizes (Figure III.1), ages (Figure III.2), and regions (Figure III.3). This collection of easements became the study sample for the easement comparison study (For a description of the regions used, see section III.2.1).

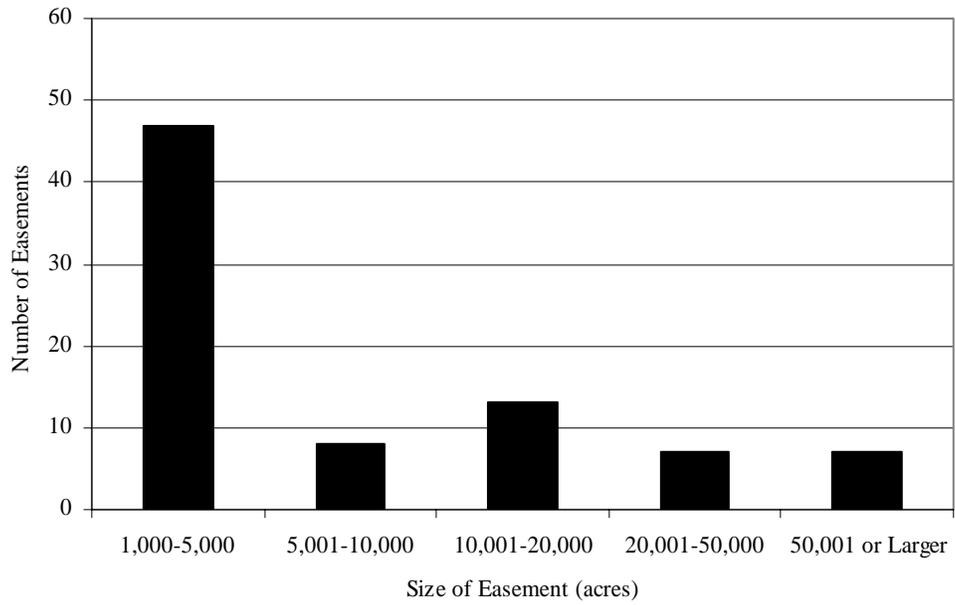


Figure III.1 Easement sample set by size of easement property in acres.

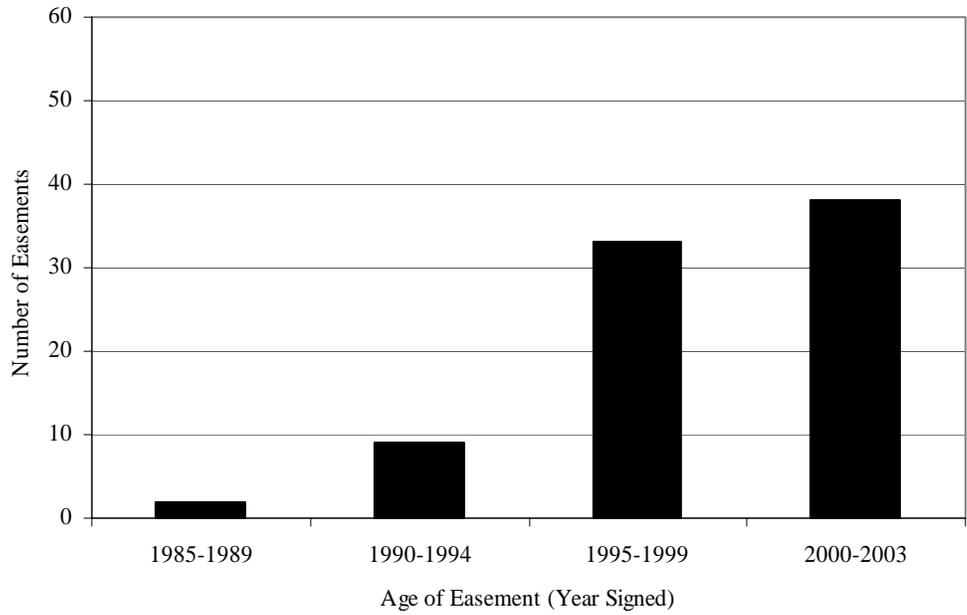


Figure III.2 Easement sample set by age of easement (year signed).

