Landscape Stewardship Planning

This overview offers a quick look at Landscape Stewardship Planning. Particularly as it relates to watershed management in a stream, as opposed to a lake or wetland basin dominated landscape.

What is Landscape Stewardship?

According to the Landscape Stewardship Guide produced by the U.S. Department of Agriculture:

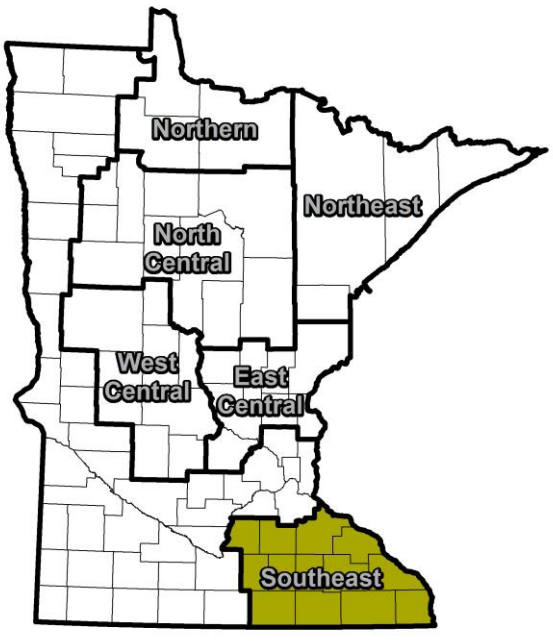
Landscape stewardship involves bringing together the stakeholders in a community of place or community of interest to address resource-based issues of mutual concern. Different stakeholders typically have different views of an issue. For example, a public agency may be interested in improving forest health to conserve an endangered species, a woodland owner may be interested in improved fishing or hunting opportunities, and a member of the public may be interested in access to trails.

The landscape stewardship approach is predicated on the likelihood that these different "stakes" will be satisfied by common solutions. This approach follows five general principles in developing and applying these solutions:

- *Invest in priority areas – be strategic*
- *Build a collaborative network – create ownership in the process and leverage resources*
- *Appeal to self interest – understand stakeholder motivations and needs*
- *Manage for results – align actions with objectives and evaluate outcomes*
- *Encourage flexibility at all levels – be adaptive; every situation is unique*

Landscape Approach in Minnesota

Minnesota has a long history of taking this "landscape" approach to natural resource planning. These efforts build off the foundation laid by the Minnesota Forest Resource's Council's Landscape Program. This program fulfills the MFRC's charge to "encourage cooperation and collaboration between public and private sectors in the management of the state's forest resources." This grass-roots effort builds relationships, strengthens partnerships, and identifies collaborative forest management projects that address local needs and represent concrete steps in determining and reaching citizen-identified short-term and long-term goals for broad landscape regions (see image to the right).



Committee members represent forest industry, natural resource agencies, individual landowners, non-profit organizations, educational institutions and concerned citizens. These committees develop regional landscape plans on a roughly 10-year interval.

Landscape Stewardhsip Plans

Stakeholders in Minnesota have used the guidance from the USDA Landscape Stewardship Guide to develop slightly smaller scape Landscape Stewardship Plans (LSP), These LSPs fit generally under the larger MFRC Landscape Plans.

While there are many ways to divide a region into landscapes, using watersheds as the organizing feature emphasizes the link between natural resource management and water. It also parallels other planning trends in Minnesota, such as the move to One Watershed One Plan (1W1P) plans to replace local water plans. Planning natural community stewardship by watersheds increases the value of Landscape Stewardship Plans as resources for other water planning exercises. To date, Landscape Stewardship Plans have been developed for five watersheds in the state: Root, Kettle, Mississippi River—Winona, Cannon, and Zumbro.

Landscape Stewardship Plans are based on the recognition that many, if not all, of our conservation and environmental challenges are interrelated. Yet, practicality requires a division of activities and expertise in addressing them. As a result, private landowners, city planners, and experts in hydrology, forests, game and non-game wildlife management all work to achieve diverse, but interrelated, goals from their own specialized angle. For example, additional perennial cover in an upland agricultural area can improve soil health while also reducing erosion on the forested hillside below it, and improved conditions in both areas will benefit the hydrology, water quality, and associated biodiversity in the stream below them. Recognizing how these efforts can reinforce each other, and identifying areas where coordination will add the most benefit, will allow greater synthesis of all our efforts, making all our goals for the landscape easier to achieve. To do so, the LSP embraces an "all lands" approach that identifies shared objectives across public and private natural areas as well as urban and agricultural areas.

