

2014

Balancing Preservation and Promotion of Natural Resources: A Case Study of Newaygo County, Michigan

Jeffrey Koch

Illinois State University, jfkoch@ilstu.edu

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Balancing Preservation and Promotion of Natural Resources: A Case-Study of Newaygo County, Michigan

*Recommendations for sustainable natural
resource management with implications for
rural development and philanthropy*

Written by Jeff Koch

July 2014



Community Natural Resource Interviews

Aaron Bennett	President Farmer	Newaygo County Farm Bureau Bennett Farms
Jacqueline Bilello	Stewardship Coordinator	Land Conservancy of West Michigan
Kelly Bishop	District Conservationist	Natural Resource Conservation Service
Doug Buhler	AgBioResearch Director	Michigan State University
Greg Clark	Parks and Recreation Supervisor	Michigan State Parks
Ryan Coffey	Land Use Coordinator	Michigan State University Extension
Patrick Conklin	Associate Director for Safety, Health, and Environment	Nestlé Nutrition/Gerber Products Company
Pete DeBoer	Land Protection Coordinator	Land Conservancy of West Michigan
Kent Folkema	Dairy Farmer	Folkema Farms
John Hruby	Environmental Supervisor	Nestlé Nutrition/Gerber Products Company
Ned Hughes	Board Treasurer	Newaygo Conservation District
Terry Johnson	Factory Manager	Nestlé Nutrition/Gerber Products Company
Andy Lofgren	Executive Director	Newaygo County Economic Development Organization
Vaughn Maatman	Executive Director	Land Conservancy of West Michigan
Chris May	Stewardship Director	Michigan Nature Conservancy
Gary Noble	Executive Director	Muskegon River Watershed Assembly

Alan Steinman	Director	Annis Water Resources Institute Grand Valley State University
Laurie Supinski	Executive Director	Newaygo County Convention and Visitors Bureau
Tom Thompson	Board Chair	White River Watershed Partnership
Joni Tubbergen	Organic/All-Natural Farmer	Pheasant Ridge Farms
Dale Twing	Drain Commissioner	County of Newaygo
Stanley VanSingel	Farmer Township Supervisor	VanSingel Farms Grant Township
Diane Walker	Supervisory Planner	U.S. Forest Service
Ron Welton	Director	Newaygo County Parks
Dave Wright	Township Supervisor	Big Prairie Township
Rob Zeldenrust	Senior Agronomy Manager Board Chair	North Central Co-op Fremont Area Community Foundation
Matt Zudweg	Muskegon River Fishing Guide	Z Fly Fishing

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The Fremont Area Community Foundation is a public charity and community foundation serving the Newaygo County, Michigan area. The mission of the Community Foundation is to improve the quality of life in Newaygo County. Over the course of 2013 and 2014, a research and development process was initiated to determine the best way to support preservation and promotion of natural resources while maintaining the community's rural character and natural beauty. The Community Foundation believes it is vital to promote Newaygo County's wealth of unique natural resources to current residents and visitors while also preserving them for future generations.

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Illinois State University

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Executive Summary

How can Newaygo County meet the challenge of balancing preservation and promotion of natural resources? This is the central question addressed in this report. Based on in-depth interviews of key stakeholders in Newaygo County and West Michigan, recommendations are provided for both promotion and preservation of natural resources. Many of the questions posed to interviewees were based on peer-reviewed journal articles in the natural resource management (NRM) literature. NRM often presents a dilemma between conservationists and developers. Attaining a balance between exploitation and protection of resources, however, is a must if the county is to achieve sustainable development objectives.

NRM involves a multitude of levels and interests. Options for sustainable management must involve all stakeholders and balance levels of decision-makers, whether local, regional, or national. No one-size-fits-all approach applies to NRM; instead, co-management of resources and multi-stakeholder collaborations assist in achieving sustainable solutions, given the multiple interest groups involved in the commons. Through good governance, flexibility to change, and community engagement efforts, NRM has a better chance for success and sustainability.

Clearly, natural resources cross governmental boundaries and jurisdictions, and NRM strategies must compensate for this dynamic. The region of West Michigan contains a wealth of natural resources, from rivers and lakes to farmland and forests. Taking advantage of these resources through agriculture and tourism value chains may spur economic development while also providing for sustainable management.

Key stakeholders provided specific recommendations for preservation and promotion of natural resources which could fit into philanthropic strategies. They also pointed out Newaygo County's major natural resource assets. Gaining insights about where protection is needed most and where promotion has the greatest potential can help target philanthropic investments.

Newaygo County's natural resources have the potential for improving local livelihoods and raising people out of poverty. Many other foundations and organizations are focused on these crossovers, between environment and economy, and environment and equity. Lessons can be taken for Newaygo County's context in order to achieve triple bottom line impact.

Report Methodology

Funding for this report was provided through a grant from the Fremont Area Community Foundation (FACF). The grant supported a research fellowship through Illinois State University's Stevenson Center for Community and Economic Development. Institutional Review Board (IRB) procedures for research involving human subjects were followed, and IRB approval was obtained.

Previous research on natural resource management (NRM) consists of case studies and in-depth interviews to investigate the dynamics and politics of NRM (Lachapelle, McCool & Patterson, 2003; Smith & McDonough, 2001). Similarly, this report includes semi-structured, in-depth interviews of twenty-seven key stakeholders from Newaygo County and West Michigan (See Appendix A for the interview protocol). Interviews lasted anywhere between 45 minutes and two hours, and interview statements were transcribed. As the researcher, I made an effort to remain accurate and neutral in the transcription and interpretation of statements. Interviewees were provided with consent forms acknowledging the risks and benefits of participation (See Appendix B).

Interviewees were chosen based on their roles in natural resource preservation and promotion. Commercial, economic, conservation, recreation, political, local, regional, national, and international interests, among others, affect NRM in Newaygo County. Selecting representatives from local, state, and national agencies, non-governmental organizations, nonprofits, as well as the corporate, agriculture, and tourism sectors, provided breadth and depth of knowledge across a wide range of natural resource issues and interests.

This research will impact the communities in Newaygo County, Michigan by informing philanthropic strategies. The findings of the study will be presented to FACF board of trustees, and future grantmaking will benefit from the knowledge gained through interviews and analysis of relevant literature. Strategies for balancing preservation and promotion of natural resources in the midst of uncertain ecological times and often conflicting social-ecological relationships may help sustain the County's and region's wealth of natural resources into the future.

Hazardous waste removal, depletion of fish stocks, deforestation, agricultural chemical runoff, urban sprawl, and water contamination are several of many complex environmental issues in Newaygo County. Combining knowledge from the literature and a multitude of key stakeholders in the community will contribute towards innovative and sustainable conservation solutions. Given the close connection between the environment, economy, and society, this paper will also provide analyses and recommendations for rural sustainable development.

Author's Note

In a study abroad trip to Ecuador, I encountered something I had never experienced before, a world of zero waste, or almost zero. On a visit to a sustainable farm in the Andes Mountains, I witnessed how humans and nature were perhaps originally meant to live. Our food came from the plants and animals on the property, the climate was nearly perfect, water was sustainably collected and reused, shade-grown coffee comingled with a diversity of fruit trees and an incredible variety of orchids. Everything was reused, even the human waste was composted through a natural process. Products like bags and crafts were made from sustainably harvested plants. A diversity of crops intermingled throughout the farm, and rendered it immune from many of the diseases typical of monocultures. And only organic fertilizers were applied, such as those derived from animal manure. Needless to say, this experience made quite an impact – especially given the “throw-away” and disposable cultural mindset I was accustomed to back in the U.S. These experiences challenged me to have a more sustainable mindset: What if we took more lessons from nature? What if we stepped back from our materialistic lifestyle for a moment to take stock of our surroundings? Might we care more for both the natural and built environments around us? Could we achieve a better harmony between humans and nature? Truly engaging with the natural environment may enable us to make more of a connection between the built and the natural landscapes around us. This report represents a step towards achieving a development balance between preservation and promotion of resources in Newaygo County, Michigan, a balance that maximizes benefits for both humans and the environment over the long-term.





Newaygo County, Michigan

1 Introduction

Newaygo County is situated in beautiful West Michigan and boasts 234 inland lakes and 356 miles of rivers and streams (Water, 2014). Recreational activities on public lands, rivers, and lakes are popular and draw visitors from the nearby city of Grand Rapids and the surrounding region. The rivers are world-renown for fishing and attract international tourists. Hunting, fishing, camping, kayaking, boating, snowmobiling, and hiking are several of many options for recreation in the county. The North Country Trail, a national scenic trail, cuts through the center of the county.

Due to its vast forest areas, the county was originally known for the lumber industry. The ease of transporting logs via rivers to Lake Michigan and down to Chicago created a boom of employment and new settlements in the 1800s. Unfortunately, logging soon depleted the region's forests and devastated the riverbanks. The forests have since recovered, aided by the

establishment of the Manistee National Forest; national forests now cover approximately 20 percent of total land area in the county.

Following the decline in logging, settlers made failed attempts to farm the sandy soils in the northern half of the county. The southern half of the county, however, with its rich soils, allowed development of diverse agriculture, including orchards, vegetables, grains, and livestock. In fact, West Michigan as a region is second only to California in its diversity of agricultural products. The famous Gerber Baby Food (now owned by Nestlé) originated in the city of Fremont and benefited from the proximity of rich farmland.

Capitalizing on natural resources is important for economic development in Newaygo County. FAFAC aims to both promote resources and preserve them. Enhancing access to resources while also establishing conservation measures often represents a fragile balance. Natural resource management (NRM) strategies which include the community and recognize this balance may foster sustainable solutions going forward.

1.1 Community-Based Natural Resource Management

How can Newaygo County achieve sustainable and successful management of its natural resources? What makes community-based NRM effective or ineffective? There is often a tension between the promotion and preservation of resources. Investigating the impact of community-based efforts to attain a balance between exploiting and conserving resources may help guide NRM strategies.

Community-based natural resource management programs are based on the premises that local populations have a greater interest in the sustainable use of resources than does the state or distant corporate managers; that local communities are more cognizant of the intricacies of local ecological processes and practices; and that they are more able to effectively manage those resources through local or “traditional” forms of access. (Brosius, 1998, p. 3)

The assumptions of this definition, however, have received criticism. According to Agrawal & Gibson (1999), only through a deeper understanding of the dynamics of the various actors and interests within communities, will renewable resource strategies be adopted and sustained. Researchers have over-simplified the local community, and retain too much of an idealized, homogenous, and nature-harmonious view. Rather than assume a decentralized, collaborative, and community-based strategy is best for resource management, one must take into consideration the multitude of interests, stakeholders, conflicting values, and myriad of other problems that can pose barriers at the local level (Agrawal & Gibson, 1999).

1.2 What Defines Success?

Successful NRM is sustainable, equitable, and balances both preservation and promotion. It must take into account both conservation and livelihoods (Larson & Ribot, 2004), protection

and economic development. Engaging the public (McCool & Guthrie, 2001) and giving local populations input in decision-making regarding their natural resources promotes outcomes that are equitable and accountable. Building capacity (Davenport & Seekamp, 2013; Raymond & Cleary, 2013), resilience (Cosens, 2013; Garmestani & Benson, 2013; Plummer, Armitage, & Loe, 2013; Stokols, Lejano, & Hipp, 2013), and adaptation and collaboration (Monroe, Plate, & Oxarart, 2013; Plummer et al., 2012; Singleton, 2000) into communities' natural resource strategies will ensure flexibility amidst uncertain social-ecological circumstances.

Further, according to Lachapelle, McCool, & Patterson (2003), several barriers prevent successful natural resource planning: (1) inadequate goal definition, (2) lack of trust, (3) procedural obligations, (4) inflexibility, and (5) institutional design. They advocate for a more political and less scientific planning process. An overemphasis on procedure sabotages creativity. Perceptions and values pertaining to natural resources constantly change, societies and people change, and the planning process could better reflect community-based rather than scientific goals. In the past, a top-down, technocratic, scientific process dominated NRM, and many current projects still reflect this bureaucratic style of planning. Successful planning, however, will involve flexibility, innovation, clear goals, and an institutional design that draws from an engaged public rather than special interests (Lachapelle, McCool, & Patterson, 2003).