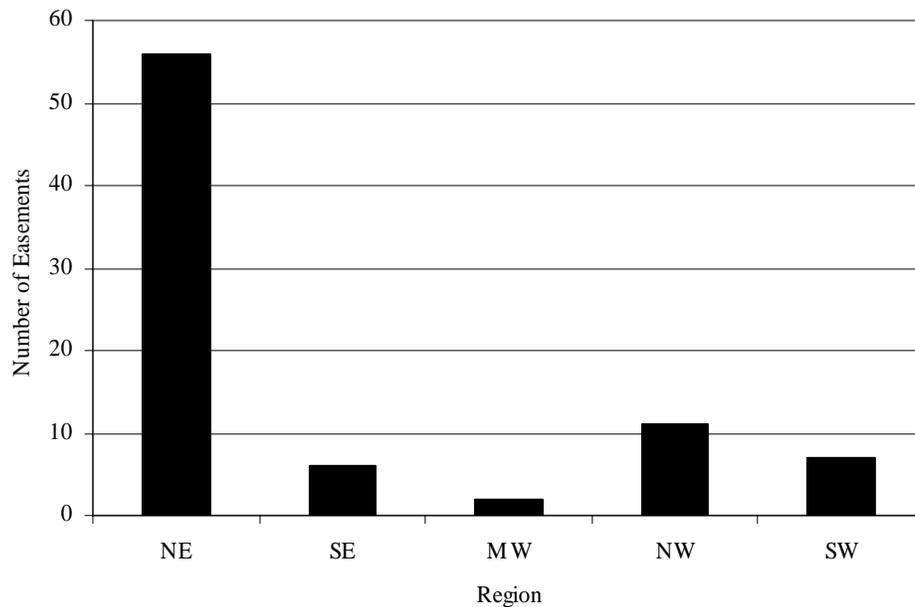


Figure III.3 Easement sample set by geographic location.

The methods outlined above did not lead to a random sample of easements, but this shortcoming was mediated by the diversity of the study sample in size, age, and location. Eighty-two easements were read and applied to the easement comparison matrix (see glossary of terms).

III.1.3 Monitoring Survey Sample Set

The objective of the survey analysis was to understand how WFCEs are currently monitored and the strengths and weaknesses of the monitoring. More specifically, the objective was to reflect the techniques used across the range of organizations and individual monitoring professionals. To accomplish this, a subset of the larger sample was used.

The easement sample set was broken down into a subset of 51 easements for the purpose of conducting surveys.

- Easement Comparison Study Sample Set: 82 easements
- Monitoring Survey Sample Set: 51 easements

The survey subset was created with a methodology designed to achieve the following goals:

- 1) Include as many monitoring individuals as possible.
- 2) Avoid a large number of easements monitored by one individual.
- 3) Maintain a diverse study sample by size (acreage).
- 4) Maintain a diverse study sample by age (easement date).
- 5) Maintain a diverse study sample by region.
- 6) Employ a systematic and unbiased selection process.

The following rules were used to select the survey study sample from the easement study sample.

- 1) Ensure at least three easements from every age class.

METHOD: Easements were grouped into four age classes (1985 to 1989, 1990 to 1994, 1995 to 1999, and 2000 to 2003). If an age class had more than three easements, three easements were selected at random from the age class. Any selection that repeated a monitoring individual already selected was discarded, unless avoiding repetition of a monitoring individual was impossible. These easements were included in the survey study sample. If there were three or fewer easements in an age class, then all were included.

- 2) Ensure at least five easements from every size class.

METHOD: Easements were grouped into seven size classes by acreage (1,000 to 5,000; 5,001 to 10,000; 10,001 to 20,000; 20,001 to 50,000; 50,001 to 100,000; 100,001 to 200,000; and more than 200,000). For each size class, the number of easements (in addition to any easements already selected for that age class through step 1) necessary to reach the minimum of five from that size class was determined. If a size class needed additional easements, they were selected at random from the size class. Any selection that repeated a monitoring individual already selected (in this step or in Step 1) was discarded, unless avoiding repetition of a monitoring individual was impossible. These easements were included in the survey study

sample. If the number of easements in a size class matched, or was less than the number needed, then all were included.

- 3) Ensure at least one easement from each monitoring individual.

METHOD: Any monitoring individuals not selected through steps 1 and 2 were included by the random selection of one of their easements. (There were no monitoring individuals responsible for easements in the easement study sample who monitor easements in two states. Therefore, this step assured regional diversity as well as diversity of monitoring individuals).

- 4) Complete the survey sample while avoiding more than five easements for one individual.

METHOD: Additional easements were selected at random to complete a study sample of fifty easements. Any selection that represented a sixth easement for a single monitoring individual was discarded.

Easements which were known to be unavailable for monitoring surveys were left out of the survey sample selection process. Surveys could not be administered for several easements in the survey sample. The survey sample ultimately included 51 easements, of which 39 were surveyed via conversations with 24 monitoring professionals.

For the monitoring data reported in the results section, it is important to note that the findings were based on the easements for which monitoring is currently being done. An exception to this procedure was made if an organization had an established protocol for monitoring similar WFCEs and will monitor the new easement in like fashion once enough time has elapsed for monitoring to take place. In these cases, the survey was conducted for the new easement assuming that their established monitoring protocol would be followed.

This methodology met the primary objective of including the largest number of monitoring individuals in the survey sample as was possible. The survey sample also maintained a distribution of size (Figure III.4), age (Figure III.5) and region (Figure III.6).

