

Rum River Watershed Landscape Stewardship Plan



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What is Landscape Stewardship?

Effective landscape conservation is a compelling challenge across the United States. Declining water quality, climate change, forestland conversions, wildfires, and invasive species are among many threats to our Nation's forests and the ecosystem services they provide. Forestlands cover roughly 42 percent of the Midwest and Northeast states, with 77 percent of those forests in private ownership. There are nearly 5 million private forest landowners in these 20 states. With over one-quarter of the Nation's forests, and nearly half (43%) of the Nation's population in this region, conserving our forests is not a luxury, it is a necessity. Landscape stewardship is the process established by the US Congress through policy directives in the 2008 Farm Bill to face these challenges.

Leadership from the USDA Forest Service and the Northeastern Area Association of State Foresters (NAASF) developed a vision for landscape scale conservation to address these threats. They recognized the public and private benefits that planning and managing forestlands across boundaries are best addressed through integrated local based partnerships with supporting resources. In 2011, they published the document, "*Landscape Stewardship Guide*" to help state and local partners establish their landscape stewardship programs.

Recognizing the critical linkages between forests and water quality, the Minnesota Department of Natural Resources (DNR) and the Minnesota Board of Water and Soil Resources (BWSR), together with local partners and private landowners, have teamed up to develop watershed-based landscape stewardship plans across the forested regions of the state.

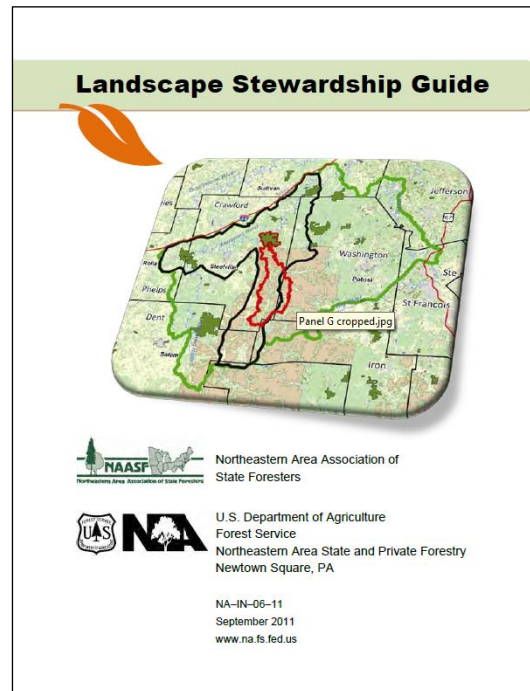
Credits

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Cover photo: "["Rum River in Princeton, Minnesota"](#) by [Tony Webster](#) is licensed under [CC BY-SA 2.0](#).

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Minnesota Department of Natural Resources
Division of Forestry
500 Lafayette Road
St. Paul, Minnesota 55155

June 2020

Dear Citizens of the Rum River Major Watershed:

We are pleased to present you the approved Rum River Watershed Landscape Stewardship Plan. This plan was developed by a group of conservation professionals working in your watershed that deliver natural resource services.

The primary purpose of this plan is to empower your team of service providers to work together with private landowners and land managers to protect working forest lands and promote private forest stewardship. This plan identifies and prioritizes opportunities for private landowners to engage in forest land protection and sustainable forest management, including timber harvesting. It is your choice as to which level of forest land protection and management works for you and your family.

This plan also provides an array of forest resource recommendations on a watershed basis to support the implementation of the Mississippi Headwaters Watershed One Watershed One Plan (1W1P). It provides useful information and recommendations on sustainable forest management that will help protect water quality, enhance wildlife habitat, promote healthy forests and address climate change issues while supporting the forest-based economies of tourism and timber.

This plan was developed with federal funding through the Landscape Stewardship Program established by the 2008 Farm Bill. As envisioned by the USDA Forest Service and the National Association of State Foresters (NASF), landscape stewardship plans are “living” documents and should be enhanced as new information becomes available. At a minimum, this plan should be revised every ten years. If you have any suggestions for improving this effort or corrections to information that has been presented, please be sure to contact members of the Local Forestry Technical Team. Please consult your soil and water conservation district website for their contact information.

Thank you for your continued efforts in managing the forests of the Rum River Major Watershed. We look forward to working together with you.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gary Michael'. The signature is fluid and cursive, with a large 'G' and 'M'.

Gary Michael
Cooperative Forest Management Unit Supervisor
Minnesota Department of Natural Resources – Division of Forestry

Introduction

Forests play a critical role in keeping water clean by absorbing and filtering water, preventing erosion through soil stabilization, and allowing for groundwater recharge. The National Association of State Foresters recognized the connection of healthy forests to clean water with its policy statement: *“Water, in all its uses and permutations, is by far the most valuable commodity that comes from the forest land that we manage, assist others to manage, and/or regulate.”*

Purpose and Scope

Recognizing the critical linkages between forests and water quality, the Minnesota Department of Natural Resources (DNR) and the Minnesota Board of Water and Soil Resources (BWSR), together with local partners and private landowners, are teaming up to develop watershed-based landscape stewardship plans across the forested regions of the state.

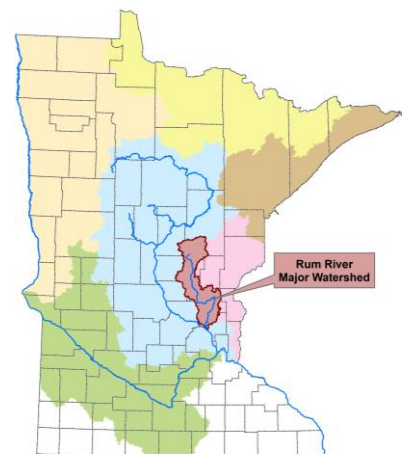
The Rum River Major Watershed in Central Minnesota is home Mille Lacs Lake, which is one of Minnesota’s crown jewels as a recreation destination. The Rum River is also a popular recreation destination and a major tributary to the Mississippi River. Research of lakes and rivers by DNR Fisheries and the hydrologist Sandy Verry revealed the impacts of land use disturbance in a watershed and importance of protecting private lands. The Rum River Major Watershed is well-situated to advance the protection and management of working forest lands on a landscape level.

The Rum River Watershed Landscape Stewardship Plan (LSP) is a 10-year tactical plan focused on guiding the protection and management of working forests on private lands on a watershed basis. The goal of this plan is to empower teams of service providers to work together with private landowners and land managers to strategically protect working forest lands and promote private forest stewardship to enhance both private and public benefits that forests provide. Investing resources for private forest management in the parts of the watershed where the public benefits can be stacked (e.g., tourism, timber, habitat, etc.) provides the greatest return on investment for the citizens of Minnesota.

Forest and Water Resources Context

The Rum River Major Watershed is in the transition between Minnesota’s lake country to the north, farming regions to the west, and metro centers to south. An assessment of the resources in the watershed described in the first part of this plan found that:

- Private land ownership dominates the watershed. Public lands are concentrated on the northern side around Mille Lacs Lake.
- Forests and wetlands are largely intact in the northern 1/3 of the watershed while elsewhere much of the former habitat has been converted to agriculture and urban development.
- Management activities over many years have altered the species composition from forests dominated by tamarack, northern pin oak, and bur oak to forests of aspen, red oak, and ash.
- High-quality water resources provide abundant recreation opportunities and source water for major populations centers downstream (St. Cloud and the Twin Cities). Water quality is dependent on maintaining significant levels of forest land cover across the watershed.



Linking Landscape Stewardship and Local Water Planning

Landscape stewardship is an “all lands” approach to forest management. Created by the US Forest Service, it addresses multiple conservation challenges through the practical application of science and collaboration. It is based on five working principles: 1) Invest in priority areas, 2) Build a collaborative network of service providers that effectively work together to serve more landowners, 3) Appeal to interests of both landowner and service providers, 4) Manage for results, and 5) Encourage flexibility at all levels to be more adaptive and cooperative in serving customers. Watershed based landscape stewardship plans analyze the critical contexts between land cover and water quality in ways useful to local water planning.

In Minnesota water management planning is done on either the county or the major watershed (HUC 8) scale, and the goals or recommendations from the Landscape Stewardship Plans may be integrated into these water management plans. Major watershed-based water management plans are created through the One Watershed One Plan (1W1P) program administered by BWSR in partnership with local units of government. As described in Minnesota Statutes §103B, these plans must address: 1) surface water and ground water; 2) storage and retention systems; 3) groundwater recharge; 4) flooding and water quality problems; 5) wetlands; 6) riparian zone management and buffers; and 7) fish and wildlife habitat and water recreational facilities.

Setting priorities is the first step in BWSR’s strategic “Prioritize-Target-Measure” (PTM) approach to water resource planning and conservation. In managing watersheds, it is essential to recognize that not all valued resources and issues can be addressed at the same time. Prioritizing public and private investments through forest land protection down to the minor watershed level is a critical function in the LSP process. The second step is to target action towards more specific areas and issues within the priority watersheds. Through landscape stewardship plans, targeting is done down at the specific parcel level within priority minor watersheds. To measure is the ability to demonstrate progress towards the achievement of management goals over time. After landowners decide what actions to take and implementation occurs, landscape stewardship plans provide guidance on monitoring.

Partners and Process

This plan was developed by a team of resource professionals working in the watershed. The list of project partners is provided in the [Appendix](#). Data, maps, and reports detailing land cover, hydrology, and an array of natural resource topics developed by the project staff were provided to the LSP planning team. The team reviewed and discussed this material at three meetings as a basis to help shape this plan. This planning process was funded by a grant from the US Forest Service.

Plan Content – Using this Plan

The primary audience of this plan are the service providers who work with the thousands of private forest landowners in the Rum River Major Watershed. Service providers include soil and water conservation districts, consulting foresters, DNR, NRCS and conservation organizations. This Plan is generally organized into three parts including: 1) analysis of forest and water resources, 2) vision and goals, and 3) guidance for implementing the plan. The [Appendix](#) provides additional background information designed to be actively used by the team of service providers to help them work more effectively together to serve greater numbers of landowners on a consistent basis. Ultimately it is the landowner’s choice as to which level of forest protection works for them and how active they want to manage their woods. This plan seeks to help service providers increase their intentionality together to increase the strategic delivery of services to landowners and provide a full suite of forest management options to them.

Part 1: Analysis of Forest and Water Resources

Introduction

The first part of this plan provides background information on the setting of the Rum River Major Watershed and the conditions of its forest and water resources. It also introduces concepts to help increase the ability of service providers to deliver private forest management services.

Resource Context

The Rum River Major Watershed is in the eastern portion of the Upper Mississippi Basin and flows into the Mississippi River by the City of Anoka. The Basin starts in Lake Itasca and ends at Lock and Dam Number 2 near Hastings. It covers about 20,100 square miles and is the only major drainage basin located entirely in Minnesota. The Upper Mississippi Basin is the most important source water in Minnesota – supplying both St. Cloud and the Twin Cities – as well as a contributor of source water for every major population center along the Mississippi River.

The Rum River Major Watershed has its beginnings in Mille Lacs Lake, which is the watershed's most prominent feature and headwaters to the Rum River. The watershed drains about 1,584 square miles and is composed of seven HUC 10 subwatersheds (Fig 2) which correspond to major streams and lakes in the region. The subwatersheds are further subdivided into 101 minor watersheds (HUC 14), each averaging 15.7 square miles.