Like Lachapelle, McCool, & Patterson's (2003) emphasis on flexibility in planning, Armitage (2005) links successful management to the ability to adapt to changing circumstances. Armitage acknowledges the contradiction inherent in the management debate, namely, the tension between preservation and promotion. Social adaptation (involving economic promotion of natural resources) requires innovation and learning amidst uncertainty with the goal of reaching capacity. Ecological adaptation (involving conservation), on the other hand, necessitates a slow-moving process with the goal of stability.

2 Sustaining Newaygo County's Natural Resources

Good governance, regular community engagement, flexibility in NRM, and a focus on pragmatism may provide the framework for sustainable resource use in Newaygo County. Governance is important for managing the "commons" and community involvement fosters community ownership. The nature of changing landscapes necessitates flexibility in NRM procedures and guidelines. Additionally, taking a practical approach to NRM involves analyzing what changes have occurred and how communities can prevent or adapt to them.

The following analysis begins with Newaygo County's advantages and challenges; it then outlines governance, community engagement, and flexibility in NRM through the lens of recent literature and key stakeholder interviews. Based on these analyses and observations, the report then details applicable rural development implications. Also included is an analysis of best practices from other foundations and organizations addressing similar issues. The paper concludes with recommendations for strategic natural resource focus areas and investments.

2.1 Newaygo County Advantages

According to key natural resource stakeholders, Newaygo County has many advantages. Natural resource assets like rivers and forests enable recreational opportunities, and proximity to Grand Rapids provides corresponding access to an expanding market of recreational users. Agricultural land in the southern half the county is diverse, giving the county an upper hand economically. With Gerber Products nearby, a market has grown for processing this wealth of agricultural products.

Newaygo County's large amount of natural and rural land gives it an advantage in terms of conservation. The county has avoided large amounts of development, which means it has also avoided the often negative environmental impacts of growth. Notably, there is a positive attitude towards preservation in the county. In general, people want to leave the environment a better place for future generations. This thought pattern has led to actions such as farmland preservation and watershed restoration activities.

Another advantage is the small size of government. According to key stakeholders, the county's small government renders it more efficient, and leadership at the county level is well-placed. There is also a spirit of collaboration, with several joint commissions, multi-jurisdictional planning, and the presence of FACF. Indeed, FACF is uniquely positioned in the county to facilitate dialogue and convene diverse stakeholders. The significant financial resources of FACF relative to the population in the county also represent a comparative advantage.

2.2 Natural Resource Challenges

Of course, the county also has its share of natural resource challenges. Supply of fresh water, for instance, was frequently mentioned during key stakeholder interviews. Demand on water supplies continues to increase. Manufacturing use and agricultural irrigation draw large amounts of water from the ground, but the question remains of how much the water table can sustain. Contamination of water supplies is a related issue. Agricultural chemical/nutrient runoff, residential septic leakage (especially around lakes), manufacturing waste water, and general non-point source pollution into groundwater supplies were all indicated as water resource challenges in Newaygo County.

Achieving a balance between protection and exploitation of resources represents an increasingly complex challenge. Development has both positive and negative implications for the county. On the one hand, the county needs development in order to gain access to its natural features, promote the resources, and enhance the tourism sector. Manufacturing and agriculture, both economic advantages in the county, also require significant development activity. The development of resources, however, must also involve sustainability considerations. There are diverse interests groups in the county, some which lean more towards development, others that value conservation more highly. Development projects, therefore, often cause divisions and conflicts between environmentalists and developers.

Either extreme would prove detrimental to the county. On the conservation or environmental extreme, no development would happen, and there would be a lack of built amenities to complement the natural amenities – resulting in lack of access and underutilization. On the other extreme, too much development is all too often associated with environmental degradation. Overdevelopment can cause all kinds of problems, and the resources which were originally intended to provide sustained economic development could be exploited to the point of no return.

Population size also presents a trade-off challenge. A low population level is advantageous for conservation, as the negative consequences of development are avoided – such as sprawl, wildlife loss, water runoff, infrastructure challenges, etc. Yet, low population also results in a lack of capacity and funding for the natural resource challenges which the county *does* face. Key stakeholders noted a lack of partnerships and few funding sources as resulting challenges. Labor is also a challenge from low population levels; in order to sustain the agricultural industry, for example, the county must be able to attract enough employment.

Lastly, the park systems noted stresses in terms of management. Increasing demand for recreational activities from across the region creates pollution challenges in rivers, overfishing, and conflicts. Different user groups - equestrians and mountain bikers, for instance – often compete for the same resources. Kayakers, tubers, boaters, riparian home owners, and fishermen use the same rivers. These and other diverse user groups and landowners have different goals and objectives for the resources. Thus, the county's wealth of public lands and resources necessitate funding mechanisms for sustainable management.

3 Governance

Effective governance over natural resources represents one way Newaygo County can tackle these challenges. Clement (2009) analyzes governance through an institutional analysis and development (IAD) framework. His framework covers multiple governance levels in order to capture more accurately the complexity of collective management of resources. Within the IAD framework, there are three levels of analysis: constitutional and collective-choice (in which people decide on the rules), and operational (in which people make decisions); and three variables: society, nature, and the rules that govern society and nature. Clement adds two variables, politico-economic context and discourses (the practices/concepts that shape norms/values/beliefs). Too often in NRM, not enough consideration is given to the political and social context. Rules that govern natural resources must be informed by an emphasis on context, discourse, and multi-level power dynamics.

Understanding power dynamics is important for cooperation in NRM. In her case study of salmon over-fishing in the Pacific Northwest, Singleton (2000) finds that attaining a balance between community and state control in co-management of resources may avoid the “capture” of the state agency by local special interests. Local communities have a comparative advantage because they respond faster to changing circumstances, are more knowledgeable of local resources, and provide a cost-effective means of enforcement. States also have a comparative

advantage in access to data and financial resources, as well as control over external actors and trans-boundary issues (Singleton, 2000). Thus, the answer to sustainable resource management may lie in finding a balance of co-operation/co-management between local and state.

Co-operation schemes and incorporating politico-economic context into NRM are good governance measures, among others, which may help avoid conflicts further down the road. As limited resources become even more scarce, overuse or misuse could lead to further depletion or irreversible damage. In the case above, salmon overfishing led to a stalemate between the tribes and commercial fisherman. Instead of coming to a mutually beneficial management protocol, for many years the issue languished in the courts. Going through the court system was time-consuming and not cost effective for either party (Singleton, 2000).

In another example more local, in 2006 Nestlé's Ice Mountain water bottling operation began exploring water withdrawal in the upper White River Watershed (in the northeast portion of Newaygo County). The White River is classified as a Natural River and covered by the Michigan Natural River Act, dating back to 1970. This designation established stricter rules for use. Studies showed that the operation would lower the water levels downstream, and citizens began to speak out. Through local town hall meetings, citizens expressed their contention over the potential withdrawal, whereas Nestlé insisted it would do no damage. Ultimately, Nestlé pulled out of the area. Community involvement, including the participation and official position statement from the White River Watershed Partnership, significantly impacted the management of the resource.

Key stakeholders were asked about power dynamics, specifically, how to avoid capture by special interests. Stakeholders then responded to questions of how to promote accountability in NRM and governing institutions. Given the multiple levels involved with NRM, options for how to achieve co-operation or co-management of resources were discussed. Lastly, stakeholders commented on how history, values and, beliefs impact NRM in the county.

3.1 Special Interest Groups

Diverse natural resource interest groups are present in the county, from farmers, foresters and manufacturers to watershed conservationists and public lands management agencies. According to key stakeholders, avoiding the situation in which one group gains too much power over others involves an array of governance actions. The following characteristics and measures help avoid capture by special interests in NRM: a collaborative environment, clear goals communicated up front, efforts to increase public awareness, balanced governing boards, participatory public meetings, surveys to weigh diverse needs, keeping a broad amount of people engaged, inclusive planning processes, strong leadership, and effective communication.

In addition to these measures, key stakeholders specifically noted the following (paraphrased):

- Township regulations and zoning, county permitting, and state and federal laws regulate planning, management, and natural resource use
- Controlling contributions to natural resource projects or initiatives could avoid a winner-takes-all system
- Keeping money local may provide a measure of protection from negative external forces
- Recognizing the need to support smaller actors and businesses – those with fewer resources – will ensure a more level business environment

According to interviews, avoiding capture by special interest groups necessitates knowledgeable decision-makers. The right knowledge at the right time contributes to a process in which no one group holds too much power. One way to facilitate accurate information exchange is through cross-jurisdictional planning. Joint planning commissions keep local governments and agencies informed and aware of multiple stakeholder needs. For natural resource issues, basing decisions on timely information and sound science also decreases the chance that decisions will be made on emotion. Obtaining solid information can help engage skeptics and build consensus early on in planning, further increasing understanding and responsiveness to a diversity of needs.

3.2 Accountability and Trust

Similarly, according to key stakeholders, in order to promote accountability, the public process must be facilitated by knowledgeable leaders. Establishing fair elections and making sure voters are well-informed can ensure good leaders and public officials. Moreover, establishing best practices, including conflict of interest policies, provide mechanisms for checks and balances and procedures for an open and accountable system.

Open lines of communication, checks and balances, and community involvement facilitate accountability in NRM. Openness and transparency in decision-making processes avoid corruption in the agencies with control over natural resources. Transparency, among other things, involves knowing who funds and influences natural resource positions.

Throughout interviews, one of the overriding themes regarding fairness and trust in NRM was the principle of following through. Following through and doing what you say proves you are trustworthy. It is important to share the success stories and educate the public on how natural resource enhancements were accomplished. One interviewee noted it is also important to share the failures and build on lessons learned.

A multi-stakeholder approach to meetings further promotes accountability. Key stakeholders made the following comments regarding this approach (paraphrased):

- Community involvement characterized by a collaborative environment, in which every stakeholder has the opportunity to provide input, fosters understanding of different points of view

- Successful public involvement means obtaining ideas, input, and support, as well as sharing responsibility on natural resource decision-making, projects, and planning
- Identifying interested parties and conducting due diligence up front will help prevent conflicts further along in projects
- Maintaining solid guidelines, clear goals, and timelines leads to realistic expectations
- Goals must include good metrics – measures that are understandable and consistent over time
- Setting standards, being transparent, and intentionally listening to the public builds trust

3.3 Cooperation

The County Parks Director, Ron Welton, commented on a multi-stakeholder project in its planning stage (paraphrased):

The proposed Hardy Pond trail is an ongoing project. Consumer's Energy is the sole owner of the property, but has leased out certain portions for camping, boat docks, or other uses over the years. In planning for a loop pathway around the property, the planning team has met some resistance from existing users. Also, there are a multitude of stakeholders with often conflicting interests and agendas in this non-motorized trail concept. Bikers (road bike cyclists) want a hard surface, mountain bikers desire a narrow and natural trail, walkers need width, and cross-country skiers, depending on the type of skiing, need either narrow or wide. Additionally, at the federal level, the Department of Energy is worried about degradation of the resource. Allowing more use, for example, may speed erosion. According to Welton, however, introducing *organization* to the recreation area in the form of a pathway may enhance and stabilize the resource. More users will likely mean increased accountability. Everyone carries a phone and can report problems. It is then the challenge of managers to address issues and build capacity to respond. Overall, the Hardy Pond trail has the potential to draw a significant amount of people.

This potential project shows how many stakeholders, interests, and levels of authority can be involved. Given such diverse groups in NRM, what is the best co-operation or co-management strategy between them? According to key stakeholders, representing all stakeholders in the planning process and establishing common goals will increase cooperation. Stakeholders also advised to find the central principle or common denominator and recognize a give-and-take dynamic.

NRM often involves working across multiple, local, state, and federal jurisdictions and agencies. The following brief examples from interviews highlight this multi-level dynamic:

- The White River Watershed is governed by the State of Michigan's Natural Rivers Act. This establishes a common standard across multiple regions and jurisdictions. The Townships can defer to the state for enforcement, or they can establish their own ordinances which are *as stringent as* or more stringent than state requirements.

- Nestlé/Gerber Products collaborated with the Michigan Department of Environmental Quality, Michigan Department of Agriculture, and other food processors on a waste water discharge study. Permits were then issued or renewed based on the results of the study.
- The Muskegon River Watershed Assembly intentionally involves lake associations, communities, and local governments when initiating clean-up projects. Local organizations are known and well-trusted in the community, and can champion projects through effective communication and community ownership.
- One key stakeholder emphasized the county and state level for cooperation. At these levels, there is a more comprehensive perspective combined with the ability to leverage more resources.
- Highlighting the advantage of local government, according to one area farmer, local, joint planning commissions foster good relationships between townships and cities. This enables an environment of collaboration, fairness, and equal representation when deciding on zoning ordinances.
- On the other hand, according to another stakeholder, Michigan has retained a structure where a multitude of townships fend for control and complicate multi-jurisdictional efforts. Duplication of services is a resulting problem. Unfortunately, there is a lot of antagonism between different levels of government, but this can be overcome through trust – and trust is established through collaboration.