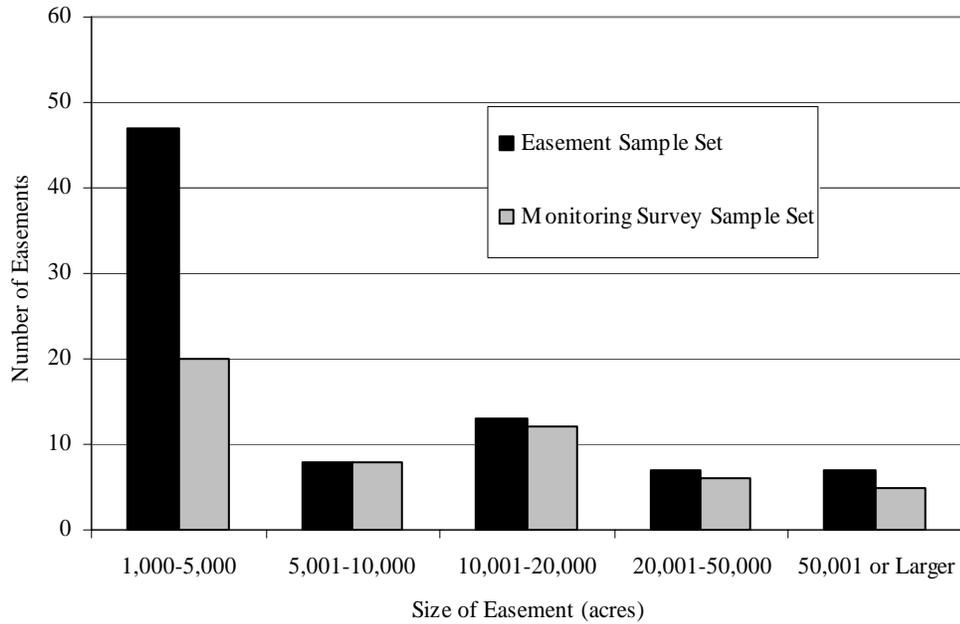


Figure III.4 Easement sample set and monitoring survey sample set by size of easement property in acres.

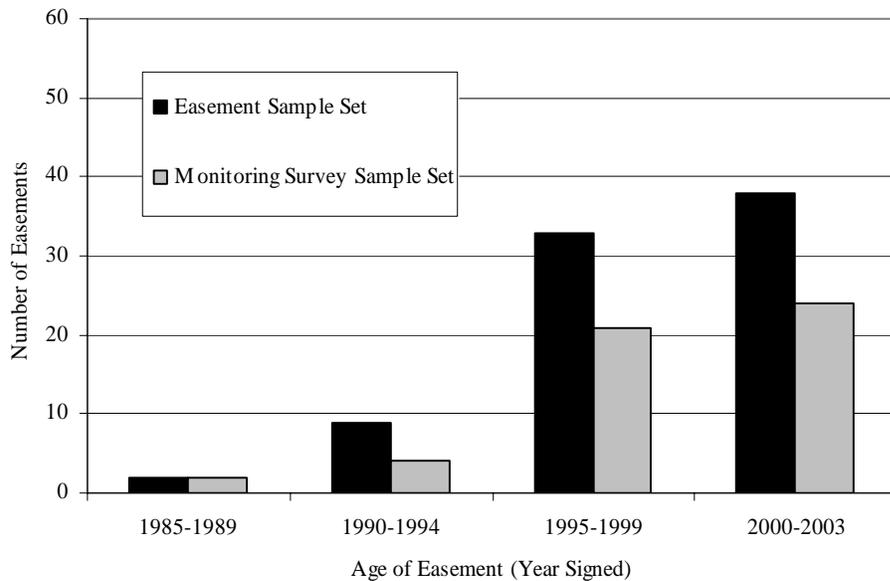


Figure III.5 Easement sample set and monitoring survey sample set by age of easement (year signed).