Smaller than minor watersheds are catchments, which is the area between pour points, and it is also the level at which watersheds can be classified to a protection or restoration strategy as defined by the [MN DNR Fisheries Lake Habitat Framework](#) – see Fig 1 and Fig 3. Most of the catchments in the southern two-thirds of the Rum River Major Watershed fall into either the “Partial Restoration” or “Full Restoration” categories, while “Protection” catchments are more common in the northern third.

Fig 1. Watershed categorization framework.

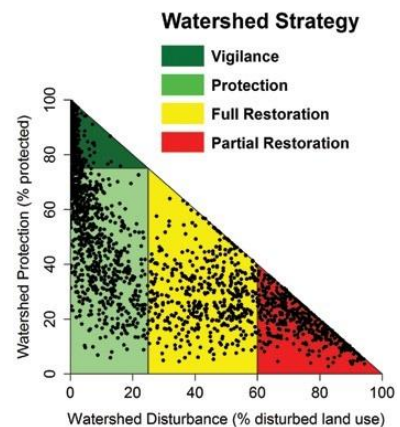


Fig 2. Rum River major and subwatersheds.

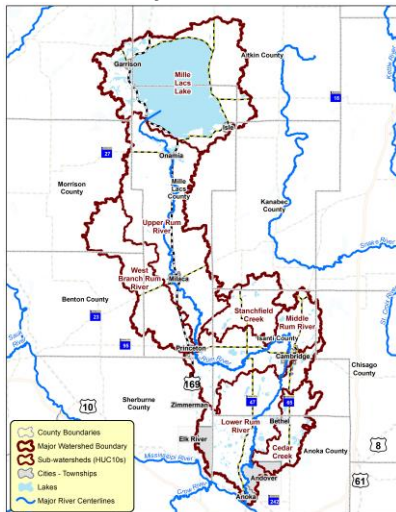
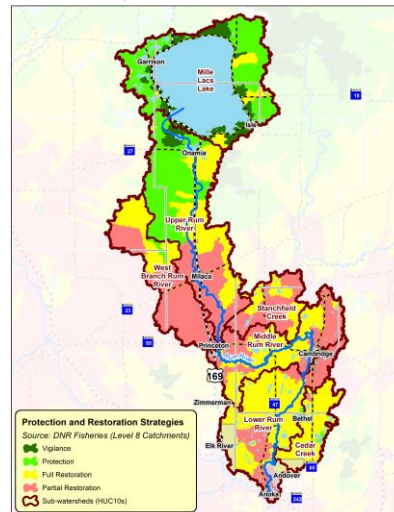


Fig 3. Protection/Restoration classifications.

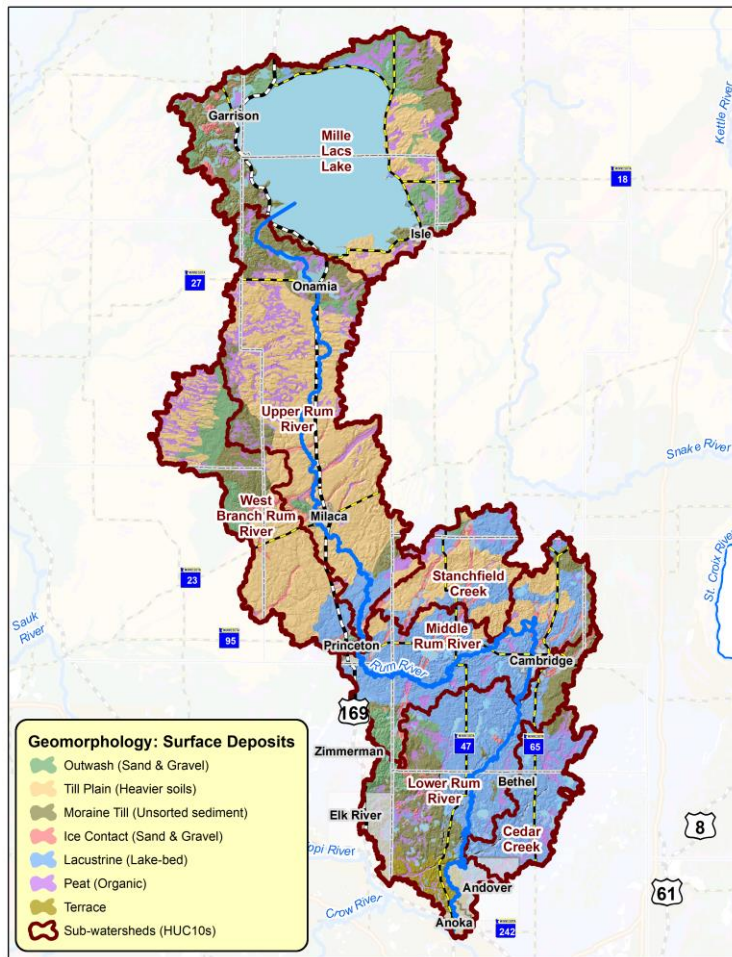


Geomorphology

From a geomorphological perspective the Rum River Major Watershed has roughly three different regions. The first region is the area around Mille Lacs Lake, which is a rolling terrain of end moraines. The next region is the area south of Mille Lacs Lake to just north of Princeton, or approximately the border between the Laurentian Mixed Forest and the Eastern Broadleaf Forest Province. This part of the watershed is characterized by till plains and drumlins formed by the Superior Lobe glacier. The last region covers the southern one-third of the Rum River Major Watershed and corresponds to the extent of the Anoka Sand Plain ECS Subsection in the watershed. This area is a level to gently rolling lake plain with fine, sandy soils.

Surface deposits have a strong impact on vegetation development. In general, fire-dependent communities are present on the coarse sand and gravel soils of outwash plains or localized deposits of sand and gravel within moraines and till plans. In contrast, mesic hardwood forests are usually found on heavier soils with impermeable layers that can perch snow melt or rainfall. These soils are often associated with moraines and till plains, or occasionally glacial lake sediments. The peatlands forests developed on level, poorly drained areas - such as glacial lake beds - while wet forests systems are found in areas with periodically saturated soil.

Fig 4. Geomorphology of the Rum River Major Watershed.



Land Cover

Prior to European settlement, the Rum River Major Watershed was covered by forests, savannas, wetlands, and lakes (Table 1 and Fig 5). Today, the landscape has been significantly modified and 50% of the forests have been lost, mainly to agriculture (Fig 6). Agriculture is especially prevalent south of Milaca and Highway 23, which is a rough dividing line between the developed and undeveloped portions of the watershed. North of this line are greater amounts of protection and forests, wetlands, and lakes remain the predominate land cover. Conversely, in the Lower Rum and Cedar Creek subwatersheds in the southern end of the major watershed agriculture is decreasing and urban development from the expanding metro area is increasing.

Table 1. Historic and current land cover comparison.

Land cover description	Pre-European settlement		2016	
	Acres	%	Acres	%
Urban and rural development	0	0%	63,023	6%
Cultivated land	0	0%	176,319	17%
Prairie – Hay/pasture/grassland	162,673	16%	147,414	15%
Forest	646,911	64%	320,250	32%
Upland shrub	0	0%	1,442	0%
Water	154,419	15%	149,727	15%
Bog/marsh/fen	49,780	5%	154,857	15%
Mining	0	0%	741	0%

Source: MnModel Historical Vegetation Model and National Land Cover Database.

Fig 5. Historic vegetation in the Rum River Major Watershed.

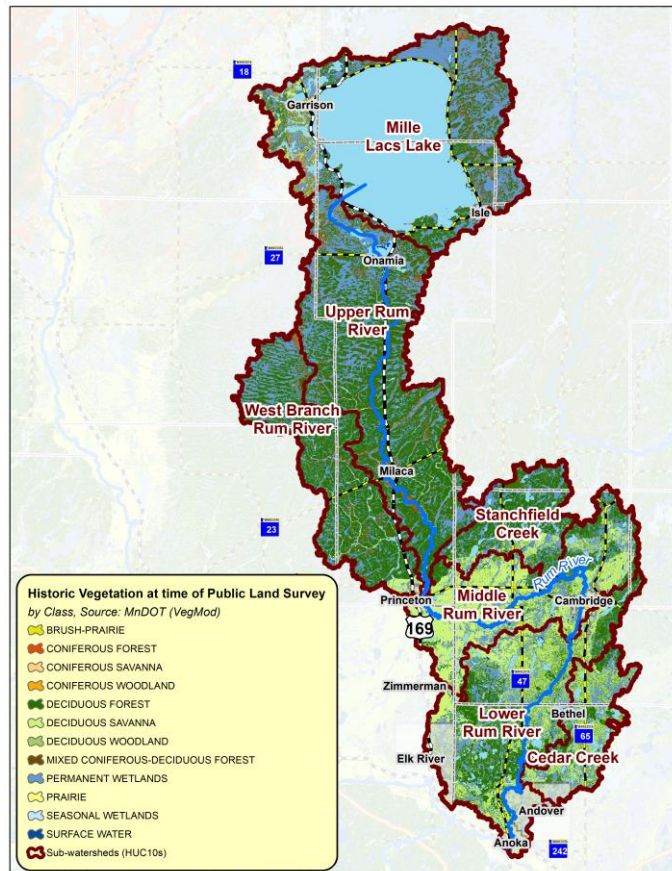
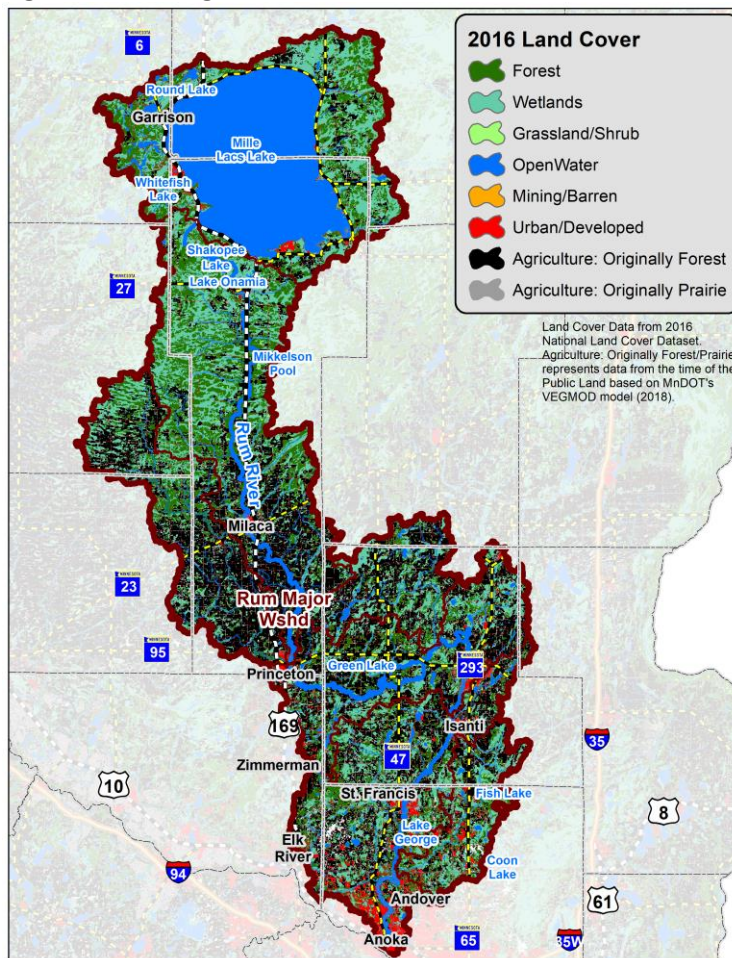
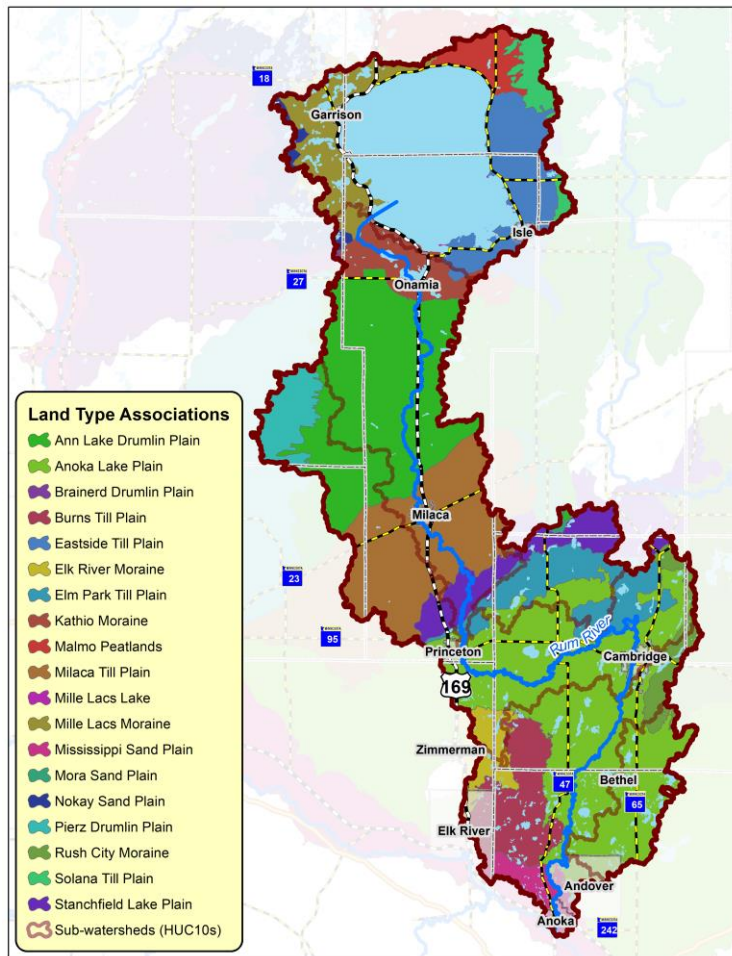