Given the multitude of levels and interests involved in NRM, creating incentives to collaborate and partner helps achieve shared goals: Nestlé/Gerber Products sets a high internal standard for its products, and its sustainability requirements for agricultural production and pesticide use get passed down the supply chain; the U.S. Forest Service’s Community Block Grant Program gives community members responsibility for how to use the money; the Michigan Department of Natural Resources Trust Fund requires a 25 percent match from grantees; and the U.S. Natural Resource Conservation Service pays farmers to employ certain conservation measures. These are a few examples from key stakeholders about how to accomplish shared objectives. Obtaining cooperation from multiple groups, in whatever form – time, skill, knowledge, or money, will provide the capacity to tackle complex NRM issues and provide equitable solutions.

3.4 History, Values, and Beliefs

Most stakeholders affirmed history as important for NRM. Lessons can be taken from history to avoid repeating past mistakes – logging and the resulting depletion of forests and erosion of rivers, for example. (It was noted that the county’s and region’s freshwater resources may represent the next threat in terms of overexploitation.) Due to West Michigan’s land-based economy, it has been dependent on extractive industries. One stakeholder emphasized

manufacturing and agriculture as past extractive industries which will also define the future. Another stakeholder, however, saw a change from a production-focused past to a knowledge-focused future.

History is intricately tied to values and beliefs. The region has a conservative history and Dutch heritage. As the county is largely Christian, according to one stakeholder, the prevailing view of natural resources is they are commodities to use rather than treasures to protect. This ties into how, according to another stakeholder, the prior generation(s) were those of “endless supply;” they were the “landfill generation.” Some people still believe natural resources are there for the taking instead of for the public trust. In fact, one stakeholder added that tourists from outside the county oftentimes valued the resources more than residents themselves. Yet, stakeholders also noted a positive stewardship attitude towards the resources, indicating, overall, the views of residents are changing with increased value for conservation. Clearly, history, values, and beliefs significantly influence the balance between preservation and promotion of resources.

4 Community Engagement

Involving the public in NRM decision-making may help clarify the different impacts of those decisions on prevailing values and incentives. Different meaning is assigned to different landscapes by different people. According to one study, for example, if public participation meetings resulted in ecological education and heightened understanding of ecological processes then there was a consensus of success (McCool & Guthrie, 2001).

Trust is essential for community engagement: Smith & McDonough (2001) emphasize trust as important in natural resource decision-making. They conduct a study in the Northern Lower Michigan Ecosystem Management Project on the public’s perception of fairness in natural resource planning. Whether someone feels he or she has been treated fairly is one of the most important factors in measuring level of trust. Given trust is key to respecting the decision-making of authority, they conclude that focusing on fairness may very well help avoid natural resource-related conflicts. Stakeholder opinions on trust, shared interests, effective communication, and the importance of relational networks for community engagement efforts in NRM are summarized below:

4.1 Trust and Shared Interests

Key stakeholders commented regarding trust, shared interests, and community engagement in NRM (paraphrased):

- People often lack trust in government, so making collaborative efforts known to the public is important. This is done through publishing events and making known what is happening through newspaper and newsletter mailings. Community is about accountability.

- Community is key to establishing trust, and people must work together. Having good communication, being open to ideas, looking at others' points of view, and finding common ground are all important for establishing trust.
- Trust is earned, and earned incrementally. It takes a long time to build it, and it could take a very short time to lose it. Turnover is difficult and disconcerting, as it results in the loss of continuity.
- Small towns are easier for this [trust], because everyone knows each other. People can be involved and heard because of the small size of the town/city. In terms of shared interests, people like open space.

Engaging the public and partnering with multiple stakeholders establishes trust between natural resource institutions and actors. The White River Watershed works with municipalities, private landowners, and, given the river runs through the Manistee National Forest, also works closely with the U.S. Forest Service and U.S. Fish and Wildlife Service. Nestlé/Gerber Products works with local schools, offering tours of its waste water treatment facility to high school biology classes – showing the importance of sustainably managing water resources.

Nestlé also partners with local schools in providing the Land Lab Project. In this project, students produce a crop to Nestlé specifications, exposing them to the agricultural and food processing sectors. The Nature Conservancy (TNC) holds demonstration projects in the field. Recruiting volunteers to help eliminate invasive species on preserves spreads knowledge and techniques about resource management, and also promotes TNC projects. Additionally, according to multiple stakeholders, FAF is well-positioned in the community to establish trust and communicate shared interests. As a neutral convener, FAF can facilitate problem-solving in unique ways.

4.2 Communication and Relational Networks

NRM agencies get the word out through a variety of channels. Social media is increasingly the most effective way to communicate ongoing projects, events, and meetings. Depending on the type of agency or communication, some stakeholders also emphasized in-person connections, personal accessibility, and visibility through membership in community organizations. One representative from the township level highlighted the small size of the community as an advantage in making personal connections.

Additionally, according to another stakeholder, the following communication techniques facilitate successful NRM: be intentional about staying informed, take opportunities to share your work in accurate ways, acknowledge different points of view, avoid a confrontational tone, and admit you don't have all the answers. Overall, be willing to engage in conversation with those different from you. Multiple stakeholders also acknowledged the importance of matching your message to your audience.

Relational networks are essential to the work of most natural resource stakeholders. Watershed organizations reach out to property owners; Nestlé networks with regulators and community organizations; Farmers network with Michigan State University (MSU) Extension on food safety, productivity, crop varieties, and labor force needs; and Muskegon River fishing guides have an association and network on a daily basis about issues and best practices while out on the river.

According to Ryan Coffey/MSU Extension Land-Use Educator, networking is essential to NRM work (paraphrased):

Relational networks are critical for success and fundamental to NRM. There are dynamic and multi-faceted issues with natural resources, and you can't get things done on your own. When a new project comes up, it's essential to identify the stakeholders and include them. Networking is a constant, ongoing process, and, fortunately, it is already ingrained in the culture of the county.

Relational networks provide a means to communicate vision for projects, support natural resources, inform elected officials, and develop new donor relationships – including attracting state and federal money. Many natural resource agencies are public and owe it to the community to stay engaged and connected. Moreover, as a region, the counties within West Michigan are interdependent, and networking enhances things like sharing a workforce and managing many cross-boundary natural resources.

4.3 Education

What is the best way to educate the public about natural resources? As stated earlier, social media is increasingly an effective means of communicating natural resource news and projects. Matching the communication method appropriately to the audience renders it more effective. Too often, scientists are overly technical when communicating their findings. Translating messages about complex scientific phenomena like climate change into understandable metrics may help people absorb the reality. Educational seminars and engaged forums hosted by universities can help dispel fears and increase awareness about the triple bottom line.

Experiential learning is a particularly effective way of educating the public. The Annis Water Resources Institute (AWRI) of Grand Valley State University has several boats to offer tours and spread knowledge about the importance of protecting the Great Lakes. In Newaygo County, hands-on Ag science programs in high school and college, and the Ag County Fair are experiential ways for people to learn. On-site tours of natural resource entities like the Conservation District's tree nursery or the Kropscott Environmental Center are also accessible options in the county.

5 Flexibility

With stakeholders as diverse as farmers, anglers, outfitters, water bottlers, municipalities, industries, planners, elected officials, and nearby residents – as in the case of Monroe, Plate, & Oxarart’s (2013) study, flexibility is essential. Indeed, according to Singleton (2000), co-management of natural resources can only be successful if there is flexibility in governance and decision-making (p. 8).

In her case study of salmon over-fishing in the Pacific Northwest, Singleton (2000) attempts to address the question of how to manage resources most effectively in the midst of uncertainty, multiple stakeholders and institutions, and incentives. Scientific uncertainty often presents a barrier, as managers and users frequently have different perceptions. Singleton (2000) finds that while co-management between state and local actors comes short of guaranteeing sustainable management of resources, it creates an opportunity for new forms of collaboration. She cautions that co-management often continues conflicts rather than resolves them, albeit through different forms and institutions. Nevertheless, Singleton (2000) concludes that co-management increases chances for success.

Further, a shift towards a flexible model in which local communities provide NRM requires a level of decentralization. True decentralization, however, faces many obstacles, including the confusion of decentralization with privatization. Often, efforts are made to obtain citizen or local participation, but the decision-making power remains with bosses or donors elsewhere. Indeed, many governments simply use local administrators for the benefit of local knowledge and proximity to resources without truly delegating decision-making power—a situation Larson & Ribot (2004) coin *deconcentration*. For the decentralization experiment to move forward, people must engage in public dialogue, adopt institutional accountability mechanisms, promote education and research, and mobilize locally, among other factors (Larson & Ribot, 2004).

The theme of flexibility in NRM applies throughout the previously outlined sections on governance and community engagement. It is clear governance arrangements must change and adapt to the times, and new ways of engaging the public necessitate flexibility. This next section expands on flexibility in terms of the following: decentralization, the effects of external forces on NRM, scientific uncertainty, community preparedness, procedure, and creativity in NRM.

5.1 Decentralization

Some stakeholders emphasized the need for a decentralized system, others for centralized NRM; still others highlighted a balance between both. The following points were made about the advantages of decentralized and centralized systems, respectively:

Decentralized

- Increases collaboration and sincerity/commitment/follow-through from stakeholders
- Avoids a one-size-fits-all approach
- Increases reaction time for issues, problems, or events

- More knowledge of mitigating factors
- Better control, more knowledge
- More understanding of the resources
- Improves implementation, avoids micromanagement

Centralized

- More financial resources, greater ability to manage the commons
- Local governments are often inconsistent
- Natural resources cross governmental boundaries
- Better at establishing general policies
- Local units often have less technical knowledge
- Draw from multiple resources
- More efficient
- A central authority acts as a guide to set goals and policies

Many stakeholders acknowledged the advantages of both decentralized and centralized NRM, indicating it may not be as much of an *either/or* as a *balance* between the two. One stakeholder emphasized the need for sound policy that recognizes and balances competing needs. Another stakeholder expressed the need for bigger picture guidance, but also the need for freedom to fill in the details and adjust to the Newaygo County context. Chris May of the Nature Conservancy (TNC) notes this balance (paraphrased):

NRM requires a tiered approach. The vision must be provided by a central overarching committee or group. Then, there are multiple ways of implementation that can be delegated out. Different land requires different kinds of implementation, and different groups have different resources. For example, a township may have a piece of heavy equipment that can remove invasives [plants]; whereas the TNC more often employs volunteers to remove invasives by hand. With this structure or perspective, you can achieve the same goals without micromanaging the process.

5.2 External Forces

Key stakeholder responses to the question of what external forces affect NRM were tallied:

Figure 1

External Forces	
Weather/Climate Change	### IIII
Laws/Regulations	### IIII
Politics/Bureaucracy/ Government	### III
Money/Funding/Economy	### II
Interest Groups	### II

Diverse external forces affect NRM, including state and federal regulations, zoning laws, different agency needs and priorities, the public interest, availability of funding, weather, climate change, the economy, politics, money and many competing groups and interests. Human impact on the environment or community resistance to NRM, as well as lack of knowledge or understanding of resources can represent negative externalities. Depending on the situation, flexibility in NRM, therefore, may be enhanced or restricted based on funding levels, budgets, interest groups, the overall economy, or weather events, among many other factors.

5.3 Scientific Uncertainty

According to key stakeholders, everyone wants to base their decisions on sound science, but scientists and researchers are not neutral either. Different groups produce scientific reports to back their respective positions. That said, there is a general consensus among scientists regarding certain issues – climate change, for example. It is known that human impact in terms of carbon emissions has a warming effect on the atmosphere, and there is data about the increase in the frequency of extreme weather events. Questions remain, however, regarding the future impact of climate change and what actions should be taken.

Scientific uncertainty affects many natural resource activities. Farming involves research and innovation for new crop varieties, and conservation agencies face risks and research challenges regarding how to control invasive species – zebra mussels and Asian carp in the Great Lakes, for instance. There are many unknowns, and science is at times unpredictable.