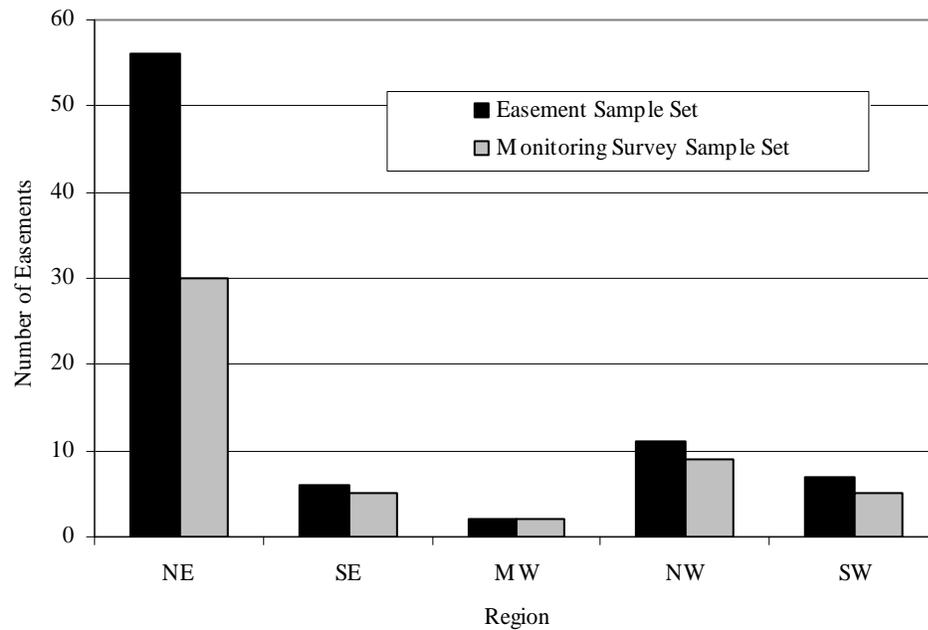


Figure III.6 Easement sample set and monitoring survey sample set by region.

The monitoring survey sample has a greater proportion of larger easements and more recent easements than the easement comparison study sample. The regional distribution is also different between the two study samples. While this difference creates limitations in making generalizations about monitoring techniques on the larger easement comparison study sample, it is critical to the study findings to identify trends in the techniques used by the individuals monitoring these easements. Therefore, slight biases toward larger easements in the monitoring survey study sample were accepted, in order to reap the benefits of a sample more representative of monitoring individuals. This decision was made more palatable by the fact that there is a trend in the easement comparison study sample toward larger WFCEs in recent years (Figure III.7). Overcoming the challenges specific to monitoring these large easements is likely to become more important if this trend continues. The bias toward more recent easements was also deemed acceptable. The monitoring techniques currently used for a WFCE will not necessarily be skewed by the age of the easement. The baseline documentation, however, is likely to be different for easements varying in age. The baseline

documentation efforts from recent years are likely to be of more interest to the conservation community than those conducted many years ago.

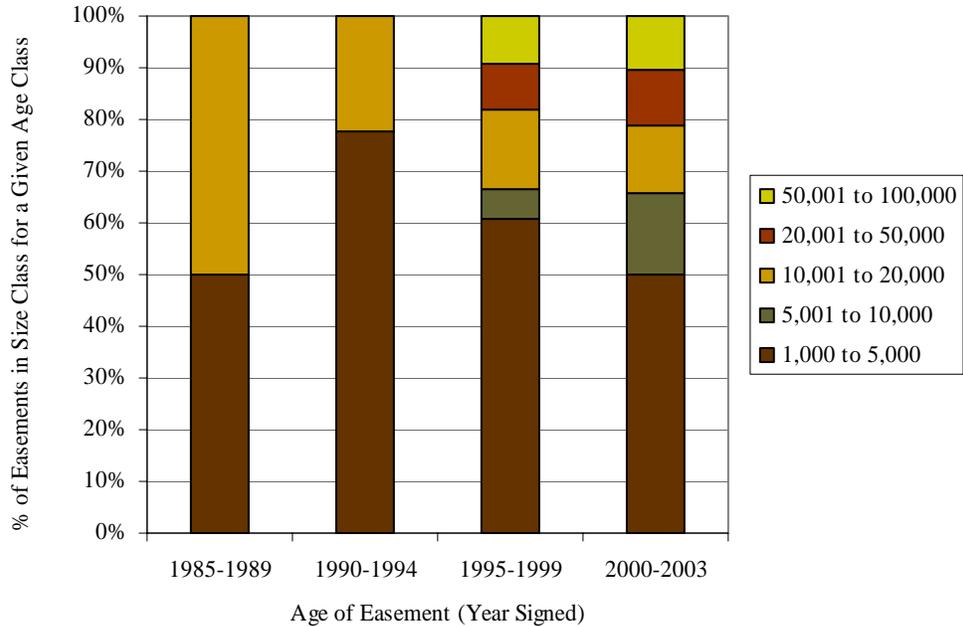


Figure III.7 Easement sample set by size over time. Each bar represents 100% of the easements in a given age class.

III.2. Easement Comparison Study

Objectives: There were two major components of the easement comparison study. The first involved identifying and categorizing the legal language of the easements in the study sample. To provide an understanding of the trends in legal language, the purposes, restrictions, and forest management requirement sections of the easements were listed. To facilitate reference and eventual analysis, the year of signing, state, grantor, grantee, and acreage were catalogued for each easement. This information enabled the comparison of individual easements or groups of easements by region, size, age, and the holding organization. The second component involved using much of the data compiled from the aforementioned sections to create custom surveys to be administered to monitoring professionals. These surveys are described in greater detail in section III.3.