Healthy Lands, Healthy Waters

In general, these plans focus on protecting water quality by maintaining and enhancing the health of land in the watershed. It is based on the premise that the quality of a water body reflects the integrity of its watershed. Stewardship efforts that maintain forests, wetlands, and other natural communities benefit the biodiversity and ecological health of the region. They also weaken floods, improve infiltration, and remove nutrients from runoff as it makes its way to our streams. Implementing best management practices and expanding perennial cover in agricultural and residential areas will benefit both the natural habitat of the landscape and the water quality in the watershed. This plan proposes a vision, desired future conditions, and strategies that utilize a landscape approach to natural resources stewardship.

Plan Audience

There are many potential uses for LSPs but in general they are intended to benefit:

- Local Water Resource Management Plans and Implementation, including the One Watershed One, Plan (1W1P) program.
- Forest Stewardship Plans and Implementation
- Fish & Wildlife Management Plans
- Community Land Use Planning and Implementation
- Collaborative Project and Funding Development
- Connections to Forest and Water Resource Policy Decision Makers

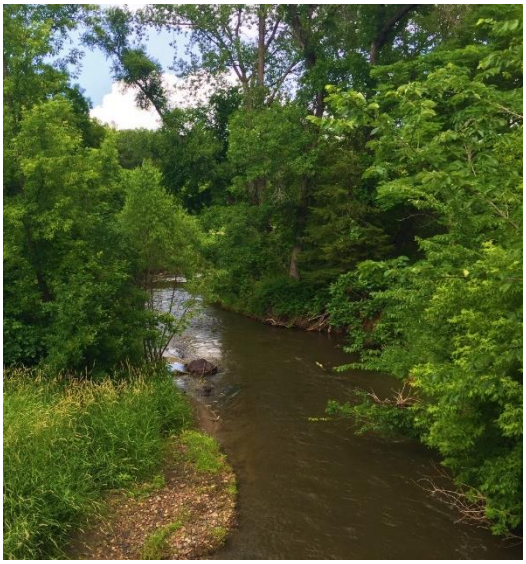
Why a Landscape Stewardship Plan?

A common refrain early in the LSP process is "Why a Landscape Stewardship Plan when there are so many other plans and planning efforts?" This is a valid question but these plans are unique because they focuses on achieving and maintaining healthy water and biodiversity through land stewardship. Additionally, these plans serve as a synthesis of other efforts in the region helping to point out overlaps in goals, objectives and strategies. They can even be valuable as parallel efforts. For

example, while the Cannon River LSP was being developed, the Minnesota Pollution Control (MPCA) was concurrently developing a Watershed Restoration and Protection Strategies (WRAPS) plan for the Cannon River Watershed. The focus of the two planning processes were not identical, however they shared several key goals and they helped inform each other in several ways. The WRAPS process provided strong input from multiple partners that was helpful in developing the Cannon LSP, and the LSP was referenced in the WRAPS as a useful tool in developing and coordinating water protection strategies for the in the Cannon River Watershed.

These plans are not intended to replace other plans and planning efforts in the region but instead it serves as a reference for future and concurrent planning efforts, and to set a framework for coordinated implementation of the multiple conservation efforts those plans represent.

Stream Based Systems



The five watersheds in Minnesota to have LSPs developed (Root, Kettle, Mississippi River—Winona, Cannon, and Zumbro) differ in many ways but they are all primarily stream dominated. Landscape stewardship planning is even more important in these stream-based systems due to the complexity of managing their hydrology. Several factors effect this, but in most cases, the condition of a watershed is reflected in the condition of its water.

The connection between land use and water quality becomes more complicated in a stream based system where land uses far away may be impacting the water quality downstream or, as in the case of southeastern Minnesota, the region is underlain by karst features. These karst landscapes feature hidden, rapid pathways through which water, and associated pollutants, can travel to drinking water wells or surface water.

As the authors of the Cannon and Zumbro LSPs dealt with the challengs of prioritizing natural community stewardship for water quality protection in such a spatially complex system, a few insights became helpful:

- **Interpreting water quality data is more complex than in lake-dominated watersheds**. While water quality data remain crucial to protection planning their interpretation becomes complicated in a system where stream segments are influenced by conditions potentially far upstream. These data are most useful in smaller tributary catchments where the landscape effect is more traceable.
- **Focus on beneficial landscape features.** Because water quality data can be complicated in interconnected stream networks, it is easier, and likely more useful, to focus analysis on identifying places where concentrations of desirable

lanscape conditions occur. This is especially true in watersheds, such as those of Southeast Minnesota, where the most degraded portions are commonly found in the headwaters of the streams. While the effects of altered hydrology and nutrient runoff at the top of the watershed will remain present downstream, protecting places where natural processes are preventing further water quality impacts is still crucial to improving our water resources in the most efficient manner posisble.