Fig 6. Current vegetation and areas of historic forest loss.

Ecological Setting

The Rum River Major Watershed is uniquely situated at the transition between the Laurentian Mixed Forest Province (LMF), which covers its northern two-thirds, and the Eastern Broadleaf Forest Province (EBF), which covers the southern 1/3. The portion covered by the LMF Province is also located entirely within the Western Superior Uplands ECS Section and the Mille Lacs Uplands ECS Subsection. The EBF portion is entirely within the Minnesota & NE Iowa Morainal Section, and the Anoka Sand Plain Subsection.

The next level below the ECS Subsection is the Land Type Association (LTA). LTA's are units within Subsections that are defined using glacial landforms, bedrock types, topographic roughness, lake and stream distributions, wetland patterns, depth to ground water table, soil parent material, and pre-European settlement vegetation. The Rum River Major Watershed has portions of 19 LTAs (Fig 7), although over half of the area is covered by only three of them: the Anoka Lake Plain (23% of watershed), Ann Lake Drumlin Plain (16%), and Mille Lacs Lake (12%).

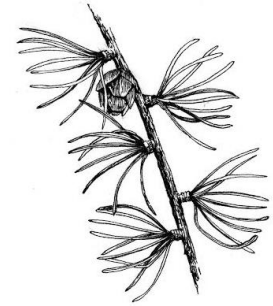
Fig 7. Land Type Associations (LTAs) of the Rum River Major Watershed.

In the Rum River Major Watershed there is a distinct north-south gradient of available moisture, decreasing moisture as one moves from north to south, and the pre-European settlement vegetation reflected that. The forest around Mille Lacs Lake was a wet-mesic hardwood-conifer with white pine as the conifer component. Below Mille Lacs uplands were mesic northern hardwoods with minor amounts of wet-mesic hardwood conifer forest. The lowland areas around and below Mille Lacs were inhabited by sedge-fen, black spruce-sphagnum, or white cedar-black ash communities. Around the transition from the LMF to the EBF province (which occurs just north of Princeton) the upland vegetation shifted relatively quickly to oak forests and savannas in the uplands, and wet prairie in the lowlands.

As a result of the logging of northern Minnesota's forests in the late 1800's and early 1900's, along with subsequent forest management practices, the composition of the forest has changed dramatically. In the area around the Rum River Major Watershed the forest shifted away from being largely dominated by tamarack, northern pin oak, and bur oak, to aspen, red oak, and ash being the most abundant species (Table 2).

Table 2. Change in tree species composition in since presettlement.

Species	Change	Species	Change
Tamarack	Decline, > 10-fold	Ash	Increase, 2 to 3-fold
Northern pin oak	Decline, 5 to 10-fold	Basswood	Increase, 2 to 3-fold
White pine	Decline, 5 to 10-fold	Aspen	Increase, 3 to 5-fold
Bur oak	Some decline	Red oak	Increase, 5 to 10-fold
Sugar maple	Some decline	Red maple	Rare as bearing tree
Paper birch	Some decline	Red pine	Rare as bearing tree
Elm	Some increase		

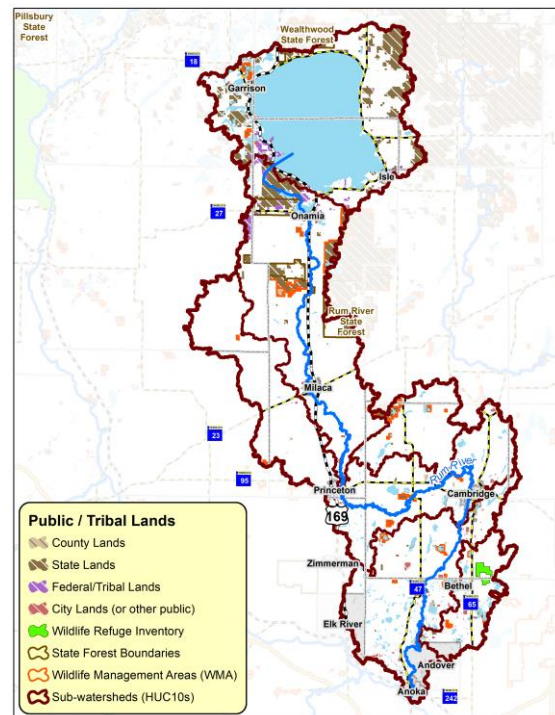


Source: DNR Division of Forestry, Resource Assessment.

Note: Results are summarized from Land Type Association (LTA)-level data that only includes LTAs that intersect with the Rum River Major Watershed.

Land Ownership

Land ownership in the Rum River Major Watershed is largely private and only 25% of the area under public ownership, most of which is Mille Lacs Lake, which is a public water body. Public land accounts for 9% of the watershed and is concentrated around Mille Lacs Lake in Mille Lacs Kathio State Park and tax-forfeited land. Wildlife Management Areas are scattered throughout the rest of the watershed and The University of Minnesota Cedar Creek Ecosystem Science Reserve is in the Cedar Creek Subwatershed.

Fig 8. Private and public land ownership.

Social and Economic Context

Census data from 2010 estimates that the population of all minor civil divisions in the Rum River Major Watershed is 298,366, or 5.6% of Minnesota's population. Despite its relatively low population, the Rum River Major Watershed provides outsized social and economic services.

The Rum River Major Watershed is a popular recreation destination that draws tourists from across the nation to visit its 450+ lakes and 600 miles of streams. The most famous of these are Mille Lacs Lake and the Rum River. The Rum River is also unique in that it receives input only from precipitation, which is first filtered by the forests and wetlands, and then goes on to supply drinking water for major population centers in the rest of the state. In fact, in the [Forests, Water, and People](#) study by the Forest Service, the Rum River Major Watershed was ranked as the second most important major watershed in all of Minnesota for providing drinking water.

To continue producing high quality drinking water, the forests and wetlands in the Rum River must be protected. In general, forests and wetlands export much less phosphorous – which is a key determinant of water quality – than development or agriculture (Fig 9). Furthermore, natural cover greatly promotes infiltration and reduces runoff of sediment and potentially pollution-laden runoff (Fig 10).

Fig 9. Annual phosphorous exports by land use.

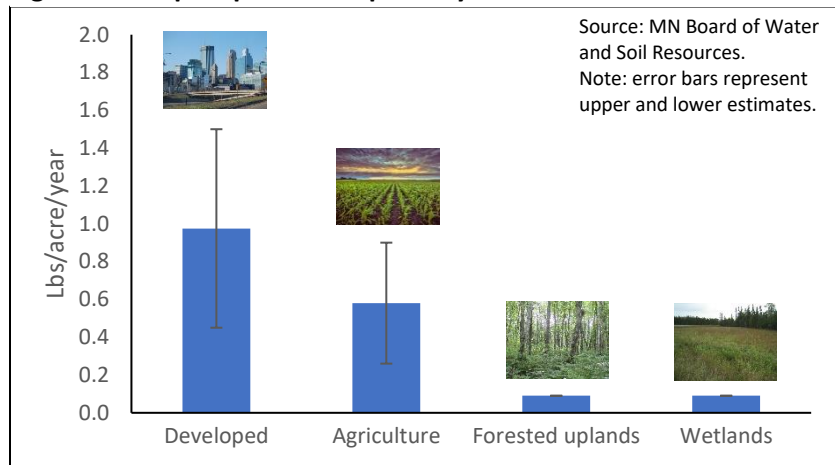
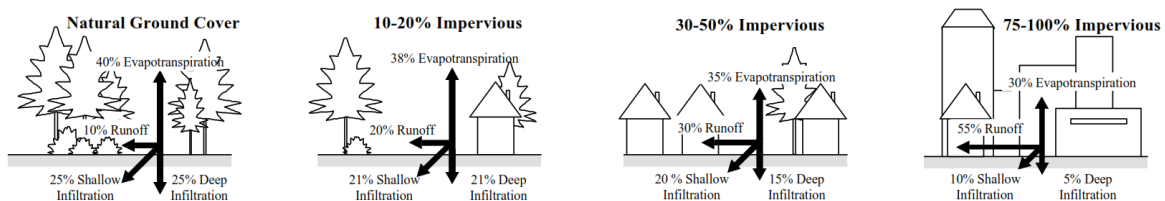


Fig 10. Effects of imperviousness on runoff and infiltration.



Source: Adapted from Arnold and Gibbons, 1996.

Risk/Quality Assessment

“Priority is at the intersection of risk and quality”

- Pete Jacobson, MNDNR Fisheries

What is Protection?