III.2.1 Determine Trends in Easement Language for: Purposes, Restrictions and Forest Management Requirements

Easement language was analyzed by categories based on a matrix of easement purposes and restrictions. Format for the matrix was adapted from tables presented in *Protecting the Land: Conservation Easements Past, Present, and Future* (Gustanski and Squires 2000). The organization followed the format typically utilized in WFCEs.

A matrix of easement language was developed using a model of easement language comparison (Gustanski and Squires 2000) and examinations of sample WFCEs, and was reviewed by a land conservation professional (See Appendix A). Each easement in the study sample was entered into the matrix. For example, one purpose category was “biodiversity.” If an easement had “preserve biodiversity” as one of its purposes, this category was entered. The presence of restrictions was indicated in a similar fashion. Language in the restrictions and reserved rights sections of easements was grouped together for determining restrictions, since both sections informed the degree to which activities on and uses of the land are allowed by the easement. For both purposes and restrictions, assumptions were avoided (such as assuming an implicit restriction against fishing if “public access” was restricted) and relied on the restriction or purpose being explicitly stated. However, allowances were made for reasonable variations in wording: for example, “no angling,” and “no taking of fish” were both categorized as “no fishing”.

Separate categorical headings in the matrix were created to organize easement language into general and specific sections. The aggregated general section allows a simplistic overview of the existing language of individual easements. Detailed headings allow specific analysis of the easement language. For example, while “recreation activities” in the general section reveals the overall presence or absence of recreational activity, the detailed headings allow the reader to know what kinds of specific recreation restrictions are mentioned (such as ORV use).

As a pre-test of the matrix, two readers identified language within the purpose, restriction, and forest management requirement sections of eight different easements. To maximize

efficiency and to reduce error, a set of instructions was created to guide the reading of easements and to provide consistency among the four easement readers in their approach of identifying and categorizing language.

III.2.1.a Forest Management Plans

Forest management requirements constitute a distinct section of the matrix, since the majority of WFCEs tend to separate forest management requirements from other restrictions. Since many WFCEs require a forest management plan to direct forestry activities and list guidelines for topics and requirements that must be included in such plans, the language pertaining to forest management plans was categorized separately from the general easement. Although many WFCEs use forest management plans to guide forest management, some easements include forest management requirements without specifying the need for a forest management plan. Easement language about forest management plans was considered separately to determine how each easement handles the issue of forest management. For each easement, readers indicated whether a forest management plan was required and whether approval of the plan by the easement holder was required.

III.2.1.b Special Management Areas and Best Management Practices

Similar to forest management plans, many easements include specific language (purposes, restrictions, etc) concerning special management areas. These were classified separately from the main easement. This distinguishes between restrictions that apply to the entire property and those that only apply to a portion of the property. WFCEs also often require that forestry activities follow best management practices (BMPs). BMPs are usually developed to be applied in a certain state or region, or for a specific use or type of ecosystem. Since BMPs often guide forest management requirements in easements, it is necessary to consider BMP language in order to gain a comprehensive understanding of the forest management requirements for particular easements. Limitations to certain forestry activities or procedures promoted by these BMPs were considered to be restrictions in the easement. However, these were categorized separately to enable

researchers to distinguish between restrictions listed in the easement and those contained in BMPs.

III.2.1.c Approaching Data Analysis

Once all of the easement comparison data was collected, it was reorganized and consolidated for easier analysis. Redundancy was eliminated by collapsing the data into more logical and streamlined categories. Three main areas of interest were targeted for analysis: (1) easement holder, (2) easement age, and (3) easement size. For each of these areas, trends were identified nationally (e.g. public holders v. private holders), and the data for each area were also compared regionally (Northwest, Southwest, Midwest, Northeast, and Southeast).

Regions were identified as follows, using only the states represented in the easement comparison study sample set (see Figure I.1):

- 1 – Northeast (Maine, Vermont, New Hampshire, New York, Pennsylvania)
- 2 – Southeast (North Carolina, South Carolina, Alabama, Florida)
- 3 – Midwest (Wisconsin, Michigan)
- 4 – Northwest (Washington, California, Wyoming, Hawaii, Montana)
- 5 – Southwest (New Mexico, Utah)

In addition to the areas of interest mentioned above, six themes (Water, Technology and Extraction, Development, Forest Management, Ecosystems and Rare Species, and Recreation) were used as part of the data analysis. These themes were chosen based on 1) information from the literature review, 2) topics raised at the 2003 Land Trust Alliance Rally, and 3) the purposes and restrictions found in the first phases of the easement comparison study. These themes were used to conduct data analysis at the national and regional level. Only regional trends in easement holder, age, and size that deviated from national trends were analyzed.