Several stakeholders pointed out adaptive management as a response to scientific uncertainty. Adaptive management involves incremental changes over time to adjust to new conditions. It is a cyclical process of constant monitoring, changing, and re-evaluating. Additionally, according to stakeholders, increasing emphasis on science in the education systems may also reduce uncertainty as a barrier to NRM.

5.4 Community Preparedness

Is Newaygo County prepared for changing ecological conditions? How would Newaygo respond if there were more frequent extreme weather events? In the context of changing climate and unpredictable weather, key stakeholders discussed Newaygo County's level of preparation (paraphrased):

Prepared

- Yes, the community is sufficiently prepared. For example, with the heavy snow and power outages [in Winter 2013/2014], Fremont did well.
- For storms or other natural disasters, the county's emergency services director has plans in place, in close collaboration with the fire department.

- A flooding event happened in Spring 2013, and recovery went well. The infrastructure only had minor issues. Several roads were washed out in spots, and there was some damage to repair.
- Newaygo County is prepared well: all the [NRM] parties show great pride for preserving the resources; they promote the resources but still value the preservation; there is great support across the board. For example, on the issue of high water/erosion in Spring 2013 and also for Spring 2014, the community prepared well in advance to ensure safety.
- This is something the Ag community deals with and is familiar with – drought conditions or seasonal wetness, for example. Every year it's something different; forces of nature are unpredictable. It is necessary to establish disaster programs for each type of event.
- For agriculture: irrigation systems, alternating crops, strip-tilling, more research and long-term planning, among other measures, reduces the negative impact of unpredictable weather.
- Weather patterns have always occurred. Climate change has always been going on in one form or another. A drastic change would be difficult to adapt to, such as losing summer or winter, but typically changes are gradual enough that humans as a species learn to adapt well.
- In 1986, there was a major flood in the area, with 15 inches of rain in 3 days, and it was a disaster. People pulled together, the County level emergency management team responded, an evacuation was carried out, and it was a fast response.
- Drought is the biggest extreme that Newaygo County faces. The City of Fremont conducts a water sustainability study and examines how current use of water will affect life in the future – to help predict what the demands of 2025 would be, for example. There is also a well-head protection program for the city's wells. Overall, though, Newaygo County would have to get help from Kent or Muskegon County if there were an environmental disaster.

Not Prepared

- The community is ill-prepared because of human nature, we are a crisis-oriented species; in reality, there are limited resources, and the political will is nearly impossible – we don't think long-term.
- For events such as droughts/floods/hurricanes, we are not prepared, because we live in an "instant" society.
- Due to limited revenue streams and changes associated with climate change (and resulting changes in species, forests, crops, and rivers) people are not going to be prepared.
- Newaygo County is somewhat ill-prepared because of fragmentation of the landscape. Housing and roads are barriers for plants and animals to adapt. They are also a barrier to implementing conservation measures like controlled fire management.
- With the issue of water extraction, the county is not too well-prepared. This is because there is no existing disadvantage to water *overuse*.
- We are not well-prepared, but it's also not easy to prepare. From an Ag perspective, in 2012 the apple/cherry/peach crop was destroyed due to warm weather in March, then

a late frost. These events happen more frequently, yet trees take years to establish. Creating new varieties through breeding, for example, is a 20-year process, particularly in the fruit/agricultural area of West Michigan.

- In terms of the community's general knowledge, we are not well prepared. We need more education in combination with the research and established science. We have the information, and we can predict accurately now how things will look – how the Muskegon River, for example, will look in the future. Yet, we need to do a better job at best management practices, one of which is low impact development. Design to accommodate more high energy storms. For example, don't build in the flood plain, and make sure to establish set-backs for development/buildings.

Interestingly, there are arguments on both sides in terms of Newaygo County's preparedness. The county has vulnerabilities such as lack of capacity, funding, and general understanding or knowledge of preparation in the midst of climate change. Yet, the community has been resilient in the past when faced with natural disasters like flooding events. Managing risks and anticipating future challenges must be a combined effort between scientists, policymakers, and managers. It is then the responsibility of these stakeholders to pass along accurate information to the public. Importantly, the wide range of responses with regards to the county's preparation highlights the need for flexibility in NRM to adapt to new knowledge and new ecological conditions.

5.5 Procedure vs Creativity

Most stakeholders agreed that NRM necessitates not only procedures but also creativity and innovation. Complicated natural resource systems require innovative management practices. Watersheds, for instance, are complex and cover large geographic areas, and water quality is impacted by a myriad of potential pollutants. Conversely, water quality can be improved in a variety of ways – strategic reforestation, for example; certain plants work well for filtering and controlling nutrients, others for preventing erosion and stabilizing banks.

Creativity and innovation keep agencies relevant and flexible amidst change. Vaughn Maatman of the Land Conservancy of West Michigan commented on this principle for land trusts (paraphrased):

Creativity/innovation is a constant. Land trusts are asking the question of what is next. Some land trusts have tended to focus solely on protection from development in the past. Now, they are starting to ask the question of what are we protecting it *for*? This signifies a renewed approach to the commons. There is a new focus on activity, public access, and how to engage people in conservation for the land.

In agriculture and manufacturing, innovation and creativity are also at the forefront. Research, engineering, and multiple implementation methods allow for and benefit from creativity and innovation. Driving improvements means being flexible to new methods. New technologies, for

instance, include new irrigation methods which reduce water use, and new fertilizer applications which maximize the productivity of inputs and minimize or eliminate waste.

Stakeholders also acknowledged process and procedure in NRM. Safe and efficient food production and water conservation, for example, necessitate procedures. Following a protocol is appropriate for management plans in which regimented steps must be followed. Plans, guidelines, and rules in NRM can allow for creativity and innovation within a structured process. In fact, procedures often enable implementation of new innovations.

As demonstrated in the previous sections, good governance, community engagement, and flexibility have the potential to render NRM more successful and sustainable. Balancing preservation with promotion of natural resources requires multiple planning actions, including devolving decision-making to those with the best knowledge, intentionally involving multiple stakeholders, acknowledging diverse interests, remaining flexible to change and innovation, and maintaining a willingness to be in a constant learning process.

Managing demand on resources to allow for growth while protecting them from adverse environmental impacts so as to foster sustainability in the long-term – this is what effective NRM is all about. In the next section, the focus will shift to development and the economics of sustainable growth. Central to this analysis is a consideration for equity in natural resource investments.

6 Development Implications

6.1 Rural Economic Transition

There is a general consensus in the rural development literature that past natural resource strategies will not work in current conditions. Globalization and international competition have driven commodity prices down and transformed the playing field for rural communities (Kim et al., 2005; Markeson & Deller, 2012; Stauber, 2001). Traditional manufacturing and extractive industry strategies are not the way of the future; instead, these sectors will evolve into new high-tech and more efficient forms (Galston & Baehler, 1995). Dependence on subsidies and protection from the federal government also represent unsustainable strategies. According to Dabson (2011),

There has been a shift in thinking, if not necessarily in implementation, from a top-down, subsidy-based strategy to reduce rural disparities to a broader range of policies to improve regional competitiveness, which include a focus on factors that affect the performance of local firms, on local assets and knowledge, and on collaborative working across levels of government and sectors. (p. 6)

For rural areas, traditional natural resource strategies focused on extraction – mining, forestry, and fishing – have given way to recreation, tourism, and retirement development opportunities. Over the past several decades, the rural counties which have weathered the

economic changes are those with *unique* manufacturing advantages (Galston & Baehler, 1995), urban periphery location (Galston & Baehler, 1995; Stauber, 2001), retirement development potential, and significant natural resource amenities (Galston, 1992; Galston & Baehler, 1995; Green, 2001). Gartner (2004) adds that tourism was a survival strategy for rural communities during the 70s and 80s (p. 6). Fortunately, Newaygo County has been blessed with many of these advantages: proximity to Grand Rapids, investment in food processing manufacturing technology and innovation, significant natural resource assets, and an expanding demand for retirement development and second homes.

6.2 Development and Newaygo County

Newaygo County's unique comparative advantage in manufacturing, agriculture, retirement/second home development and proximity to urban markets has enabled it to survive downturns. Newaygo's diverse agriculture and history of manufacturing has made it resilient in the face of international competition and global trends forcing many other U.S. rural counties away from these sectors.

Indeed, in spite of the overall trend away from resource extraction, agriculture is still a major economic driver in the county. According to Newaygo County Technology and Innovation in Agriculture (TIFA) group,

For Newaygo County, and many of the rural counties throughout the state, agriculture is a key industry. Agriculture is the biggest industry in Newaygo County. Annually, Newaygo County farms produce over \$100 million in sales, nearly three times the rate of the state on a per capita basis. In addition, the County's single largest employer, Nestlé/Gerber, is engaged in agricultural food processing and it is estimated that well over 20 percent of Newaygo County's direct economic output is tied to agriculture. Employment in the agriculture sector is approximately five times as great in Newaygo County as compared to the State of Michigan and the indirect impact of the dollars circulating through the economy raises the percentage even higher. (Schneider, 2014)

A long-established relationship between local farmers and the largest food processor in the area – Nestlé Gerber Products – further enhances the economic potential of agriculture. To be sure, keeping Gerber in the area has been one of the chief aims of the local economic development council. This is in spite of an overall trend away from development strategies that simply entice and incentivize businesses to locate in certain areas – a strategy which has increasingly proven unsustainable given the transience of certain industries, especially manufacturing.

Newaygo County is therefore unique, in that Gerber has remained in the county despite multiple corporate takeovers, globalization, and international competition. Nevertheless, in order to remain relevant going forward, it would be wise to diversify, encourage value-added products, capitalize on the wealth of knowledge surrounding food processing, invest in technology and spin-off businesses from Gerber, and expand access to markets in nearby Grand



Rapids. Diversification is an elusive goal in rural development, yet essential for long-term sustainability. In fact, one philanthropic leader noted that West Michigan suffered much less than East Michigan during the manufacturing and automotive downturn because of its diversification efforts.

6.3 Amenities

New concepts have emerged regarding how to boost development in historically suffering rural counties. The knowledge economy, the talent sector, placemaking, innovation and entrepreneurship – all of these are buzzwords in the current rural development literature. Although difficult to define, these terms essentially translate to the following: constant investment in new technologies for agriculture and manufacturing, more research to expand markets, the creation of value-added products, increased educational attainment, and investment in quality of and access to natural resource amenities.

Dabson (2011) expands on this last point, natural resource amenities:

An increased focus on natural and cultural amenities – the rural stewardship of natural systems related to land, water, air and other natural resources, along with the protection and management of antiquities, historical sites, and recreational amenities, are all important for rural economic development. The challenge is to find ways of attaching values to this broad array of rural assets so that they can be managed sustainably while generating income and wealth to rural residents and businesses. (p. 6)

Newaygo County has a wealth of natural amenities, from lakes and rivers to forest areas and farmland. As Dabson (2011) hints above, however, the economic impact of amenity development is difficult to measure. According to Markeson & Deller (2012), trying to determine the relationship between natural amenities – lakes, mountains, rivers, etc. – on development is often inconclusive. “Local abundance of forest, mountains, snowfall, or fishable streams may be generally insufficient to draw new proprietors to a community” (Markeson & Deller, 2012, p. 18).

Still, Markeson & Deller (2012) found that natural resource amenities may correlate with development when made accessible. Thus, development potential is a result of not only natural amenities but also built amenities. Fishing, for example, would be enhanced by access to marinas, number and availability of fishing guides, and climate, among other factors (Markeson & Deller, 2012). Several other studies suggested a positive correlation between amenities and growth. For example, the amount of lakes in a rural county (Kim et al., 2005), investment in outdoor recreation (Bergstrom et al., 1990), and a combination of natural amenities (Deller et al., 2001) all correlated with economic growth.

In addition to the challenge of measuring economic output, amenity development raises the question of what type of growth happens, whether the growth includes the low-income population, and what quality of jobs tourism development produces (Galston & Bahler, 1995;

Green, 2001; Kim et al., 2005). To be sure, restaurant servers and housekeepers are not necessarily the jobs that will lift a county out of poverty. Development strategies focused on amenities, therefore, must include sensitivity to local and vulnerable populations often most affected by development. After all, historically it is clear that service sector jobs which replaced manufacturing employment often failed to match in terms of wages.

6.4 Social Equity

The question of whether to give a person a fish or teach her to catch her own is long past. Today, the question is, “Who owns the fish?” Rural communities are familiar with this question, as they grapple with the realities of outside entities owning or controlling such precious assets as forests, water and mineral rights.