One of the most important concepts in landscape stewardship is that of ‘protection’. In the context of this plan, the parts of a landscape that are protected are those areas that are not likely to be converted from an intact natural ecosystem (e.g., forest, wetland, lakes, etc.) to an open or disturbed state (e.g., agriculture, development, or mining). Protected land is commonly defined as public lands (local, state, federal), public waters (lands & streams), wetlands on private lands, and perpetual conservation easements on private lands. The *Generalized Land Protection Model*, shown below, illustrates the details of what in the landscape is protected and what is at risk.

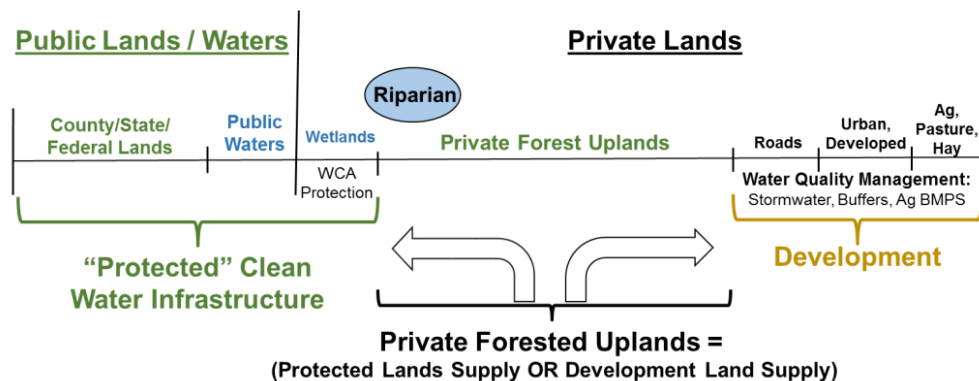


Fig 11. Generalized Land Protection Model.

What is Priority?

The view that protection efforts should focus on areas that have high quality habitat but are at risk of being lost is one of the guiding principles of landscape stewardship in Minnesota. Generally, the greatest risk occurs on private lands because that is where conversion of natural ecosystems to agriculture and development is the most likely to occur. Other potential indicators of risk include lake water quality trends, lake phosphorous sensitivity, point source pollution, land disturbance, slope, and road development. Conversely, measures of quality include prioritized lakes (e.g., wild rice, tullibee, trout), lakes of biodiversity significance, forest cover, Forests for the Future score, terrestrial biodiversity ranking (Minnesota Biological Survey), Wildlife Action Network score, and others. At the first meeting of the Rum River LSP Planning Team, participants reviewed these indicators for each minor watershed and determined the drivers of quality and risk in each. A summary of these drivers for each subwatershed is provided in the table below.

Table 3. Drivers of quality and risk in the Rum River Major Watershed.

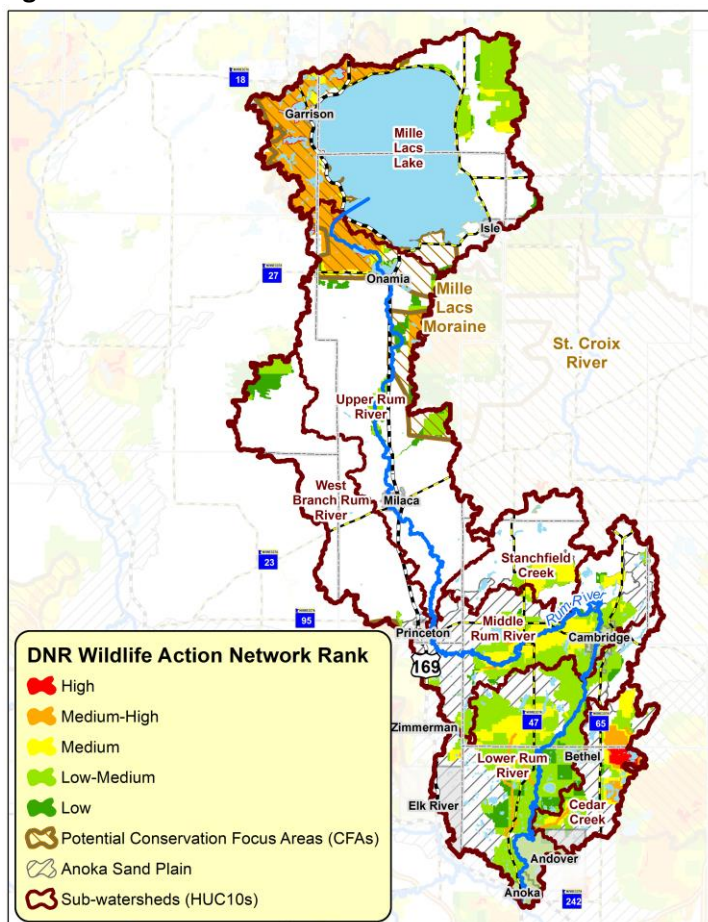
Subwatershed name	Drivers of quality	Drivers of risk
Mille Lacs Lake	High quality lakes, forest habitat	Ag: animals & crops, development, water quality impairments/declining trends
Upper Rum R.	Forest habitat	Ag: animals & crops, development, water quality impairments
W Branch Rum R.	Streams, forest habitat	Ag: animals & crops, development, water quality impairments
Stanchfield Crk.	Surface water, forest habitat	Ag: animals & crops, development, water quality impairments
Middle Rum R.	Surface water, forest habitat	Ag: animals & crops, development, water quality impairments
Cedar Crk.	Surface water, forest habitat	Ag: animals & crops, development, water quality impairments/declining trends
Lower Rum R.	Surface water, forest habitat	Ag: animals & crops, development, water quality impairments/declining trends

Forest Conservation Opportunity Areas

The following list of existing conservation priorities in the Rum River Major Watershed have been identified by various state agencies and environmental organizations. As noted previously, these resources were consulted by the Rum River LSP Planning Team in helping to determine private forest land protection priorities. As this plan is implemented, project partners are encouraged to consult these priority efforts and seek to support their concurrent implementation. For more information on these priorities, please refer to the [Appendix](#).

- Minnesota DNR Wildlife Action Network – DNR EWR (shown below)
- Important Forest Resource Areas (IFRA) – DNR PFM Program, US Forest Service.
- Forests for the Future Analysis – DNR Forestry Forest Legacy Program, US Forest Service.
- Minnesota Biological Survey – DNR EWR.
- Rum River Headwaters Watershed Restoration and Protection Strategies – MPCA.
- 25-Year Lessard-Sams Outdoor Heritage Council (LSOHC) Forest Habitat Vision – MFRC and MFRP.
- Zonation Model – DNR and TNC.

Fig 12. MN DNR Wildlife Action Network.

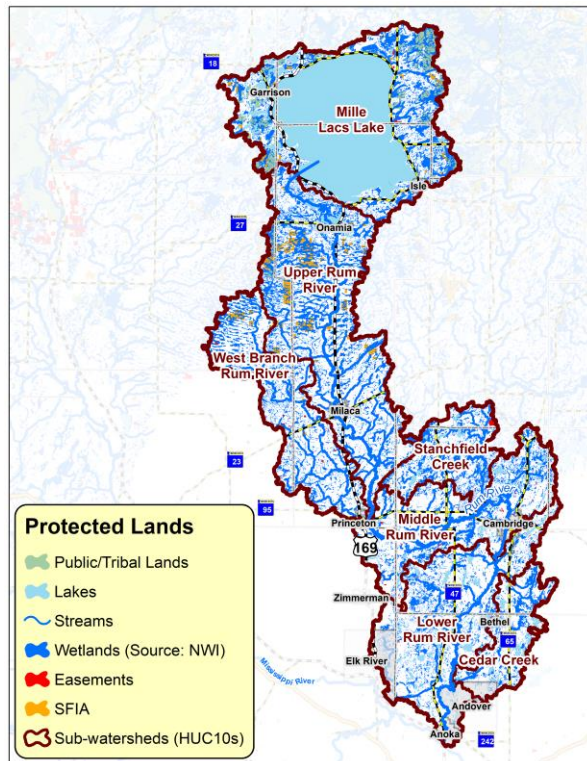


Key Observations and Conclusions

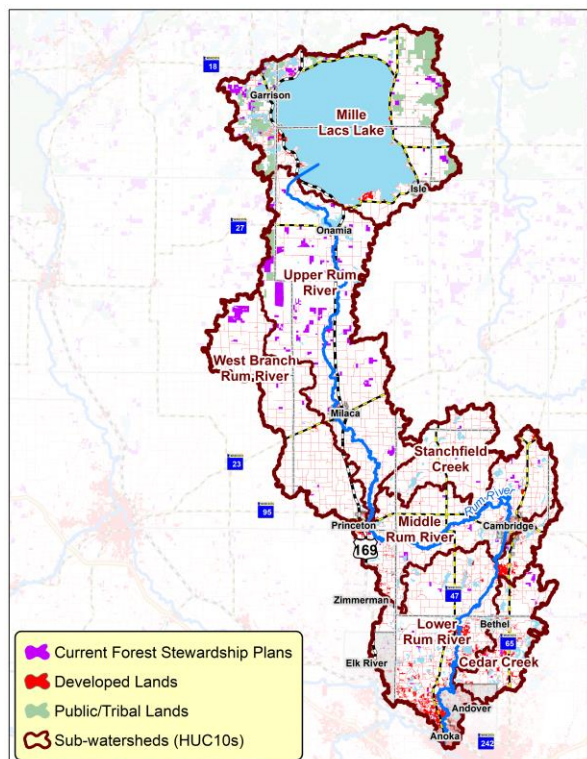
The following key observations and conclusions are based on the information gathered during the planning process for this landscape stewardship plan:

- The Rum River Major Watershed is characteristic of many major watersheds in Minnesota and across the country. Large expanses of forests and wetlands are being lost to agriculture and development, to the detriment of water quality, wildlife habitat, and recreation opportunities. The Rum River Major Watershed is unique in that it is the second most important watershed in the state for providing source water, and so is in special need of protection.
- The expanding metro area to the south of the Rum River Major Watershed has led to urban development overtaking agriculture as the dominant land disturbance in the southern part of the watershed.
- Many excellent conservation tools and programs are already in place, and PFM is the key program through which we can reach out to and serve private landowners. Outreach should be conducted through public/private partnerships with state, local government, and private forest consultants.
- Outreach efforts should be focused on parcels and properties with high RAQ scores, particularly in priority minor watersheds. This gives the best return on investment for available time and money.
- PFM is key in many minor watersheds, although some minors and lakes will be BMP orientated – e.g., reducing nutrient and sediment runoff with practices such as riparian buffers.
- There are no major forest industries located within this watershed, although there are a few larger mills not far from the watershed borders, such as Savanna Pallets in McGregor and Sappi in Cloquet. Inside the watershed are also several smaller-scale sawmills and specialty mills for products such as poles, mulches, and shavings. Forest industries like these provide key markets to utilize forest resources creating jobs and economic growth while supporting opportunities to increase the sustainable management of the forest lands.
- The East Central Landscape Plan, which is currently in development, will provide useful guidance for forest vegetation management based on native plant communities across the 9-county region including this watershed. The Council's site level guidelines provide detailed guidance for forest management activities on a site level. Combined, the landscape and site level guidance provide excellent foundations for service providers in advising private landowners on ways to sustainably manage their woodlands.
- Well managed forests are important for carbon sequestration. Utilizing ecosystem-based forest management will improve carbon sequestration and storage. Furthermore, as concerns over climate change increase and the need for increasing carbon capture is becoming more apparent, interest in the reforestation of open lands on the rise. The number of farms and acres of farmland in Minnesota are generally shrinking, and this represents an opportunity to potentially increase the area of forest land in parts of the watershed where agriculture activities are decreasing.