An associated set of purposes and restrictions was developed for each theme, which was used to identify the two most relevant purposes and four most relevant restrictions for each theme. The decision of which purposes and restrictions were most relevant for each theme was evaluated by a land management professional (Hall 2004). Analysis by theme

attempted to answer two questions: (1) What percent of easements mention at least one purpose or restriction in each theme category?; and (2) What is the average number of theme-based purposes or restrictions that those easements mention? Answers to these questions were used to determine trends in the themes that are most often exhibited by WFCEs based on (1) easement holder, (2) easement age, and (3) easement size.

III.2.2 Provide Content for the Monitoring Survey

The monitoring surveys were compiled from data generated by the easement comparison study. That data included: 1) a single list of all likely easement language (including restrictions, purposes, etc.), and 2) individual lists of the pertinent language found in each easement. These individual lists were used as the basis for the specific questions asked in the monitoring surveys in order to identify and evaluate the monitoring regime for those easements. Questions were asked of the monitoring professional for a given easement on a subset of the restrictions and purposes that pertained to that easement (see discussion of survey methodology below).

III.3 Monitoring Surveys

The primary data source used for determining information about WFCE monitoring was a set of semi-structured telephone surveys of 23 monitoring personnel representing 15 states and 51 easements. Monitoring personnel were given written and verbal assurances of privacy to encourage honest and complete answers. The survey was approved by the University of Michigan's Institutional Review Board. A survey template can be found in Appendix B.

III.3.1 Why was a Survey Used?

The use of a survey was selected as the optimal method for gathering data about monitoring methods currently in use on WFCE lands. Of particular interest was the correlation between monitoring and the restrictions and purposes listed in the easement.

The survey was designed to answer the following questions :

- What is the range of monitoring techniques in use on WFCE lands?
- How does monitoring correlate to restrictions?
- To what extent is monitoring done on WFCE lands?
- What is the perceived effectiveness of monitoring techniques, in the opinion of the monitoring staff?

III.3.2 Why a Phone Survey?

Administering the survey by telephone was chosen for several reasons:

- 1) The number of WFCEs over 1,000 acres with staff willing to participate limited the study sample. With a relatively small selection of individuals, it was essential to obtain a high response rate among that group in order to achieve a well-rounded data set.
- 2) Due to the length and detail of the survey, and the inevitable presence of qualitative replies not easily recorded on the survey, the data would be more complete and accurate if administered by phone.
- 3) The opportunity to engage in a dialogue with monitoring professionals was valuable.
- 4) To minimize the variation in preparation and research that went into completing the survey.

III.3.3 Why a Customized Survey?

In order to accurately survey the respondents about the link between their monitoring and the restrictions in their easements, each interviewer needed to know the details of a particular easement for the corresponding interview. While one document containing all the possible inclusions in an easement might have been used, it would have been significantly more time consuming and awkward, and would not have allowed the interviewers to speak confidently about the contents of an easement.

While the surveys used data from the easement comparison study, they did not include questions about every restriction and purpose found in each easement. In order to keep the size of the surveys manageable, the survey questions focused on the most pertinent restrictions in terms of monitoring. For example, restrictions on subdivision did not translate into questions about how subdivisions were monitored.

The purposes section data was also not translated directly into survey questions about monitoring. Purposes from the “ambient conditions” and “forest health” sections were the only ones inquired about in the monitoring surveys. As in other sections, items that were not pertinent to the monitoring were not included, such as “economic viability.”

III.3.4 Survey Sections & Collection

Monitoring experts were contacted in writing and asked if they would be willing to participate in the study by way of a phone interview. In order to facilitate the survey process, willing respondents were emailed a copy of the questions several days before the phone call. This gave respondents the opportunity to review the document and prepare their answers.

Three members of the research team conducted the surveys. Survey questions (forced choice and open-ended) were predetermined. Explanations of questions were given when necessary. The interviewers used probing comments and questions to obtain clear responses about each monitoring method. All interviews were recorded to ensure accurate reporting of answers; confidentiality of response was guaranteed to all monitoring experts. The survey was pre-tested on 5 individuals chosen at random within the survey sample, resulting in minor modifications of questions.

The survey consisted of three categories: organization demographics, restriction monitoring, and purposes monitoring (not tied to a specific restriction). The data collected for each easement during the easement comparison study was used to custom design 51 surveys. Nine questions about organization demographics remained the same for all surveys. The number of restriction and purpose questions comprising the survey

ranged from 21 to 79 items, correlating to the number of restrictions and purposes stated in each easement.

Respondents were asked for demographic information about their organization, including the geographical area of focus, number of WFCEs held, number of monitoring personnel, annual stewardship budget, total acreage protected by WFCEs and whether or not they have a monitoring protocol. If a written monitoring protocol did exist, a copy was requested for further analysis. This demographic information was collected for analysis of potential trends related to easement data (for example, do organizations with more monitoring personnel monitor more frequently?).