- Rural Philanthropy Collaborative

WealthWorks (2014) is an innovative rural development initiative which attempts to address the tourism growth challenge. “WealthWorks brings together and connects a community’s assets to meet market demand in ways that build livelihoods that last” (WealthWorks, 2014). Through building partnerships and focusing on local people and places, the WealthWorks model restores underutilized assets and keeps control at the local level. Through the WealthWorks initiative, for example, Michigan’s Upper Peninsula rebranded its tourism sector. Following a decline in mining and timber – and a parallel decline in population, community stakeholders decided to raise awareness of the region’s wealth of natural areas. The Upper Peninsula subsequently experienced economic growth from tourism revenues (WealthWorks, 2013).

Further, Dabson (2011) cites the efforts of WealthWorks in his article on rural, regional innovation:

For many rural communities and regions within the United States, the path out of poverty to resiliency and prosperity is blocked by factors that drain or diminish the value of their assets and inhibit the creation of new community wealth (Dabson et al, 2010). An initiative of the Ford Foundation, Wealth Creation in Rural Communities, is attempting to develop an approach to improving the livelihoods of rural people through creating wealth that is owned, controlled and reinvested in rural places. The focus is on creating economic development and entrepreneurial opportunities that will contribute to wealth, defined broadly to encompass a range of economic, social, and environmental assets. This initiative represents an effort to link concepts of regionalism and value chains to issues of social inclusion. (pp. 7-8)

The Organization for Economic Co-operation and Development (OECD), a forum of 30 member democratic countries, connects inclusive growth to governance. According to OECD, good governance may ensure pro-poor growth; in order to achieve inclusive development, NRM must include addressing governance challenges. OECD emphasizes rules and institutions as

important for countering imperfect market mechanisms (Klop & Lubbers, 2008, pp. 60-61). Additionally, according to Galston & Bahler (1995), in order to be inclusive of the low-income population, tourism growth planning must be open, have broad representation, and ensure protections for vulnerable populations.

6.5 Tourism

As Aldous Huxley penned in "Along the Road" (1925) "We read and travel not to broaden our minds but that we may pleasantly forget they exist". How to make this happen is the challenge facing not only those working to bring tourists into a rural area but also those seeking the "true" rural tourism experience. (Gartner, 2004, p. 12)

Tourism may represent a significant opportunity for sustainable development in Newaygo County. The UN Environment Program (UNEP) connects community/economic development with tourism, conservation, local livelihoods, and social inclusion. According to UNEP, combining tourism with energy efficiency, water and waste management renders it more sustainable and enhances the value of the resources. Ecosystem services are often undervalued, but they represent the foundation for many economic activities. UNEP specifically points out cultural heritage as a component of sustainable tourism development: "Investment in cultural heritage – the largest single component of consumer demand for sustainable tourism – is among the most significant and usually profitable investments" (Pratt & Rivera, 2012, p. viii). Of course, the economic development impact of tourism efforts on local areas also partially depends on how many local suppliers are involved (Pratt & Rivera, 2012).

Likewise, according to Ashley & Haysom (2006), tourism can provide a means for pro-poor growth. They discuss adapting business practice to pro-poor tourism (PPT): "...there is a business case for conducting business in a manner that takes account of opportunities for poor people and focuses on expanding them, regardless of whether companies are labelled 'pro-poor', 'responsible' or 'fair'..." (p. 2). Social license, customer satisfaction, and distinctive brand represent three business advantages that can result from providing opportunities for the low-income population in PPT. Inclusivity also garners a sense of ownership by the community and local officials. Importantly, businesses must include non-financial indicators for performance and success.

The United States Agency for International Development (USAID) supports sustainable tourism initiatives:

The World Tourism Organization defines sustainable tourism as "...management of all resources in such a way that economic, social, and aesthetic goals can be fulfilled while maintaining cultural integrity, essential ecological processes, and biological diversity and life support systems." Sustainable tourism is a platform for achieving development objectives in several sectors, including economic growth, environmental conservation, gender mainstreaming, education, and good governance.

USAID has increasingly incorporated tourism into its development activities to:

- Reduce poverty through market responsive enterprise development and sharing of profits within communities;
- Provide higher education and economic opportunity through the training and capacity-building that accompany tourism development;
- Promote gender equality by involving women in tourism activities, providing them with access to credit and training, and supporting women-owned businesses;
- Ensure environmental sustainability and the vitality of the resource base on which tourism depends; and
- Develop global partnerships by collaborating with developing countries, other donor agencies and private partners in development activities. (Sustainable Tourism, 2014)

Further, Gartner (2004) lists several market trends in tourism development, specifically for rural areas in the U.S.:

- Growing interest in heritage, tradition, authenticity and rural life
- Taking multiple holidays per year with a desire to take a second short break in a rural area
- Increasing health consciousness giving a positive appeal to rural lifestyles and values such as fresh air, activity opportunities and stress-free situations
- Market interest in high performance outdoor equipment from clothing to all terrain bikes and high-tech climbing equipment
- Search for solitude and relaxation in a quiet natural place
- An ageing but active population retiring earlier but living and travelling far into old age (Long and Lane, 2000) (Gartner, 2004, p. 8)

These trends may represent significant growth potential for Newaygo County. Capitalizing on market trends ties into WealthWorks. Learning what consumers demand, and matching demand with sustainable value chains is central to the WealthWorks framework. A tourism value chain in the county could connect the retiring population with recreation; the health conscious with local fresh produce markets; the extreme sports demographic to the multitude of activities available through the county's extensive trail systems; and those passing through or visiting with unique cultural attributes.

Pender et al. (2012) sums up the potential for natural resource-related tourism and amenities:

For places with significant natural (or cultural) amenities such as mountains, lakes, and beaches, it may be possible to increase local income and wealth, diversify the economy, and achieve more sustainable rural development through increased tourism, recreation, and retirement development (Reeder, 1998; Reeder and Brown, 2005; McGranahan, 1999). This amenity-based approach brings in visitors and can attract residents,

providing the community with access to their wealth. The strategy involves promoting and improving the quality of, or access to, the amenities (natural and cultural capital), as well as improving public goods and services used by tourists, recreationists, and retirees. In addition to providing jobs, tax base, and income for business and property owners (financial capital), amenity-based development can lead to improved public infrastructure and facilities (built capital) for all residents. This approach can also help integrate the community with the surrounding region if many of the visitors or retirees come from the surrounding area. (p. 26)

6.6 Tourism and Newaygo County

According to the County of Newaygo,

Today Newaygo County relies on tourism as its main economic support, with agriculture and small manufacturing secondary. The Muskegon River continues to be the main attraction for summer cottage residents and fishermen, who find it nearly the best source for steelhead in the spring and salmon in the fall anywhere in Michigan. Hunting, camping and RV'ing are also excellent, as over half the county is contained in the Manistee National Forest. (Welcome, 2013)

When key stakeholders were asked about what draws tourists to Newaygo County, the following amenities and activities were mentioned, responses were tallied:

Figure 2

Amenities	
Rivers	### ### III
Lakes/Ponds	### ### I
Trails/Paths	### III
Forests	### II
Camps/Campgrounds	### I
Festivals/Events	III
Agriculture/Local Food/ Farmer's Markets	III
Historic Downtowns/ Cultural History	II
Dogwood Arts Center	II



Hungerford Recreation Area
Mountain Biking Trail

Figure 3

Activities	
Fishing	### ## III
Kayaking	## II
Hiking	## II
Boating	## I
Canoeing	IIII
Mountain Biking	IIII
Hunting	IIII
Road Biking	III
Cross Country Skiing	III
Snowmobiling	III
Horse-Back Riding	III
Off Road Vehicles (ORVs)	II
Tubing	II
Swimming	I
Diving	I
Golf	I
Birding	I
Ice Fishing	I

Key stakeholders noted both challenges and opportunities to increasing tourism in Newaygo County (paraphrased):

Tourism Challenges

- Many resources would need significant commercial investment to be able to function as economic drivers in the county
- There is a need to protect the fisheries and water quality in lakes and rivers
- There is a need for secondary amenities – hotels, restaurants, and shopping – which tie into the core amenities (rivers, forests, lakes)
- There is a need to market the resources to raise awareness
- The county must do a better job at promoting hiking trails in its forests
- Resources are scattered throughout the county and disconnected
- The county has a lack of places where one can stay, eat, *and* recreate – a lack of *combinations* for tourists
- Too much development is not good either
- The economic need is the greatest need in the county – long range planning must take into consideration multiple interest groups, and make sure multiple recreation groups are represented
- Collaboration requires overcoming “turfism”

Tourism Opportunities

- Kayaking and canoeing draws the aging population, as the Muskegon River is slow-moving
- Planned trips are in demand: people want guide books to be able to plan a whole day of canoeing, for example. Producing a plan or guide could help organize trips and raise awareness of multiple opportunities
- Consumers demand unique experiences which are affordable and accessible
- Newaygo County represents a recreation location for a growing market in Grand Rapids
- The proposed mountain-biking trail around Hardy Pond will draw people from all over the country
- In addition to its status as a world-class salmon fishery, the Muskegon could also gain the status of world-class trout fishery; the more pristine the waters, the more visitors
- Events like Newaygo Nationals and Ice Fishing Contest attract tourists
- Connecting bike paths throughout the county has potential for spurring growth
- Creating a fish passage – a ladder or stream – around the major dams in the county would draw more tourists
- There is a renewed interest in local food and agricultural tourism
- Newaygo County is an opportunity for people to get away from the city
- There is demand for more equestrian trails
- Great customer service will keep people coming

Tourism is an established strategy for spurring economic growth, and there are many opportunities for tourism growth in Newaygo County. People from the surrounding region

frequent the county as it is an escape from busy and often congested urban living. According to key stakeholders, one trend in tourism demand appears to be shifting from motorized to softer and eco/nature tourism venues – kayaking as opposed to boating or hiking as opposed to ORV, for example. There is also a trend in demand for packaged visits, planned and organized so as to make multiple stops. Thus, creating guides which note rest stops, eating places, and additional runs or routes, depending on the type of recreation, represents an area of growth potential.

The Muskegon River is already a destination spot for anglers, as well as paddle sports. Other opportunities like the Hardy Pond Trail for mountain-biking, longer equestrian trails, and cross-country ski routes on public lands, hold similar potential and could possibly reach “destination” status with more investment. A key challenge going forward will be to enhance the marketability of the resources while also balancing development with care for the environment.

6.7 Destination and Place

Michigan Partnership for Change, a regional planning organization and consultancy, defines sustainable communities as ones that protect natural resources and cultural character, embrace positive land-use policy change and urban redevelopment, and build a sense of place through asset mapping and development (FACF Press Release, 2005). The State of Michigan’s Sense of Place Council connects placemaking to demographics:

Placemaking, or “the process of creating quality places that people want to be in,” is thought of as a process. Demographic shifts are impacting how communities are built, and placemaking strategies have to be responsive to these changes. (Member, 2013)

Indeed, placemaking implies multiple changes, as reflected in the multiple definitions attributed to the concept by the Northwest Michigan Council of Governments:

These include, but are not limited to, targeting urban and rural community investments that support improvements and expansion of their natural asset-based economies; expanding affordability and type of housing and transportation choices; preserving the scenic beauty of a place; increasing the visibility and connectivity of public art; marketing local products to attract tourists; providing broadband connection in all public places; and implementing “smart growth” practices that allow for appropriate growth that mitigates the negative impacts of sprawl to maintain the identity of communities. (Northern, 2012)

The West Michigan Environmental Action Council (WMEAC), based in Grand Rapids, further defines placemaking, and promotes a triple top line of ecology, economy, and community:

Climate change. Natural resource scarcity. Environmental health issues. As a region and as a planet, these issues and emerging concerns will change the way we live. WMEAC and its members are working to build our communities toward a more sustainable future. The work of environmental protection is placemaking at its finest. We’re literally

working to leave West Michigan a better place for future generations, ensuring proper land use, maintaining access to nature, and creating desirable assets for future transportation, economic development, and recreation. (West, 2013)

Investing in natural resource assets as part of a placemaking or destination strategy lends toward a recent trend in development, one that takes a holistic and long-term approach to rural areas. According to a recent business survey of Newaygo County by MSU professor Steven Miller (2013) “Rather than compete with urban centers, smaller communities are increasingly turning to strategies for developing growth from within” (p. 16). This new wave of economic development focuses on creating a region with a competitive advantage (as opposed to targeting specific businesses with incentives).