Forest Land Protection – Current Status



Private Forest Stewardship – Current Status



For more information – see the [Appendix](#) and the LFT Workbook.

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Part 2: The Vision

Mission

To empower teams of service providers to work together with private landowners and land managers in the Rum River Major Watershed to protect and manage working forest lands to increase both the private and public benefits that forests provide.

Vision

In ten years, the Rum River Major Watershed will have:

- Protected Water Resources – landowners and project partners that recognize together healthy working forests are key to protecting good water quality and quantity.
- Healthy and Sustained Forests – forests in the major watershed will be healthy and managed in an ecologically appropriate manner.
- Multiple Uses of Forest Resources – a full range of public and private benefits from timber to tourism will be produced by forests in the watershed.
- Collaborative Management – service providers and partners will work together to achieve the goals set forth in this plan.

Major Watershed Forestry Goals

Goal 1: Increase Forest Land Protection Levels

- Major watershed level (HUC 8): Current level – 44%. Goal – 50%.
- Subwatershed levels (HUC 10): Current levels range from 19% to 78%. Goal – increase protection to an additional 5-10% of the subwatershed area, except for Mille Lacs Lake (Subwd No. 1), which is already greater than 75%.
- Highest priority subwatersheds are Upper Rum River and Cedar Creek.
- Minor watershed levels (HUC 14): Protection goals recommended by the LSP Planning Team. See [Appendix](#) and the LFT Workbook.

Goal 2: Promote Private Forest Stewardship

- Coordinate the work of service providers.
- Target outreach to private landowners.
- Increase number/acres of stewardship plans.
- Promote integration of NPC based forest management goals and strategies developed in the MFRC Landscape Plans.
- Increase number/acres of practice plans and implementation projects.
- Increase targeted investment of NRCS, DNR and Legacy funding based on MWA/RAQ.

Coordinated Roles to Increase Forest Land Protection and Stewardship

Goal 1: Increase Forest Land Protection Levels

- DNR + BWSR: administrative lead.
- SWCDs: local lead, outreach, implement.
- DNR CFM: project coordination, reporting.
- DNR FL: target larger tracts.
- NGOs: bring partner resources, advocate.
- Landowners: they choose.

Goal 2: Promote Private Forest Stewardship

- DNR + BWSR: administrative lead.
- DNR CFM: PFM program coordination.
- SWCDs: local lead, outreach, plans, 1W1P.
- Consulting foresters: plans, timber sales.
- Loggers/vendors: forest management.
- Landowners: Its their land.

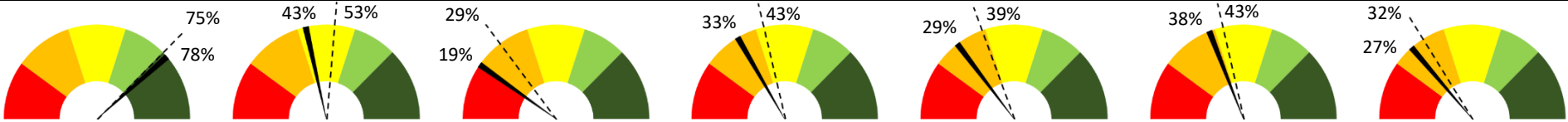
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Goal 1: Forest Land Protection

To draw some conclusions for management priorities and to help compare each subwatershed with the others on each given resource issue, the resulting calculations of the key assessments were placed into a table format. The table below summarizes the results of the calculations made for each subwatershed through the subwatershed assessment process.

	Subwd. No 1 (HUC 701020701) Mille Lacs Lake	Subwd. No 2 (HUC 701020702) Upper Rum River	Subwd. No 3 (HUC 701020703) West Branch Rum River	Subwd. No 4 (HUC 701020704) Stanchfield Creek	Subwd. No 5 (HUC 701020705) Middle Rum River	Subwd. No 6 (HUC 701020706) Cedar Creek	Subwd. No 7 (HUC 701020707) Lower Rum River
Area	266,384 ac	227,951 ac	118,277 ac	61,671 ac	126,743 ac	53,827 ac	158,942 ac
Natural Factors							
Presettlement forest cover	45%	96%	95%	81%	37%	44%	46%
Current forest cover	25%	41%	33%	19%	24%	27%	27%
Lakes	51 lakes; 51%	23 lakes; 2%	5 lakes; 0.1%	15 lakes; 3%	60 lakes; 3%	90 lakes; 8%	206 lakes; 6%
Wetlands	17%	28%	23%	32%	24%	22%	18%
Forest Land Protection Assessment							
Public waters	136,245 ac; 51%	5,978 ac; 3%	776 ac; 1%	1,933 ac; 3%	5,455 ac; 4%	4,866 ac; 9%	10,234 ac; 6%
Public lands	37,450 ac; 14%	32,908 ac; 14%	660 ac; 1%	2,127 ac; 3%	3,119 ac; 2%	6,108 ac; 11%	5,941 ac; 4%
Private wetlands	29,975 ac; 11%	50,257 ac; 22%	19,617 ac; 17%	15,286 ac; 25%	26,903 ac; 21%	9,283 ac; 17%	26,053 ac; 16%
SFIA	2,445 ac; 0.9%	8,968 ac; 3.9%	1,488 ac; 1.3%	40 ac; 0.1%	19 ac; 0.0%	0 ac; 0.0%	0 ac; 0.0%
Easements	491 ac; 0.2%	302 ac; 0.1%	295 ac; 0.2%	667 ac; 1.1%	927 ac; 0.7%	105 ac; 0.2%	424 ac; 0.3%
Total protected area	206,606 ac; 78%	98,412 ac; 43%	22,835 ac; 19%	20,054 ac; 33%	36,422 ac; 29%	20,404 ac; 38%	42,853 ac; 27%
Protection priority	Low	High	Low	Medium	Medium	High	Medium
Forest Land Protection Cost Analysis							
Protection goal	75%; 0 ac to goal	53%; 22,402 ac to goal	29%; 11,465 ac to goal	43%; 6,465 ac to goal	39%; 13,007 ac to goal	43%; 2,741 ac to goal	32%; 8,008 ac to goal
Potential to protect	37,703 ac; 14%	89,087 ac; 39%	58,621 ac; 50%	16,619 ac; 27%	32,263 ac; 25%	8,700 ac; 16%	37,870 ac; 24%
Average land value	\$1,513/ac	\$1,517/ac	\$1,493/ac	\$2,316/ac	\$3,021/ac	\$3,983/ac	\$4,115/ac
Protection cost*	\$0	\$24,353,241	\$12,380,873	\$8,577,251	\$20,009,261	\$5,007,908	\$14,947,234
Forest Land Protection Priorities							
Quality Protection Factors							
Cisco lakes	3 lakes; 1%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%
Trout lakes	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%
Lakes of biodiversity significance (outstanding & high)	7 lakes; 49%	3 lakes; 1%	0 lakes; 0%	1 lake; 0%	1 lake; 0%	1 lake; 1%	4 lakes; 0%
Priority shallow lakes	3 lakes; 0%	5 lakes; 1%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	1 lake; 1%	0 lakes; 0%
Priority wild rice lakes	6 lakes; 1%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%	0 lakes; 0%
Trout streams	4 mi	0 mi	0 mi	0 mi	0 mi	0 mi	0 mi
FFF mean composite score	84.6	79.2	60.9	60.5	65.9	73.7	64.0
Terrestrial biodiversity (MBS) (outstanding and high)	44,633 ac; 17%	25,816 ac; 11%	1,767 ac; 1%	2,977 ac; 5%	5,149 ac; 4%	9,293 ac; 17%	3,580 ac; 2%
Wildlife Action Network (high & medium-high)	57,689 ac; 22%	21,874 ac; 10%	0 ac; 0%	116 ac; 0%	4,154 ac; 3%	8,940 ac; 17%	5,194 ac; 3%
Risk Management Factors							
Lake phosphorous sensitivity (highest & higher)	12 lakes; 133,206 ac	0 lakes; 0 ac	0 lakes; 0 ac	2 lakes; 401 ac	4 lakes; 719 ac	0 lakes; 0 ac	7 lakes; 1,662 ac
Water quality trend (declining)	0 lakes; 0 ac	0 lakes; 0 ac	0 lakes; 0 ac	1 lake; 183 ac	0 lakes; 0 ac	0 lakes; 0 ac	1 lake; 517 ac
Land use disturbance	30,304 ac; 11%	71,140 ac; 31%	59,354 ac; 50%	27,005 ac; 44%	57,218 ac; 45%	21,868 ac; 41%	72,701 ac; 46%

Protection Levels and Goals[†]



*Protection cost assumes 50% conservation easement and 50% SFIA.
[†]Solid lines represent current level of protection, dashed line is the goal.

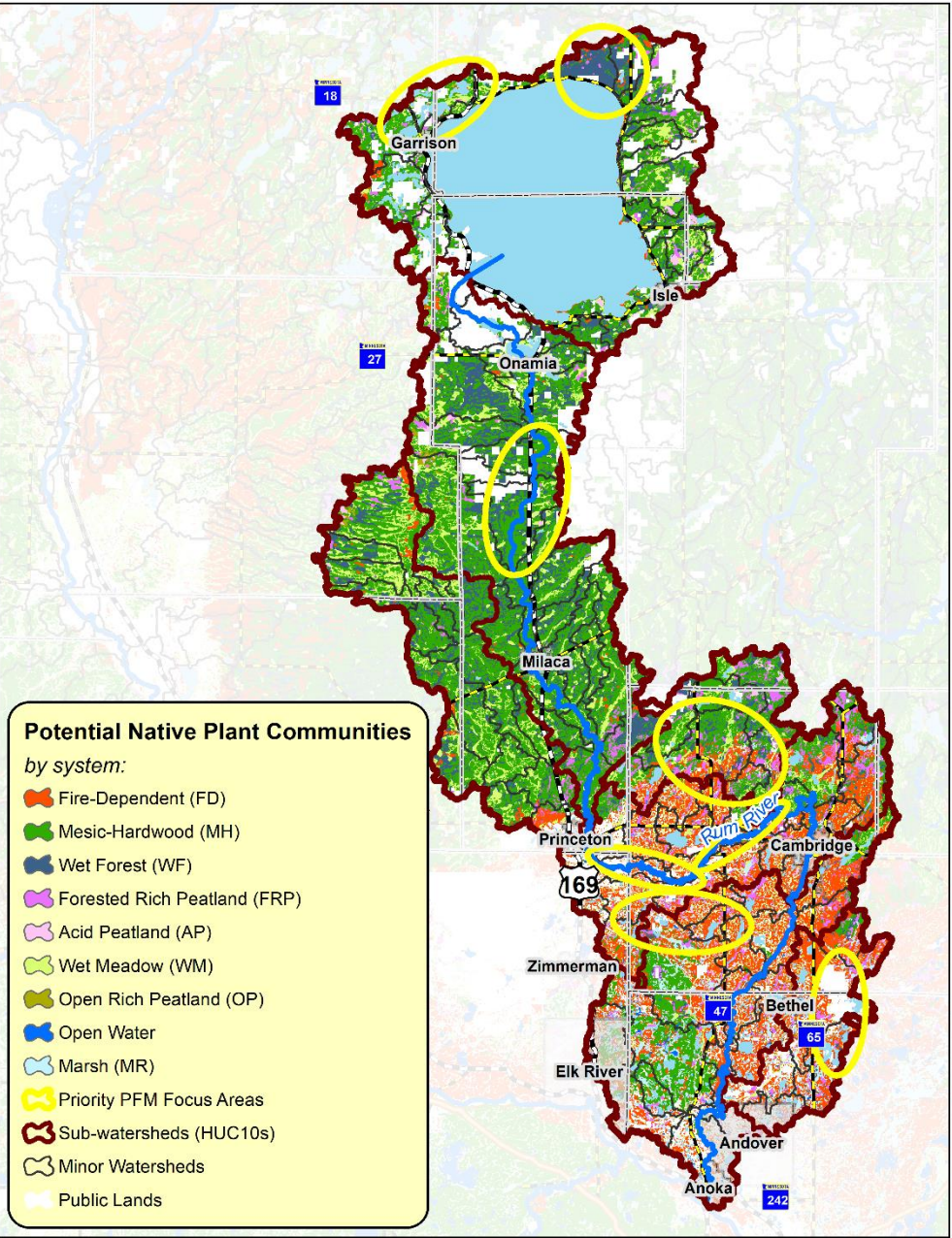
Goal 2: Promote Private Forest Stewardship