Respondents were asked to describe the overall monitoring method used for the entire set of restrictions and purposes relating to their easement. Open-ended questions guided monitoring experts as they explained the monitoring techniques they used. Most responses about monitoring techniques fell into relatively few categories and could be readily coded. If respondents used multiple techniques to monitor for one restriction, this combination strategy was coded as one monitoring method. When a combination method was used (e.g. ground & aerial) single ratings for the effectiveness and frequency of this combination were requested, instead of specific ratings for each one. In addition to current monitoring techniques, respondents were asked whether or not baseline data was collected for each restriction or purpose.

The purpose section of the survey was set up the same way as the restriction section, with questions about the frequency and effectiveness of the overall method in use. As in the restriction section, respondents were asked if baseline data was collected on the purpose (e.g. water testing data for a purpose of “maintain water quality”). The effectiveness scale in the purpose section rated the certainty to which experts could determine if the purpose was being achieved. Only direct monitoring for purposes was counted as monitoring. Thus, for a purpose of “maintain water quality”, a response of “water testing” was recorded as monitoring, while a response of “ensure that riparian zones are intact” was not recorded as monitoring.

Throughout the survey, monitoring experts were presented with forced choice questions about the frequency of their monitoring activity based on a five-point scale (more than two times per year/twice per year/once per year/once every two years/and less than once every two years). Respondents were asked to rate the effectiveness of each monitoring activity on a 5-point Likert scale with 1 equaling ineffective and 5 equaling highly effective.

The survey terminology varied slightly from that used in the easement comparison study: “annual meeting” was part of the easement comparison matrix, but “meeting with landowner” was used in the surveys. This distinction has been maintained throughout the analysis for accuracy. During the analysis of survey data, changes were made to the way frequency was calculated. Data from the original scale (see above) was re-calculated into a numeric scale incorporating the number of methods in use. For example, a property monitored by ground alone, once a year, was rated a one. A property monitored with the combination of ground and aerial, each once a year, was rated a two, since data was collected on it during more than one visit. While this method more accurately measured frequency, it was not the direct response of those surveyed and may bias the frequency results towards those monitoring with combination methods. Regional data was analyzed based on the regions used in the easement comparison study.

III.4 Limitations of Study

III.4.1 Introduction/General Project Limitations

What is a Working Forest Conservation Easement (WFCE)? No precise definition exists for this term, only broad and inclusive definitions (see glossary of terms). As a result, the use, management and ownership of the properties included in this study may vary considerably. For example, one property may be used primarily for cattle grazing but have both large tracts of forest and forestry provisions in the easement language, whereas another property may be exclusively used for industrial forestry. Both of these were considered WFCEs under the definition used by this study, which simply required that a property be over 1,000 acres and considered a “working forest” by the land professionals

contacted for information about the easement. This study is not based on a random sample of easements, thus the results may or may not be representative of all WFCEs in the U.S. At the time of this study, no comprehensive national list of easements was in existence, therefore it is difficult to know if the sample is representative.

Data for several regions included in this study reflected a limited number of easements. For some regions, such as the Midwest, a small number of easements were identified. While the number of easements in a given region may represent a large percent of the total WFCEs (greater than 1,000 acres) in that region, the results are statistically limited due to the small sample size. For this reason, regional analysis was only conducted where regional trends differed from aggregate trends.

The decision to research WFCEs over 1,000 acres was done to eliminate a large number of small easements from the sample set. This allowed the study to focus on large forest tracts, those most likely to be viable for forestry uses in the long term. The value of limiting the study was confirmed by Tina Hall, from the Michigan Chapter of the Nature Conservancy (Hall, 2003). As part of the analysis stage, easements were split into smaller groups based on age, size and regional categories. Age categories were created with 5-year intervals. Size classes were chosen based on natural breaks in the data. Regional categories were determined by dividing the country into five regions along commonly used divisions.

For several reasons, the monitoring survey results are not comparable to the easement language comparison study results. For example, the monitoring survey sample set has a different regional, size and age distribution than that of the sample used in the easement comparison study. Also, the monitoring surveys were based on a subset of the information gathered for each easement in the easement language comparison. While the matrix was consolidated for easier analysis of trends, the survey was not. This resulted in some of the trends found in the survey analysis having no equivalent data from the matrix analysis.

III.4.2 Limitations from the Easement Comparison Study

III.4.2.a Developing the Matrix

The methodology used for developing the matrix for easement comparison consisted of the examination of several sample easements to generate lists of restrictions and purposes, consultation of a land conservation professional, and reference of the book, *Protecting the Land: Conservation Easements Past, Present, and Future* (Gustanski and Squires 2000). Restrictions were identified based on the content of this book and the reading of sample WFCEs. Easement readers indicated the presence of terms found in the matrix, or language very similar to those terms. This led to an inclusive definition of restriction, which should be considered when reviewing the results. For example, this inclusive definition likely resulted in higher percentages of restrictions “not monitored” or “not in baseline.” In some cases, survey respondents expressed their disagreement with our definition (or inclusion) of a restriction.