The Ford Foundation’s “Wealth Creation in Rural Communities” (WCRC) systems approach to development echoes this sentiment; WCRC development is also a “development from within” that emphasizes “locally-owned and controlled place-based assets” (Perry, 2013, p. 1). Of course, rural communities will not benefit from becoming too insular either. Rural communities are also dependent on regions, and the WCRC approach advocates for building more connections, supply chains, and value chains between rural areas and urban and regional centers.

Likewise, according to Pender, Marre, & Reeder’s (2012) USDA Rural Wealth Publication, economies are often tied to regions (p. 24), especially rural towns that may lack infrastructure. “To improve local economic resilience, many rural economic development strategies emphasize diversification, integration with the broader (and presumably more stable) regional economy, or establishment of industries with a comparative advantage in the national or global economy.” (Pender et al., 2012, p. 24). Certainly, this holistic and regional approach would apply to Newaygo County, as many residents commute to Grand Rapids and Muskegon. Additionally, many Grand Rapids residents recreate in Newaygo County – including owning second homes.

6.8 Newaygo County Assets

Natural resource assets contribute to destination locations and placemaking. Fortunately, Newaygo County contains a wealth of natural resource assets, including lakes, rivers, and streams, as well as extensive forest areas. As previously noted, national forests cover 20% of the land (over 100,000 acres), and the county boasts 234 lakes, and 356 miles of rivers and streams (Water, 2014). The County is also known for its apple and peach orchards, onions, and forest products (Newaygo, 2012). Additionally, two large hydroelectric dams on the Muskegon River, Croton Dam and Hardy Dam, are noted on the National Register of Historic Places.

Natural resource assets were tallied according to how often they were noted in key stakeholder interviews:

Figure 4

Natural Resource Assets	
Rivers/Watersheds/Creeks/Streams	### ### ### III
Lakes/Ponds	### ### ###
Forests/Trails	### ### ###
Agriculture/Farmland	### IIII
Public Land/Natural Land	IIII
Wildlife	II

The Newaygo County Convention and Visitors Bureau indicates the marketability of these resources:

Two world class paddling and fishing rivers, the Muskegon and White Rivers, miles of ORV trails and the nationally recognized North Country Trail are just a few of the outdoor recreation opportunities in Newaygo County. We also have one of central Michigan’s finest park systems and have abundant camping opportunities along our pristine waterways... (Outdoors, 2014)

Additionally, the county’s recreation plan highlights several of the comparative advantages of each municipality within the county:

The City of Newaygo is known for its angling opportunities for Chinook salmon, steelhead, and brown trout, as well as boating, canoeing, and kayaking. Fremont is the home of the world’s leader in baby foods, Gerber Products. White Cloud, with its motto emphasizing its recreation activities, “Where the North Begins and the Pure Water Flows” is the county seat.” (Coffey, 2012, p. 8)

Clearly, Newaygo County has many assets from which to draw for tourism growth, amenity development, and overall placemaking investments. Taking stock of existing assets and mapping them out provides clarity and can help target investments. In fact, the Newaygo County Convention and Visitors Bureau posted a detailed map of the county’s natural resource assets on its website (County, 2014).



Croton
Dam



6.9 Maintaining a Balance

Interestingly, there is much talk about economic development, raising income levels, enhancing infrastructure, creating new jobs, and expanding access to services; yet, for Newaygo County, the reason many people choose to live, learn, work, and play here is its rural landscape, open spaces, rustic appeal, agricultural vistas, seclusion, natural beauty, independence, low level of government involvement, etc. This “feel” to the county is already threatened by urban sprawl from Newaygo’s few cities. Fertile soil, for example, is scarce in the county. And the very place where residents want to expand residential development, the southern half of the county, is where the only farmable land is located.

Coffey (2013) confirms the importance of a balance in land use for Newaygo County:

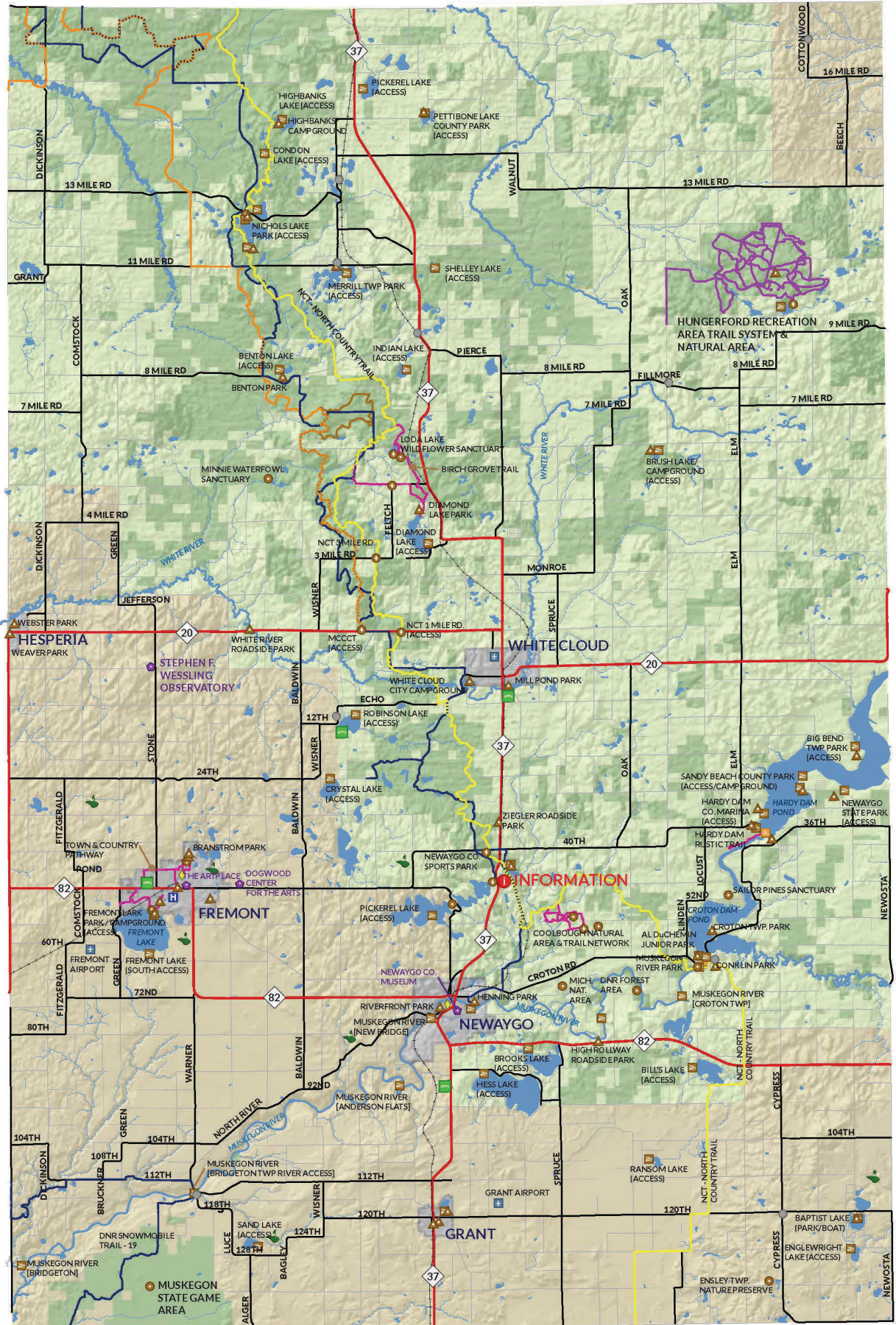
As we shift into a new economy competing not only locally and regionally, but also globally, the importance placed on community character, growth management, protection and access to natural resources, and maintaining a symbiotic relationship between cities and countryside have become increasingly essential components of successful communities...Planning and zoning increases the viability and sustainability of the entire county, protecting natural resources, focusing economic development in and around cities, providing opportunities for recreation and tourism, providing a “sense of place,” protecting citizens by ensuring adherence to state and national requirements, and working with neighboring communities to manage boundaries and share resources.

The balance between preservation and promotion of resources is a constant process. For example, the Muskegon River is no longer threatened by the lumber industry, but now faces new challenges. According to the Muskegon River Watershed Assembly and park system officials, as well as charter fishermen, the natural balance of the ecosystem is still under significant threat. Non-point source pollution, invasive species, agricultural runoff, deforestation, and many other negative industrial and human impacts affect the health of the overall watershed. Riparian home owners, often unaware of the environmental impact, remove vegetation all the way down to the water’s edge – exacerbating runoff and erosion. Additionally, at peak periods during the summer, overuse of the river can lead to pollution or erosion.

For these reasons and many others, maintaining a balance between preservation and promotion of natural resources in Newaygo County is essential for sustainable growth. The county’s natural resource assets contain enormous potential for recreation and nature tourism. Expanding access to these economic drivers over more extractive industries is one way of balancing growth with protection. Admittedly, tourism activities come with their own challenges in terms of conservation, but much less than activities such as mining. Newaygo County will face many challenges and trade-offs in its development journey going forward. Paying attention to the nature tourism trend and meeting the consumer demand for natural resource and recreation activities may represent important sustainable solutions for growth.



- Lake
- River
- Boat Launch
- Dam
- State Highway
- Primary Road
- Road
- Railroad
- Public Land
- Manistee National Forest
- Park
- Natural/Recreation Area
- Trailhead
- DNR Snowmobile Trail
- DNR Motorcycle Trail
- DNR ATV Trail
- North Country Trail
- Hungerford Recreational Area Trail
- Other Trail
- Visitor Information Center
- Lodging
- Historic/Cultural Site
- Farmer's Market
- Golf Course
- Hospital
- Local Airport



Newaygo County Convention and Visitors Bureau Map: Newaygo County
<http://www.newaygocountytourism.com/maps>

Is there a good balance between preservation and promotion of natural resources in the county? Key stakeholders responded to this question and offered advice for righting imbalances (paraphrased):

- There is always this tension, balancing protection with access; but it's a healthy tension.
- Currently, there is an imbalance. Both promotion and preservation come at a cost. However, there is not enough money, and it is cheaper to waste than to conserve. We need to find ways to make it more affordable to conserve, or find ways to help cover the costs of conservation. Or, we could fund it through finding some way of spreading the cost to the consumers – this could be done through labeling/certification costs.
- Agriculture and food processing can produce waste that threatens the quality of the water. Therefore, waste must be treated before entering the system.
- Yes, there is a good balance, even a strong balance. However, it is necessary to combine efforts to preserve with promoting/marketing sustainability for use. There is room for growth in promotion.
- Education about preservation/promotion of natural resources should be a mandatory subject in high school.
- Overall, today there is a good coexistence in the county, and this is probably how it will remain for many years to come.
- Having good leadership in the county creates this good balance and maintains it. Keeping the whole county in perspective also helps the balance.
- There can be a good balance if promotion is managed with preservation of the resources as a priority. We must be prepared to manage and preserve the resources if we are going to promote them more.
- We must always be improving.
- There has to be a compromise between conservation and promotion. You must promote, but with a conservation mindset.
- There is not enough on the preservation side. There is too much resource deterioration and not enough concern. There are water quality issues if overdevelopment happens.
- There is a good balance, but we need to be diligent with our science and research to keep those balances for the long-term. This way we can weigh the balances and make sure they are objective for the future.



- There is a good balance. We are far enough away from urban centers and sprawl. We have a small population, and tourism is underutilized. We have the capacity to handle increases.
- A very active tourism board promotes Newaygo County well, and has a great brochure. We must, however, continually look at adding/improving our recreational facilities. With regard to protection, zoning is the first line for protection. Zoning provides good rules for development. We are doing pretty well in terms of our base regulation of land use.
- We have a good balance between preservation and promotion now. For example, the digester [Fremont Community Digester] project is a creative solution. One challenge is not being proactive enough. Figuring out how the state (through state programs) could help bear the costs of agricultural land and water stewardship, instead of individual farmers, would help incentivize stewardship. This would incentivize farmers to do the right thing. Everyone abiding by the same rules will avoid unduly penalizing one over another. Communicating the benefits of stewardship is important so that people understand the taxes funding the efforts.
- As a rural county, Newaygo is lightly developed. There is a good mix in the county for preservation. Though, more promotion of recreation and the natural resources available is needed.
- We need both more promotion and more education about preservation.