The second major goal of this Landscape Stewardship Plan is to promote private forest stewardship and consideration of native plant communities (NPCs) in management activities. The map on the right displays the potential NPC system for private lands in the Rum River Major Watershed. The yellow circles indicate priorities for forest land management identified by the Rum River Forestry Technical Committee.

It is important to note that this map displays the potential NPC of private lands only, and it includes lands that are not currently forested. This map is a vision for all private lands, including nonforested lands, because it reflects what the private landscape can potentially be if the land is managed in accordance with its biological potential.

The tables on the right side of this page compares Public Land Survey (PLS; ca. 1846-1908 AD) and Forest Inventory and Analysis (FIA; ca. 1990 AD) growth-stage data for common NPC classes in the Rum River. These tables are from the Silviculture Interpretations developed by MN DNR Division of Forestry, Ecological Land Classification. Additional information on NPCs and their management can be found in the [Appendix](#) and the [East Central Landscape Ecological Pathway](#).

The goals listed below for each subwatershed are for increased forest management through stewardship plans and acres as well as for cost share practices over the next ten years.



Growth Stage and Composition for Common Private Land NPCs

FDs37: Southern Dry-Mesic Oak (Maple) Woodland

Dominant Trees	Forest Growth Stages in Years				
	0 -75		~75	>75	
	Young			Mature	
Bur Oak	57%	7%		55%	12%
Red Oak	12%	6%		10%	14%
Quaking Aspen (incl. Bigtooth)	6%	57%		3%	27%
Northern Pin Oak	6%	0%		—	1%
Black Cherry	1%	2%		—	2%
Basswood	2%	8%	/	2%	14%
American Elm (incl. Slippery)	3%	3%		5%	5%
White Oak	8%	0%		25%	1%
Red Maple	0%	3%		—	3%
Paper Birch	1%	7%		—	12%
Ironwood	0%	3%		0%	5%
Green Ash	1%	0%		1%	1%
Miscellaneous	3%	4%		0%	3%
Percent of Community in Growth Stage in Presettlement and Modern Landscapes	79%	66%		21%	34%

Natural growth-stage analysis and landscape summary of historic conditions is based upon the analysis of 2,620 Public Land Survey records for section and quarter-section corners. Comparable modern conditions were summarized from 1,624 FIA subplots that were modeled to be FDs37 sites.

MHc36: Central Hardwood Forest (Eastern)

Dominant Trees	Forest Growth Stages in Years				
	0 - 35		35 - 95	> 95	
	Young		T1	Mature	
Red Oak	50%	8%		9%	14%
Quaking Aspen (incl. Bigtooth)	10%	18%		1%	3%
Paper Birch	5%	4%		2%	4%
Basswood	14%	10%		18%	20%
American Elm	6%	5%		10%	3%
Ironwood	4%	12%		8%	7%
Bur Oak (incl. White)	—	1%		5%	6%
White Pine	1%	0%		3%	0%
Sugar Maple	4%	30%		36%	33%
Red Maple	—	3%		—	3%
Green Ash (incl. Black & White)	3%	4%		4%	3%
Miscellaneous	3%	5%		4%	4%
Percent of Community in Growth Stage in Presettlement and Modern Landscapes	7%	7%	75%	71%	18%

Natural growth-stage analysis and landscape summary of historic conditions is based upon the analysis of 5,368 Public Land Survey records for section and quarter-section corners. Comparable modern conditions were summarized from 2,107 FIA subplots that were modeled to be MHc36 sites.

Forest Management Goals

Subwd 1 – Mille Lacs Lake 35% private; 65% public 1,594 parcels > 20 ac 73,681 ac > 20 ac 42 fsps; 5,665 ac 10 Yr PFM Goals: 30 fsps; 4,780 ac	Subwd 2 – Upper Rum River 83% private; 17% public 2,725 parcels > 20 ac 166,867 ac > 20 ac 104 fsps; 22,201 ac 10 Yr PFM Goals: 244 fsps; 38,397 ac	Subwd 3 – West Branch Rum 99% private; 1% public 1,910 parcels > 20 ac 104,489 ac > 20 ac 26 fsps; 4,362 ac 10 Yr PFM Goals: 91 fsps; 14,353 ac	Subwd 4 – Stanchfield Creek 93% private; 7% public 925 parcels > 20 ac 49,483 ac > 20 ac 11 fsps; 685 ac 10 Yr PFM Goals: 48 fsps; 7,544 ac	Subwd 5 – Middle Rum River 93% private; 7% public 1,775 parcels > 20 ac 80,184 ac > 20 ac 25 fsps; 1,788 ac 10 Yr PFM Goals: 92 fsps; 14,459 ac	Subwd 6 – Cedar Creek 80% private; 20% public 555 parcels > 20 ac 21,983 ac > 20 ac 7 fsps; 737 ac 10 Yr PFM Goals: 19 fsps; 2,983 ac	Subwd 7 – Lower Rum River 90% private; 10% public 1,785 parcels > 20 ac 76,004 ac > 20 ac 16 fsps; 912 ac 10 Yr PFM Goals: 55 fsps; 8,684 ac
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Vision Summary

The following points summarize the vision and the two major goals for the Rum River Major Watershed.

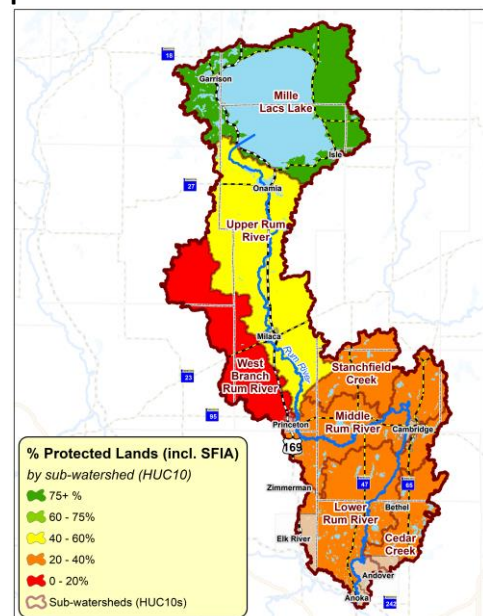
- Private lands dominate the vast majority of the Rum River Major Watershed, except in the Mille Lacs Lake Subwatershed. This subwatershed has a moderate amount of public land and very high levels of public waters, and so is beyond the 75% protection goal as stated in goal 1 at the HUC 10 level. In this subwatershed, priorities for private forest management drop down to the minor watershed or HUC 14 level. The West Branch Rum River Subwatershed is a lower priority for forest management because it contains so much risk from agriculture and low levels of protection that spending a large amount of public dollars in this subwatershed would not yield a good return on investment.
- The Upper Rum River and Cedar Creek subwatersheds were determined to be high priorities for forest land protection because they both have a moderate amount of risk, but also relatively high indicators of quality (e.g., lakes of biological significance, high terrestrial biodiversity scores, etc.).
- One of the aims of Goal 2 (Promote Private Forest Stewardship) is to at a minimum have an updated forest stewardship plan (FSP) on every acre that is or will be protected by a conservation easement or SFIA. Consequently, larger areas of existing conservation easements or SFIA and higher forest land protection goals equate to higher FSP goals in this plan.
- Across the Rum River Major Watershed the planning team selected priority areas (see map with Goal 2 narrative and lists in the following Subwatershed Action Plans) to focus forest land protection / stewardship efforts and identified specific minor watersheds to concentrate landowner outreach efforts.

Subwatershed Guidance

The purpose of the following seven narratives is to provide service providers and resource managers with a detailed description of subwatershed-level conditions and recommendations.

These ‘subwatershed action plans’ are intended to help service providers and managers identify and prioritize specific areas in the Rum River Major Watershed so they can more effectively work together to implement activities that are likely to improve water quality, increase forest management, and achieve other public and private benefits.

Fig 13. Subwatershed (HUC10) protection levels.



Subwatershed No. 1 Mille Lacs Lake (HUC 701020701)

Goal 1: Forest Land Protection Guidance

- Moderate amount of forest cover, 25%.
- Headwaters to the entire major watershed.
- Home to Mille Lacs Lake, one of the most famous lakes in the country. Since the lake covers a large portion of the subwatershed, the Local Forest Technical Team should focus on priorities at the HUC 14 or minor watershed level.
- Has many lakes of outstanding or high biodiversity significance, priority shallow lakes, and priority wild rice lakes.
- High terrestrial biodiversity and Wildlife Action Network scores.
- At risk from lakes with high phosphorous sensitivity.
- Low priority for forest land protection. Subwatershed is already highly protected.
- Forest land protection goal is 75%, current protection at the HUC 10 level is 78% - goal met! The next focus to drill down to is the minor watershed level described below.

Goal 2: Forest Stewardship Guidance

- In this subwatershed the area to the west of Mille Lacs Lake is the Mille Lacs Moraine, which likely supports forests of mesic hardwoods.
- The area to the west of Mille Lacs Lake is a combination of morainal and till plain deposits, outwash, and peat formations. Mesic hardwoods are the most likely NPC system to occur on all the deposits except the peat formations. Wet forests and wet meadows may be found on the peat formations and other lowland areas.
- The current forest cover is heavily deciduous with a minor conifer component.
- Refer to the Mesic Hardwood and Wet Forest vegetation management goals in the 2nd Generation East Central Landscape Management Plan.
- Forest stewardship goal – 30 plans, 4,780 acres.

Priority Minor Watersheds

- Priority minor watersheds for protection are 21001, 21007, and 21058.
- In the other minor watersheds, the forest land protection and stewardship plan goals are met! Work with interested landowners with current PFM program services.