The format used for comparing the language of easements was a matrix, containing rows of restrictions and purposes that might be found in the easements. After reading through all of the easements and filling out the matrix, it was consolidated, which involved combining similar restrictions and purposes into more general categories. Decisions on what and how to consolidate the matrix were made in a way that appeared logical (e.g. “fishing” was lumped into “non-motorized recreation”) but resulted in occasional loss of resolution. In addition to consolidating the matrix, the research team identified a small number of restrictions and purposes that were unnecessary or ambiguous and removed them from the matrix. (For example: the purpose of “architectural aspects” was not found in any easement, and was removed).

III.4.2.b Reading Easements

Four researchers read and analyzed easement language in the 82 WFCEs used in the easement comparison study. Prior to this effort, one easement was selected and applied to the matrix by multiple reviewers. From this review, a protocol for applying easement

language to the matrix was developed to minimize discrepancies in the interpretation of easement language (See Appendix A).

III.4.2.c Thematic Analysis

Six themes were used in one part of the data analysis (The process for selecting these themes is outlined in section III.2.1c). A set of associated purposes and restrictions was developed for each theme. From these sets of theme-based purposes and restrictions, the two most relevant purposes and four most relevant restrictions for each theme were identified. Review by a land management professional (Hall 2004) verified the appropriateness of the selection. For five of the six themes two purposes and four restrictions were used for analysis, while the “recreation” theme used one purpose and three restrictions (There was only one purpose and three relevant restrictions related to recreation). For this reason, trends in the recreation theme must be considered independently from trends in other themes. In addition, trends seen in the data from the theme analysis cannot be considered comprehensive, since they are based on a small subset of the purposes and restrictions associated with each theme. While these limitations exist, the results of the theme analysis were consistent with results seen in the overall data analysis. This similarity lends credibility to the idea that the theme analysis can be considered a representative summary of the data.

III.4.3 Limitations from the Monitoring Surveys

III.4.3.a Study Set Selection

The selection process of easements for the monitoring survey study sample allowed for the inclusion of easements from all categories with regards to age, size, state, and holder. This process did not create a random sample of the 101 easements collected overall, but instead assured that the easements included in the monitoring survey would be representative of all time periods, states, holders, and size categories.

III.4.3.b Survey Participation

Not all monitoring professionals were willing to participate in the monitoring survey, for this reason four surveys were not completed. It may be that some of those who were unwilling or unable to participate were conducting monitoring which they considered inadequate or ineffective. On the other hand, the monitoring that those four individuals were doing may have been first rate. In any case the final results would likely be different, had they participated in the research.

III.4.3.c Conducting Surveys

While considerable effort was made to assure similar interview styles, three different interviewers conducted the 39 surveys via telephone. Undoubtedly, interviewers differed in their interpretation of answers, and their surveying technique. Individual differences may have extended into the range of time spent preparing for each survey (including reviewing the easement language). During the surveys, if the respondent did not know how to answer a question, or did not agree with the interpretation of the easement, questions were left blank. It was left up to the interpretation of the surveyor and the respondent to decide when to skip questions.

The monitoring professionals interviewed also varied in their experience, perspective, knowledge, and personality. This factor is especially important to keep in mind when reviewing the subjective ratings for effectiveness.

III.4.3.d Purpose Monitoring

In the purpose monitoring section of the survey, several respondents replied that their monitoring for goals was “performance-based” or “indirect” even though the survey instrument and the interviewer explain that the definition of purpose monitoring for this research was monitoring that went above and beyond compliance monitoring. For this study, “indirect” or “performance-based” monitoring was considered “not monitored”, as there was no direct monitoring activity for the goal (e.g. water testing for “water quality”). However, it could be argued that a well-designed set of easement restrictions should provide for those goals.

III.4.3.e Third Party Monitoring

When respondents indicated the use of “third-party monitoring,” no further data was collected. Interviewers did not follow up with the third-party to gather data on methods, frequency, or effectiveness.

III.4.3.f Frequency Rating

In order to analyze the frequency of monitoring data, the original frequency scale (less than once every two years, every two years, once a year, twice a year, more than twice a year) was re-calculated into a numeric scale that incorporated the number of methods in use. For example, a property monitored by ground alone, once a year, was rated a one. A property monitored with the combination of ground and aerial, each once a year, was rated a two, since data was collected on it during more than one visit. While this method more accurately measured frequency, it was not the direct response of the respondents and may bias the frequency results towards those monitoring with combination methods.

The methodology used during the surveys for recording monitoring information limited the variety of responses that were received in two ways: 1) an overall monitoring method was recorded for the entire set of restrictions and goals, instead of specific information on each one, and 2) when a combination method was used (e.g. ground & aerial) single ratings for the effectiveness and frequency of this combination were requested. This was necessary to control the size of the survey, but precluded a specificity which might have indicated which of the methods in a combination was viewed as most effective.