The variety of responses reveals the complexity of this question. There is an emphasis on constantly improving – that there is always room to learn. Stakeholders indicate that increased promotional efforts must be paired with the capacity to maintain and preserve the resources. Interestingly, increasing promotion and education of the resources may also lead to heightened preservation. When resources are used and enjoyed, they may be more valued.

7 Triple Bottom Line Impact: A Brief Look at the Field

Foundations, nonprofit organizations, and governmental institutions play important roles in managing natural resources. Governments provide enforcement and laws, nonprofits provide advocacy, universities contribute research, and foundations both fill in gaps and foster innovation with strategic funding and incentives. From policy to fieldwork, these are the organizations spurring institutional change and public opinion toward sustainable NRM.

From community foundations and field research stations at the local level to global organizations like the United Nations Environment Program (UNEP), efforts are being made both to define and achieve sustainable development. Indeed, sustainable development is an appropriate phrase to use when discussing natural resources because environmental change inevitably involves significant economic and social considerations. Sustainable development

implies both preservation and promotion of resources, both conservation and livelihood interests – in short, a focus on both people and nature.

The interaction between humans and nature is complex, and the concept of sustainable development attempts to address this complexity through process. Sustainable development involves a constant analysis of human impact on nature at the same time as nature provides engines for economic growth. The following sections outline how diverse organizations are attempting to achieve either preservation, promotion, or both, and also what lessons can be drawn for the Newaygo County context.

Two overall themes stand out because of how frequently they surfaced throughout the analysis of models and strategies from other organizations, and they involve the crossover between environmental, economic, and social issues:

7.1 Environment and Economy

First, the combination of environmental considerations with economic strategies: Many organizations target environmental initiatives that also make economic sense, or fund conservation efforts that also account for local livelihoods. Based on this balance between ecology and economics, the Wege Foundation coins its strategy, *Economicology*. Similarly, the Walton Family Foundation terms its strategy *Conservationomics* – supporting “conservation solutions that make economic sense” (Environment, 2014).

The Walton Family Foundation’s freshwater focus areas could apply to Newaygo County:

- Preserving healthy river flows that provide a sustainable water source for local communities and a livable habitat for wildlife;
- Ensuring safe and healthy water quality for people and wildlife alike;
- Restoring land along rivers that can serve as sanctuary for plants and animals and recreation areas for local residents; and
- Designing structures such as dams and levees in a manner that both serves communities of people and minimizes impacts to rivers and wildlife. (Freshwater, 2014)

Strategies for supporting, enhancing, and restoring water resources are well-suited for Newaygo County’s three watersheds, miles of rivers, creeks, streams, and hundreds of inland lakes. Newaygo County’s upstream influence on the water supply also significantly impacts the region, as all three of its watersheds eventually empty into the Great Lakes.

Similar to the Walton Family Foundation, the Conservation Fund (CF) emphasizes the relationship between conservation and economics: “...good economics and good conservation go hand-in-hand. That’s why our mission, and charter, includes both economic development and environmental preservation” (Community, 2013). CF supports community development and sustainability efforts for businesses involved in renewable energy, recreation, and

agriculture. Through its financial institution, CF also helps finance businesses with a focus on natural resources in rural and economically-challenged areas.

According to CF, conservation is more than about saving land: “Conservation also impacts some of America’s most pressing issues: food security, reliable energy, available water, job creation, and livable communities” (Sustainable Programs, 2013). Notably, CF has specific goals for the Midwest region:

- *Sustainable Efforts In The Midwest*
Our sustainable programs in the Midwest tackle land use issues from food security and sustainable farming to flood management and green energy. We partner with local communities on conservation initiatives that protect land, enhance livability in communities and help develop local economies. (Sustainable Programs, 2013)

Michigan State University’s Land Policy Institute (LPI) is yet another organization focused on the intersection between natural resources and economics, providing “*market solutions to land use problems*” (Market, 2013). LPI brings a market perspective to sustainable development of land resources. Preserving farmland, for instance, must go beyond protecting land to increasing the productivity of agriculture. Connecting farmers to new technology and markets is part of this strategy (Viable, 2013).

LPI also conducts research and outreach for how to sustainably develop Michigan’s natural resources. According to LPI, “This requires balancing the needs of current stakeholders with the needs of future generations” (Sustaining, 2013). A better understanding of the environmental impact of forestry, mining, agriculture, and tourism enables improved planning at state and local levels. Importantly, given Michigan’s 1,850 governmental entities, LPI provides coordination and planning assistance across jurisdictions (Enhanced, 2013).

The Kresge Foundation stands out because of its unique focus on *resilience* to climate change. Kresge ties in the triple bottom line: “We seek to help communities build environmental, economic and social resilience in the face of climate change” (Environment Program, 2014). By resilience, Kresge means prosperity in spite of climate change consequences. According to Kresge, communities are resilient when they:

- Anticipate and prepare for the conditions climate change will introduce or worsen.
- Limit the greenhouse-gas emissions that cause climate change by reducing demand for energy and increasing the proportion derived from renewable sources.
- Promote social cohesion and inclusion so that community members share information and support one another. (Environment Program, 2013)

The Michigan Environmental Council (MEC) advocates for environmental issues in the political and policy arena. According to MEC, Michigan’s environment “is more than simply our beautiful natural resources. It is the air we breathe, the water we drink, the land we grow food on, and the neighborhoods we live in” (MEC Priorities, 2013). MEC emphasizes how Michigan’s natural

resources sustain both its people and economy. MEC promotes clean energy with the goal of “a stronger economy, healthier communities, and more reliable energy costs” (Promoting, 2013). MEC also promotes public health safety by building coalitions to tackle issues like obesity and lead poisoning, as well as fighting for cleaner air and access to healthy food.

Further, MEC works to protect Michigan’s water, a topic of particular importance to Newaygo County (Protecting, 2013). MEC emphasizes the significance of the Great Lakes resource:

Our majestic Great Lakes – intimately interconnected with our streams, ponds, rivers, wetlands and drinking water – are our identity. They are catalysts for industry, tourism, recreation and a Michigan quality of life anchored by our proximity to blue ribbon trout streams, idyllic swimming holes and coastline vistas that melt into shimmering horizons. (Protecting, 2013)

The Great Lakes increasingly represent a water resource with global significance. As freshwater demand increases, good stewardship of the Great Lakes becomes more important. MEC works on initiatives to prevent sewage, agricultural chemicals, and other contaminants from entering the water system. More specifically, MEC is involved with state regulators on the Michigan Agricultural Environmental Assurance Program (MAEAP), as well as fracking permits.

MEC also details the potential of Michigan’s natural resources. A large section from MEC’s website is included on this topic because of its particular applicability to Newaygo County:

The traditional avenues by which our natural resources are tapped for economic gain—timber production and mining, for example—are alive and well in Michigan today. From woody biomass utilization to natural gas recovery technologies and new mining plays in the Upper Peninsula, interest in these components of Michigan’s natural resource economy is on the rise. Understandably, these job-creating opportunities are enjoying strong support from Michigan lawmakers and agency staff.

But delivering on the full economic potential of the Pure Michigan brand (and the places that are its foundation) should also mean that, as these extractive operations are undertaken, we look ahead to ensure that the state and local communities have a plan for after the operations are gone. By and large, these industries are relatively short-lived. Once the timber and minerals are removed, the companies and jobs move on, often leaving rural communities with little to show for their efforts.

How might the state and local partners capture additional financial benefit from these one-time removals and invest the money in things that will make local communities attractive and economically sustainable in the future? Could a new mining haul road be built, for example, to also one day provide improved recreational access?

Michigan is currently under-utilizing its natural resource base as an economic development strategy that embraces and employs these assets as place-based, quality

of life investments in the emerging, talent-based economy. Conservation, environmental and outdoor recreation groups can help communities and leaders identify strategies and rally public support for a natural asset-based economic development strategy that would put our state's outdoor quality of life on par with other urban redevelopment and extraction-driven natural resources initiatives. The end result would be a set of implementable natural resource-based economic development plans, with local support and implementation teams, to fully utilize and protect the unique conservation, natural resource and outdoor recreation assets of Michigan's diverse landscape. (Conserving, 2013)

As indicated above, extractive industries have all too often taken resources and left without consideration for what impact the depletion of resources had on the local economy. Increased tax revenue and a temporary surge in employment represent attractive short-term incentives, but often fail in the long-run. Hence, the WealthWorks and other initiatives have focused on wealth owned and controlled by rural areas. How can rural areas weather boom and bust cycles? Sustainability means asking this question and planning long-term for when businesses and industries phase out. Farming sustainably will ensure long-term soil health; measuring the impact of water extraction (Nestle's Ice Mountain water-bottling operation in the Muskegon River Watershed, for example) will help conserve freshwater resources; and sustainable forestry will ensure viability of forest areas.

7.2 Environment and Equity

Secondly, environmental initiatives often have an equity or social emphasis. The Kellogg Foundation initiated a program in which grants were available to community foundations throughout Michigan for improving access and ADA compliance to natural resources. The Greenville Area Community Foundation, for example, was able to develop key natural resource and recreational assets through a \$440,000 grant from Kellogg. These asset improvements included the Fred Meijer Flat River Trail tunnel, Baldwin Lake Public Beach, and Camp Wah-Wah-Tay-See park. In another example of equity at the community foundation level, a significant portion of the Vermont Community Foundation's Food and Farm Initiative is focused on the low-income population. The locally-grown produce is delivered to schools in which up to 40 percent of students qualify for free lunches.

International organizations like the United Nations Environment Program (UNEP) and the United States Agency for International Development (USAID) include a focus on protecting vulnerable populations in their environmental strategies. UNEP's Disasters and Conflicts sub-program focuses on assessments, recovery, and peacebuilding surrounding environmental crises. Often, those most affected by natural disasters and conflicts are the poor and disenfranchised. Better ecosystems management, however, can help reduce risk.

According to UNEP and the United Nations Development Program (UNDP),

Poor people depend on the environment for their livelihoods and well-being. Improved management of the environment and natural resources contributes directly to poverty reduction, more sustainable livelihoods and pro-poor growth. To fight poverty, promote security and preserve the ecosystems that poor people rely on for their livelihoods, we must place pro-poor economic growth and environmental sustainability at the heart of our economic policies, planning systems and institutions. (Poverty, 2014)

Along these lines, UNEP and UNDP joined forces to promote the Poverty-Environment Initiative (PEI). This program provides technical and financial assistance to governments in order to facilitate pro-poor NRM. The program encourages decision-makers to include livelihood improvements in how they manage the environment and promote development. As previously noted under tourism, USAID includes goals for poverty reduction in its sustainable tourism initiatives (Sustainable Tourism, 2014).

Likewise, the Kresge Foundation's environmental program includes the poor in efforts to combat the dangerous conditions (often natural disasters) resulting from climate change:

We will work to ensure that the climate-resilience field develops with dedicated competencies for addressing the needs of low-income people and communities. Given the disproportionate amount of negative effects they will experience, they also must realize commensurate benefit. (Environment Program, 2013)

The Conservation Fund (CF) notes the connection between environmental preservation and poverty: CF's Resourceful Communities Program acknowledges the many challenges facing rural communities: "In North Carolina, [for example], Resourceful Communities creates opportunities that preserve the rural landscape, lift people out of poverty and celebrate the state's unique culture" (Sustainable Programs, 2013).

The Michigan Environmental Council also fights for environmental justice issues:

Working to achieve justice, fairness in policy decisions

Every Michigan resident has the right to healthy air and clean water. Furthering an environmental justice ethic helps provide equal protection from pollutants for all communities, regardless of race, religion or national origin. Still, many Michigan populations continue to suffer disproportionately from disease, hardship and substandard services that are the fallout from industrial pollution and institutional and political neglect. (Fighting, 2013)

Clearly, environmental initiatives involve equity and economic considerations. Without careful planning, economic development could degrade the environment or increase income inequality; on the other hand, conservation interests could stifle growth and lower

employment. Thus, incorporating the triple bottom line into NRM makes sense and will result in a more equitable and economically viable community.

Overall, combining conservation with economics and equity in Newaygo County makes sense. MSU Land Use principles fit Newaygo County, as does the resilience strategy proposed by the Kresge Foundation. Policy advice from the MEC could apply to Newaygo County: the community should have long-term holistic plans for the type of short-term growth from extractive industries. Principles such as avoiding sprawl, creating walkable and livable streets and communities can apply to the county's municipalities.