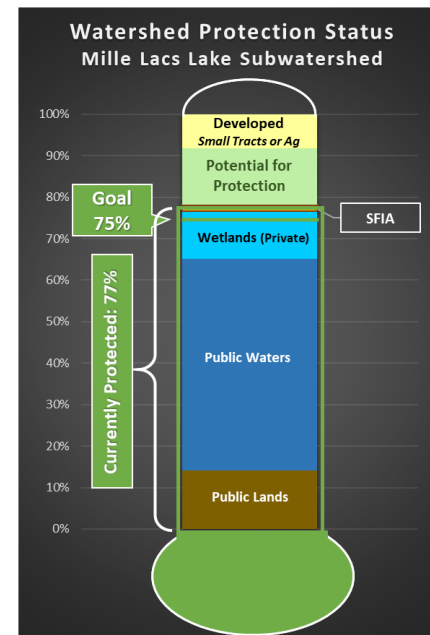


Table 4. Minor watershed info.

Minor wshd #	Acres	Current % protected	Protection goal %
21001	7,025	65.1%	75%
21002	164,789	88.3%	75%
21003	6,367	66.4%	66%
21004	4,932	50.0%	60%
21005	4,896	40.9%	60%
21006	4,650	46.1%	60%
21007	6,660	55.7%	75%
21008	6,593	56.0%	60%
21009	10,870	78.3%	75%
21010	10,886	50.0%	60%
21011	7,725	83.4%	75%
21017	3,352	42.2%	60%
21058	11,294	49.7%	75%
21059	11,471	59.9%	75%
21103	4,876	70.5%	75%

Subwatershed No. 2 Upper Rum River (HUC 701020702)

Goal 1: Forest Land Protection Guidance

- Moderate amount of forest cover, 41%.
- Largely stream based watershed with relatively few lakes.
- At risk in its lower half from low levels of protection, some development, and high amounts of agriculture.
- High priority for forest land protection. Focus protection efforts on the Rum River corridor, especially the area around the Rum River State Forest and nearby Wildlife Management Areas.
- Forest land protection goal is 53%, current protection is 43%.

Goal 2: Forest Stewardship Guidance

- The primary landforms in the Upper Rum River subwatershed are till plains and a small portion of the Mille Lacs Moraine near its northern border. Also present in the northern half of the subwatershed are east-west orientated drumlins, between which are peat formations.
- The potential NPCS in this subwatershed are a variegated mixture of mesic hardwood forests in the upland areas and wet forest or wet meadows in the lowlands.
- The current forest cover is heavily deciduous with a minor conifer component. Overall cover is much greater in the northern half of the subwatershed than the southern half.
- Refer to the Mesic Hardwood and Wet Forest vegetation management goals in the 2nd Generation East Central Landscape Management Plan.
- Forest stewardship goal – 244 plans, 38,397 acres.

Priority Minor Watersheds

- Priority minor watersheds for protection are 21019, 21021, and 21027.

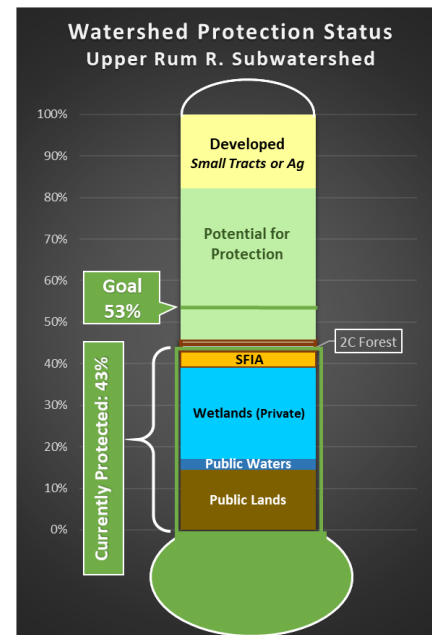


Table 5. Minor watershed info.

Minor wshd #	Acres	Current % protected	Protection goal %
21012	8,933	60.5%	75%
21013	20,610	66.1%	75%
21014	9,837	95.1%	75%
21015	7,789	59.1%	75%
21016	3,868	52.2%	75%
21018	15,633	51.3%	75%
21019	11,113	47.0%	70%
21020	3,876	80.0%	75%
21021	15,166	42.9%	70%
21022	27,516	42.8%	75%
21025	7,615	20.6%	45%
21026	4,807	12.4%	45%
21027	5,009	36.7%	60%
21028	10,628	39.6%	65%
21029	5,312	25.2%	35%
21030	9,314	20.4%	25%
21031	4,653	15.7%	35%
21032	15,961	27.4%	50%
21033	6,773	18.8%	35%
21034	10,605	22.8%	35%
21043	4,496	16.8%	40%
21049	6,640	16.7%	30%
21050	11,799	59.1%	75%

Subwatershed No. 3 West Branch Rum River (HUC 701020703)

Goal 1: Forest Land Protection Guidance

- Moderate amount of forest cover, 33%.
- Largely stream based watershed with relatively few lakes.
- Has the most land use disturbance (i.e., agriculture and development) of any subwatershed in the major watershed, about 50%.
- At risk from low levels of protection, some development, high amounts of agriculture, and stream impairments.
- Low priority for forest land protection.
- Forest land protection goal is 29%, current protection is 19%.

Goal 2: Forest Stewardship Guidance

- This subwatershed has large areas of till plains, but also some outwash and morainal deposits in its northern half. In its northern half are east-west orientated drumlins, which are part of the same formation as the drumlins in the Upper Rum River Subwatershed.
- Nearly all the upland areas in this subwatershed have the potential to support mesic hardwood forests, but little potential for fire dependent forests. The potential lowland NPCs are mainly wet forest and wet meadows in the area between the drumlins and other low spots.
- The current forest cover is heavily deciduous with a minor conifer component. Overall forest cover is greater in the northern half of the subwatershed than the southern half.
- Refer to the Mesic Hardwood and Wet Forest vegetation management goals in the 2nd Generation East Central Landscape Management Plan.
- Forest stewardship goal – 91 plans, 14,353 acres.

Priority Minor Watersheds

- Priority minor watersheds for protection are 7050, 7052, 7053, 7061, 7062, 7083, and 7084.

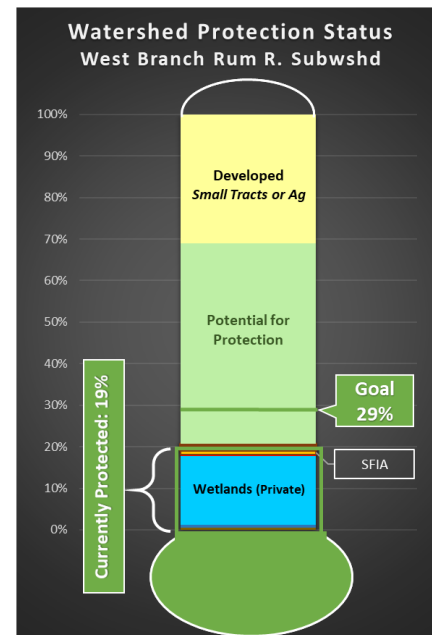


Table 6. Minor watershed info.

Minor wshd #	Acres	Current % protected	Protection goal %
21023	9,842	22.5%	60%
21024	2,769	35.5%	75%
21040	4,958	19.1%	35%
21041	5,237	20.2%	35%
21042	7,068	16.4%	40%
21044	5,308	19.0%	25%
21045	4,920	20.6%	45%
21046	9,012	26.8%	55%
21047	13,973	21.2%	35%
21048	13,064	17.3%	40%
21053	5,153	23.2%	65%
21054	4,962	21.5%	40%
21055	20,499	37.7%	65%
21056	5,178	36.2%	50%
21057	6,333	30.2%	50%

Subwatershed No. 4 Stanchfield Creek (HUC 701020704)

Goal 1: Forest Land Protection Guidance

- Low amount of forest cover, 19%.
- Abundant wetlands that cover 32% of the subwatershed.
- Has high land use disturbance, 44% of the watershed has been converted to agriculture or urban development.
- At risk from low levels of protection, high amounts of agriculture, and stream and lake impairments.
- Medium priority for forest land protection, focus protection efforts on parcels with high RAQ scores in the priority minor watersheds (Table 7).
- Forest land protection goal is 43%, current protection is 33%.

Goal 2: Forest Stewardship Guidance

- The main landforms are till plains and former lake-beds with defined channels of ice-contact deposits running through them.
- This subwatershed is partially split between the Mille Lacs Uplands ECS Subsection and the Anoka Sand Plains ECS Subsection, and along the split is a highly noticeable difference in the potential NPCs. In the Mille Lacs Uplands mesic hardwood forests are the most common potential NPC in the upland areas, whereas in the Anoka Sand Plains the uplands are more likely to support fire-dependent forests.
- The current forest cover is heavily deciduous with a minor conifer component. Overall forest cover is greater in the eastern half of the subwatershed than the western half.
- Refer to the Mesic Hardwood and Forested Rich Peatland vegetation management goals in the 2nd Generation East Central Landscape Management Plan.
- Forest stewardship goal – 48 plans, 7,544 acres.

Priority Minor Watersheds

- Priority minor watersheds for protection are 21060, 21062, 21066, 21067, and 21073.

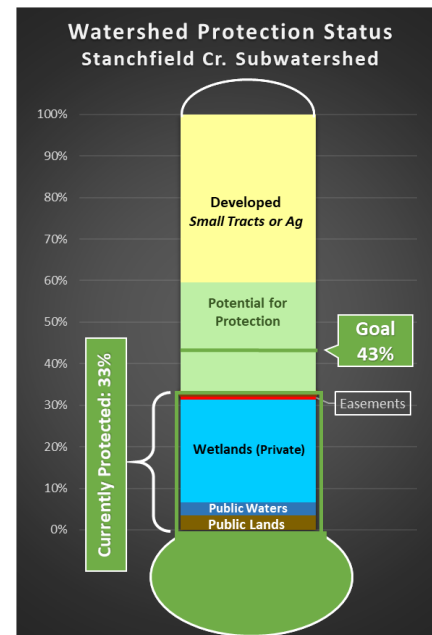


Table 7. Minor watershed info

Minor wshd #	Acres	Current % protected	Protection goal %
21035	6,669	41.0%	45%
21060	7,129	52.7%	55%
21061	7,242	40.5%	50%
21062	11,176	34.1%	45%
21066	17,130	36.1%	40%
21067	8,913	37.0%	40%
21073	3,412	32.4%	35%

Subwatershed No. 5 Middle Rum River (HUC 701020705)

Goal 1: Forest Land Protection Guidance

- Low amount of forest cover, 24%.
- Has high land use disturbance, 45% of the watershed has been converted to agriculture or urban development.
- At risk from low levels of protection, high amounts of agriculture and development, and lake impairments.
- Medium priority for forest land protection, focus protection efforts on the Rum River corridor.
- Forest land protection goal is 39%, current protection is 29%.

Goal 2: Forest Stewardship Guidance

- This subwatershed is largely covered by lacustrine deposit of fine sand. The most likely NPCs that can be supported in these conditions are fire-dependent forests and upland prairie.
- The current forest cover is mainly deciduous with a moderate conifer component from pine plantations.
- Refer to the Fire-Dependent vegetation management goals in the 2nd Generation East Central Landscape Management Plan.
- Forest stewardship goal – 92 plans, 14,459 acres.

Priority Minor Watersheds

- Priority minor watersheds for protection are 21038, 21051, 21077, 21078, 21080, 21081, and 21092.