- **Identify catchments where action can make a measurable difference.** The ability to make a measurable difference in water quality is often a requiremnet of funding oportunities, and is important for justifying the effort involved. This often results in shifting focus towards smaller catchments where the landscape improvements won't be offset as easily by degradation upstream.
- **Recognize that sometime success means no change in quality.** While funding agencies are often concerned with "measurable improvements", it is also important to note that a typical goal of protection is to prevent degradation. By definition, this means that success is defined by preventing a negative change in water quality, not creating a positive one. It is important to communicate that maintaining an acceptaible status quo can also be a "win" for water quality.
- **Potential risks deserve more attention in watershed modeling.** The WRAPS for nearly all of Southeast Minnesota's watersheds have included HSPF modelling to identify potential impacts of different restoration strategies. However, none of the HSPF models were run to assess potential impacts from increased conversion of native cover, or other likely changes in the landscape that could impact water quality. By only modelling restoration strategies, these results falsely assume that general landcover patterns will remain static. This creates bias in the document towards expensive restoration projects while ignoring the need to preserve beneficial landscape features that are at risk. The analysis performed by St. Mary's Geospatial Services department during development of the Cannon and Zumbro LSPs attempted to fill some of this information gap, however it lacked the sophisticated modelling capabillities that HSPF provides.
- **Protection and restoration efforts will need to reinforce eachother to meet goals.** Natural communities are currently providing critical water quality services in Southeast Minnesota. Improving them, and adding more, will increase those benefits. However, their effectiveness is also somewhat dependent on improvement of agricultural practices, especially relating to soil health and drainage management. The "flashier" hydrology that has resulted from increased soil drainage and decreased soil organic matter content in agricultural areas is causing water flow to be faster and more channelized. This allows water to flow more quickly through natural communities, and lessen their ability to treat it. The closer the hydrology of these watersheds can be brought to their natural patterns, the more effictive native vegetation will be at slowing water, increasing infiltration, and taking up nutrients.

Process Review

Now that five Landscape Stewardship Plans have been developed in Minnesota, we felt it worthwhile to reflect on what is working, not working, and directions to go from here. The authors of this summary are most familiar with the process for developing the Cannon and Zumbro plans and most of these thoughts are related to the development of these plans, although we think many themes will be widely applicable. The authors find the LSP and planning process to be a valuable asset to land and water management in the region. The following list is meant to inform future LSP development not dissuade one from undertaking the effort.

- **Leadership**: Although this is a collaboratively developed planning effort, there needs to be particular organizations that take the lead in seeking funding to develop these plans and see them through to completion. Minnesota is lucky to have several such organizations.

- **Stakeholders**: These plans have a wide range of potential stakeholders but there will often be a handful that are essential to a viable planning process. These key stakeholder are also often the individuals whose time is stretched thinnest. If a convincing hook is not utilized early they may only loosely participate and are unlikely to feel much ownership in the resulting LSP and its implementation. Knowing who your key stakeholders are ahead of time and their strengths and weaknesses will be crucial to involve them in the process. Some you will want to bring in early, others will be best contacted once something has been developed. A somewhat narrow steering committee seems to be effective but bringing in a broader group for input and review will likely help the product but also their engagement in the implementation of the plan.

- **Meetings**: Schedules can be difficult to coordinate but in-person meetings are important for this collaborative process. The development of this plan is as much about relationship building as the final document. Contact between stakeholders leads to an increased likelihood of cross-boundary projects being undertaken. Excessive meetings, on the other

hand, can lead to frustration by those who commit time to attend. It will depend on the project and audience but a mix of in-person meetings of a larger group coupled with a few informal one-on-one meetings with partners focused on specific subjects is the best way to maximize stakeholder engagement.

- **Document**: There are many ways to develop one of these documents. Determining what should be included and what should be referenced is an important question that each planning team will need to decide. Plan length will largely be determined based on whether Conservation Opportunity Areas (COAs) are included and how many map images are included. Maps often give useful contextual information to plan users but efforts should be made to determine their potential usefulness. One option utilized in the Cannon and Zumbro LSPs was to place the landscape context information further back in the document.

- **Implementation**: Implementation of these plans is difficult to enforce due to the voluntary nature of these plans. One key is to have the individual or organization leading the development to be committed to the outcome and implementation of the plan. Having leadership in the early stages of implementation will be key to long-range implementation.

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