8 Recommendations

8.1 Strategies for Stewardship

The topic of education came up often in key stakeholder interviews in response to questions about how to best steward the county's natural resources. Increasing knowledge and spreading it to others, including up and coming generations, is key to sustainability. According to another stakeholder, development efforts which include the triple bottom line of environment, economy, and community are the best stewardship strategies. Yet another stakeholder indicated stewardship activities and planning must involve the public because successful development necessitates community ownership.

Education, philanthropy, collaboration, and fostering a good land ethic were noted as strategies for stewardship. More specific stewardship actions recommended to ensure the preservation/promotion balance include: reforestation, zoning laws, stricter rules about catch limits for fishing, recycling, water recapturing, preserving connectivity of forestland, investing in new technology for agriculture, and investing in green energy technologies. One key stakeholder expressed that a stewardship strategy would need to include money, a strategic plan, a capital campaign, a good scientific underpinning, and a common goal that brings people together.

Key stakeholders desired many different kinds of projects when presented with the questions of what they would like to see happen and what NRM planning actions they would recommend in the county. There is some crossover, but overall, the proposed natural resource projects or initiatives and planning actions can be categorized into preservation or promotion:

Figure 5

Preservation
1. Establish a common standard for agricultural preservation and best practices, one that applies uniformly to all townships
2. Protect the White River from commercial water withdrawal and continue support for the Natural Rivers Act
3. Organize a reforestation effort, including cleaning up dead/diseased trees
4. Construct sewer systems around lakes
5. Form a council of all stakeholders with an interest in the Muskegon River
6. Preserve farmland
7. Purchase development rights to protect farmland in perpetuity
8. Remove small dams not serving any useful purpose
9. Develop fish passage improvements around larger dams
10. Install timber road crossings instead of gravel culverts
11. Enhance communication between NRM agencies
12. Incorporate green space and natural areas into development
13. Protect natural Oak and Karner Blue Butterfly communities
14. Increase education about natural resources and agriculture
15. Provide educational material about natural resources when purchasing fishing/hunting licenses
16. Establish a natural resources fund and committee at FAF
17. Provide incentives to develop existing property and avoid sprawl
18. Establish more stringent water protection regulations
19. Raise money for implementing conservation projects
20. Prevent soil erosion and improve wildlife habitats
21. Invest in new technology for agriculture to preserve/conserves resources

Figure 6

Promotion
1. Promote natural resources and fishing
2. Encourage those with second homes to make them permanent residences
3. Offer more recreation opportunities
4. Support land-based economic development
5. Organize and condense natural resource promotional material in the county
6. Manage the Muskegon and White Rivers for tourism and economic development
7. Encourage recreation and events on lakes
8. Establish more bed & breakfast locations
9. Encourage mountain biking, horse-back riding, cross country skiing, canoeing, kayaking, and rafting
10. Raise awareness of the county's extensive trails
11. Fix the immigration system
12. Invest and capitalize on forestry programs – get private landowners involved
13. Conduct more planning with the Ag community (FFA and Ag science, for example)
14. Establish a better connection and improve communication with the Michigan DNR
15. Improve recreation infrastructure and facilities
16. Ease the relationship between environmentalists and developers through more planning and communication
17. Process lumber into green, sustainable products
18. Market the county's groundwater sustainably
19. Promote small-scale, value-added agricultural products to nearby markets
20. Establish community farms, partnering and connecting people to agriculture: for example, provide a subsidy so people can have access to grow their own food

8.2 Potential for Philanthropy

There are numerous opportunities for FACF to partner with local agencies and nonprofits to improve and conserve natural resources in the county. Key stakeholders commented on how to maximize the impact of philanthropy. They praised FACF for its good reputation in the community and ability to convene key stakeholders around important issues. One of these issues is natural resource conservation. The funds for protecting, conserving, or restoring natural resource assets like rivers often do not come from the private sector. This makes philanthropy particularly important for sustaining natural resources.

Key stakeholders emphasized partnerships and matching grants as opportunities to make a greater impact in the community. FACF could represent part of the 25 percent match on MI DNR Trust Fund projects, for example. Additionally, FACF is unique with its ability to make an impact through funding because of its neutrality. Many other groups contributing to projects may have their own interests or narrow interests. FACF, on the other hand, tends to have a longer term focus and sees the bigger picture.

Another stakeholder cautioned, however, that FACF must not spread itself too thin. Capitalizing on a few key focus areas or even one priority will create a greater impact. The Kalamazoo Community Foundation, for example, has the single goal of college access. As a result, every single student in the community has the opportunity to pursue post-secondary education.

It is important to connect donors to their passions. Targeting those donors who are passionate about natural resources and connecting them to projects and initiatives related to their interests will make an impact. People spend money on what they are passionate about, and when FACF is able to do what connects to their passion, it creates a win-win. According to one stakeholder, partnering with local attorneys for estate planning could facilitate these connections – in which donors could be advised of how their passions align with community foundation focus areas and projects.

8.3 Conclusion

There is no one size fits all approach to natural resource management. There are, however, many principles or attributes to indicate successful approaches. Natural resource stakeholders in Newaygo County and the West Michigan region confirmed the concepts from the literature as important to NRM. Governance, community engagement, and flexibility will enable successful and sustainable NRM. Transparency and accountability in institutions at local, state, and national levels will build trust, an essential component to NRM planning. Partnerships, collaboration, and efforts to include multiple stakeholders makes for a smoother planning process and helps avoid one group gaining too much power over another.

Engaging the community in how natural resources are used, enhanced, and protected will also ensure success. Community ownership in natural resource projects benefits NRM due to local knowledge and fast response times when issues arise. Effective engagement means experiential

education, constantly reaching out to all stakeholders, and using channels most appropriate to the audience. Effective communication can establish a solid foundation for NRM planning.

External forces like weather, regulations, or funding affect NRM and make flexibility a necessity for success. Navigating multiple jurisdictions and levels, diverse stakeholder groups, and external forces renders natural resource planning difficult but not impossible. The uncertainty involved in NRM highlights the importance of ensuring decisions are based on sound science and knowledgeable leadership. The structure of NRM planning and regulation must be flexible and adaptable given changing ecological conditions and conflicting social-ecological relationships.

Importantly, successful and sustainable management of natural resources could avoid social conflicts in the future. As an increasing population demands more from a decreasing amount of scarce resources, good governance – establishing rules and best practices for use, as well as incorporating new technology and innovation to adapt, will become essential for sustainability. Newaygo County and West Michigan are blessed with an abundance of natural resources, but without proactive management and investment to anticipate future demands and stresses, resources can quickly be depleted.

Key stakeholders made many recommendations for connecting natural resources to development in the county. Even though many of the suggestions fall on one side or the other of the preservation/promotion spectrum, all stakeholders acknowledged the importance of balance. Development must take into account environmental impact, and conservation must account for livelihood needs. The triple bottom line of ecology, economy, and community must be written into every project and plan.

One of the persistent problems in the county is poverty, which is closely tied to unemployment. As evident from the *Brief Look at the Field* section, several other organizations are investing in natural resources to stimulate the local economy, while protecting the land and including vulnerable populations. While this may seem idealistic or utopian, it is nevertheless the only sustainable way forward. In the context of increasing income inequality, volatility of industries amidst globalization, environmental degradation, and political stagnation, among many other challenges, local ownership and control will become increasingly necessary for creating wealth. Truly, it will be the innovators and risk takers who discover new solutions, and it will be those projects which take into consideration economy, society, and environment which will see success in the future.

Philanthropic investments hold enormous potential to stimulate creativity and innovation in Newaygo County. FAF has a comparative advantage in risk-taking because its discretionary budget has the sole purpose of improving quality of life. Contributing to recreational enhancements, unique natural resource conservation, and industrial natural resource innovations represent opportunities for grantmaking. Weaving natural resource investments into FAF's *poverty to prosperity, community and economic development, and education* grantmaking focus areas will aid in triple bottom line accomplishments.

In order to meet this holistic goal, the following criteria should guide natural resource grantmaking:

- *Community engagement and education components*
 - ⇒ Giving people ownership empowers them. Effective education about the natural resources builds more support and value for sustainably managing the resources.
- *Open planning and broad representation of stakeholders*
 - ⇒ Responsible and inclusive planning helps avoid conflicts.
- *Accountability*
 - ⇒ Transparency in leadership, funding, and decision-making builds trust.
- *Connections to local livelihoods*
 - ⇒ Choosing local suppliers first, for example, fosters local economic development.
- *Environmental impact assessments*
 - ⇒ Of course, choosing to develop in a way which lightly impacts the natural resources encourages sustainability.

In this way, investing in natural resource assets and amenities in the county will contribute to reducing poverty and promoting economic development while also protecting the environment. Natural resources form the foundation of the county's economy, with agriculture, food processing, and tourism. Investing in natural resource assets like water resources, land, and forests, has the potential to provide new opportunities for meaningful employment. From fishing charters to hoteliers to food processors, local businesses will become more sustainable as the resources on which they are based are sustainably managed.

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Appendix A

Interview Protocol:

What natural resource management challenges does Newaygo County face?

What is Newaygo County's comparative advantage in managing resources effectively and efficiently? (Singleton, 2000)

Governance

How do we avoid capture by special interests? (Singleton, 2000)

How do we avoid corruption in agencies/officials/power-holders/enforcers? (Rus, 2012)

How do we promote accountability?

How do we promote fairness and establish trust? (Smith & McDonough, 2001)

What is the best co-operation or co-management strategy between municipalities, NGOs, Newaygo County (with other counties), the state, and national government, as well as the corporate sector? (Singleton, 2000)

How do we best use resources to achieve shared goals?

Community Engagement

How do we establish trust between institutions/actors? Where are our shared interests?

How do you approach community engagement (Davenport & Seekamp, 2013)?

How do you receive feedback from the public on planning/decision-making?

Who does the networking, organizing, and coordinating (Davenport & Seekamp, 2013)?

What is the role of relational networks? How have you established or attempted to establish them?

Flexibility

How is the community prepared or not prepared for changing ecological conditions amidst uncertain times? (e.g. climate change/extreme weather)?

Is scientific uncertainty a significant challenge/barrier?

What is the most effective way to educate the public? (McCool & Guthrie, 2001)

Would decentralizing the decision-making render natural resource management more effective and sustainable? (Larson & Ribot, 2007)

Is natural resource planning more about procedure or creativity/innovation? How flexible are you to initiate change/respond to change and adapt? (Lachapelle, McCool, & Patterson, 2003)

What external forces play a role in natural resource management? (Armitage, 2005)

What role does history play? How do values and beliefs factor in? (Agrawal & Gibson, 1999)

Additional Questions

What is the best strategy for good stewardship of our natural resources?

How do we maximize the impact of philanthropy? Including, how do we maximize the potential for collaboration?

Matching dollars? Matching grants? Where do our missions align?

What would you like to see happen in Newaygo County?

What natural resource planning action would you recommend?

Where is the need? How would you meet it?

What will draw more tourism to the County?

What are Newaygo County's major natural resource assets?

Is there a good balance between preservation and promotion?

If not, how would you correct it?

Appendix B

Informed Consent

This study involves research, including interviews of various key stakeholders in Newaygo County. The purpose of the research is to obtain information about how to best preserve and promote natural resources in the County. I hope to learn strategies for achieving successful and sustainable management of Newaygo County, Michigan's natural resources.

Combining knowledge from the literature and a multitude of key stakeholders in the community will contribute towards not only innovative and sustainable conservation solutions but also more effective foundation grant-making. Strategies for balancing preservation and promotion of natural resources in the midst of uncertain ecological times and often conflicting social-ecological relationships may help sustain the County's and region's wealth of natural resources into the future.

Interviews last approximately one hour. The researcher will follow a list of pre-determined questions. You may skip any questions should they make you feel uncomfortable. The information obtained from interviews may be published and/or disseminated as part of the findings of this research project. Social risks from these non-confidential interviews are minimal. The interviews are not confidential, and participation is voluntary. No penalty or loss will result from refusing or discontinuing participation at any time. If you have questions about the research, you may contact:

Dr. Carlos Parodi, Principal Investigator
309-438-5467
cparodi@ilstu.edu

Additionally, for questions involving your rights as a research participant, the Research Ethics & Compliance Office for Illinois State University can be reached at: (309) 438-2529 and/or rec@ilstu.edu.

Thank you for your participation. Please sign below to acknowledge that you have reviewed this consent form.