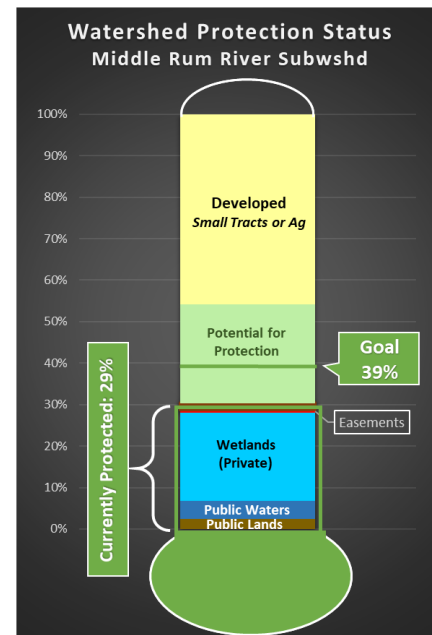


Table 8. Minor watershed info.

Minor wshd #	Acres	Current % protected	Protection goal %
21036	7,623	21.5%	35%
21037	5,502	20.2%	25%
21038	6,387	31.2%	40%
21039	6,068	31.8%	35%
21051	7,737	33.0%	35%
21063	7,784	38.6%	45%
21068	10,870	45.5%	55%
21069	11,295	34.8%	45%
21071	11,859	27.0%	30%
21072	4,017	38.0%	40%
21074	3,820	24.8%	25%
21075	4,775	25.0%	25%
21076	7,376	50.0%	52%
21077	6,594	32.4%	40%
21078	4,362	40.4%	45%
21079	4,618	33.5%	35%
21080	6,163	31.1%	35%
21081	2,698	43.5%	45%
21092	7,193	19.2%	35%

Subwatershed No. 6 Cedar Creek (HUC 701020706)

Goal 1: Forest Land Protection Guidance

- Moderate amount of forest cover, 27%.
- Has lots of small lakes, including one lake of outstanding biodiversity significance.
- High terrestrial biodiversity and Wildlife Action Network scores.
- Has high land use disturbance, 41% of the watershed has been converted to agriculture or urban development.
- At risk from low levels of protection, high amounts of development, and agriculture.
- High priority for forest land protection, focus protection efforts on parcels with high RAQ scores in the priority minor watersheds (Table 9).
- Forest land protection goal is 43%, current protection is 38%.

Goal 2: Forest Stewardship Guidance

- The Cedar Creek Subwatershed is similar to the Middle Rum River subwatershed in that it is covered by a lacustrine deposit of sand and has the potential to support both fire-dependent forests and upland prairie.
- The current forest cover is heavily deciduous with a minor conifer component.
- Refer to the Fire-Dependent vegetation management goals in the 2nd Generation East Central Landscape Management Plan.
- Forest stewardship goal – 19 plans, 2,983 acres.

Priority Minor Watersheds

- Priority minor watersheds for protection are 21089, 21098, 21099, 21102.

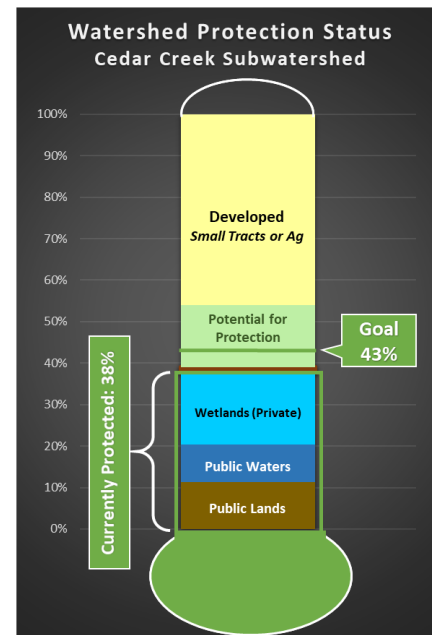


Table 9. Minor watershed info.

Minor wshd #	Acres	Current % protected	Protection goal %
21089	23,646	31.5%	35%
21097	8,743	36.9%	45%
21098	10,516	51.9%	60%
21099	5,350	42.4%	50%
21102	5,571	31.5%	35%

Subwatershed No. 7 Lower Rum River (HUC 701020707)

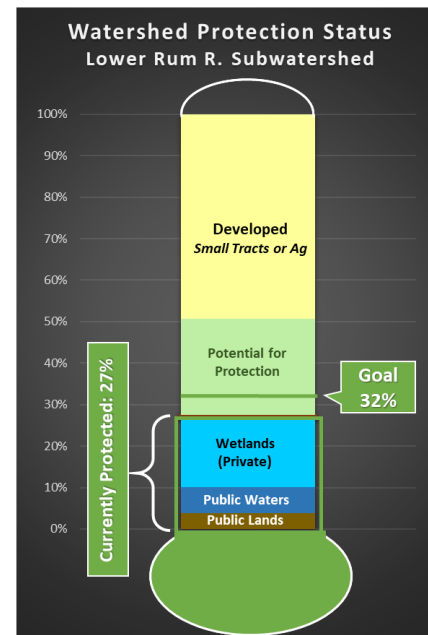
Goal 1: Forest Land Protection Guidance

- Moderate amount of forest cover, 27%.
- Has lots of small lakes, including four lakes of outstanding or high biodiversity significance.
- Has high land use disturbance, 46% of the watershed has been converted to agriculture or urban development.
- At risk from low levels of protection, high amounts of development, agriculture, and stream and lake impairments.
- Medium priority for forest land protection, focus protection efforts on riparian parcels in the northern part of the subwatershed.
- Forest land protection goal is 32%, current protection is 27%.



Goal 2: Forest Stewardship Guidance

- This subwatershed is covered by both morainal and lacustrine deposits. The moraine has the potential to support mesic hardwood forests, while fire-dependent forests and upland prairie may naturally occur on the lacustrine deposits.
- The current forest cover is heavily deciduous with a minor conifer component. Overall forest cover is scattered, although a few sizeable blocks of relatively intact forests do exist in this subwatershed.
- Refer to the Fire-Dependent and Mesic Hardwood vegetation management goals in the 2nd Generation East Central Landscape Management Plan.
- Forest stewardship goal – 55 plans, 8,684 acres.



Priority Minor Watersheds

- Priority minor watersheds for protection are 21084, 21085, and 21091.

Table 10. Minor watershed info.

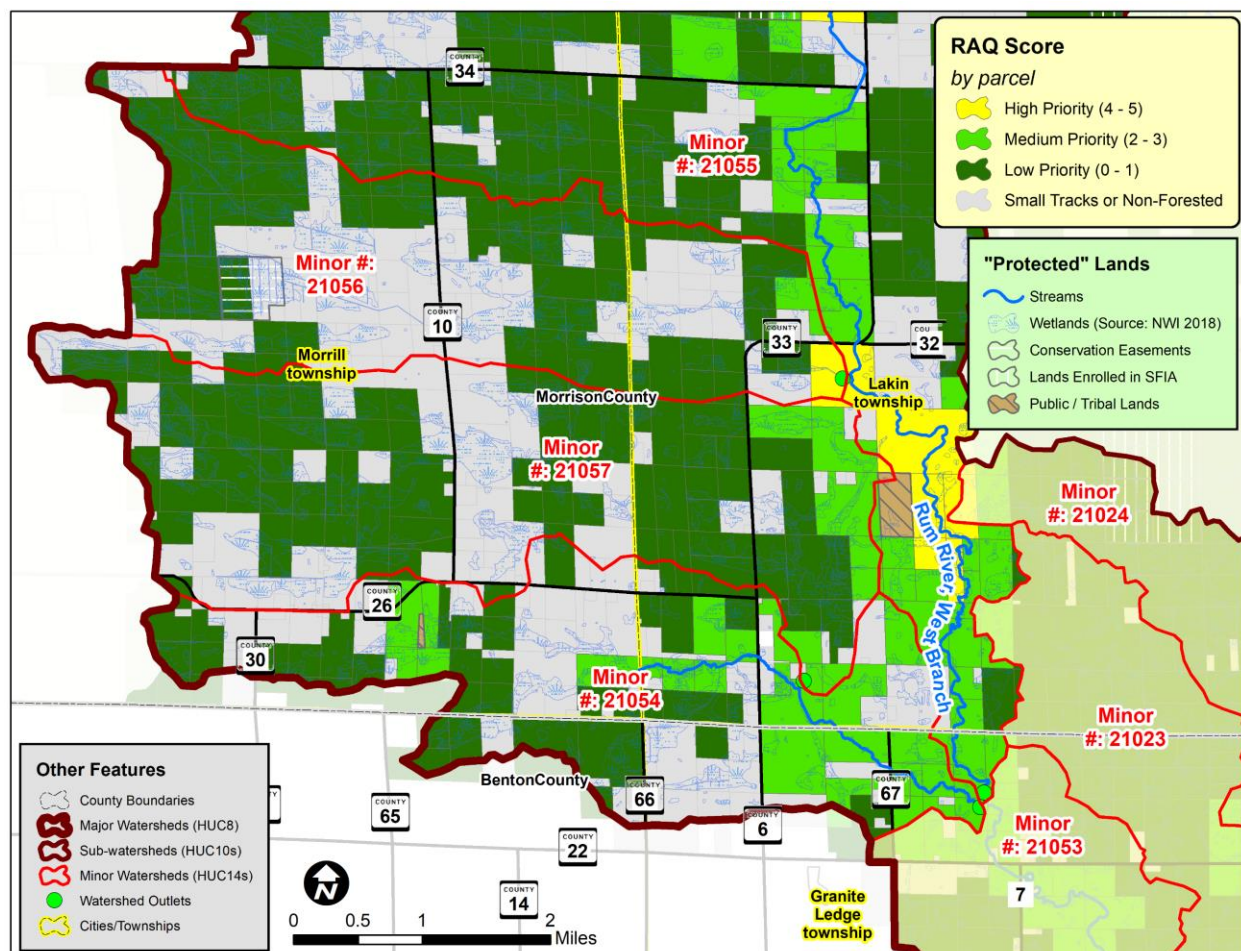
Minor wshd #	Acres	Current % protected	Protection goal %
21052	18,994	24.5%	30%
21070	12,526	32.0%	40%
21082	4,644	25.4%	25%
21083	5,061	31.3%	35%
21084	3,824	41.9%	55%
21085	5,840	29.7%	40%
21086	7,682	27.9%	35%
21087	6,771	28.4%	37%
21088	4,370	59.8%	65%
21090	5,016	19.5%	20%
21091	25,928	36.6%	45%
21093	24,162	36.7%	45%
21094	4,076	42.6%	45%
21095	3,591	23.3%	45%
21096	8,429	44.4%	50%
21100	4,551	27.0%	30%
21101	13,478	34.3%	34%

Minor Watershed Methodology and RAQ Scoring

The overall Rum River Major Watershed has a protection goal of 50%. Each of its nine subwatersheds have their own protection goals, which range from 29% in the West Branch Rum River Subwatershed to 75% in the Mille Lacs Lake Subwatershed. The subwatersheds have 6 to 22 minor watersheds, and each minor also has a protection goal that was determined by the Rum River LSP Planning Team based on their best professional judgement on what is achievable for that minor.

To meet these goals local service providers will need to identify and target individual parcels and landowners. To assist in this effort, a Minor Watershed Assessment (MWA) was developed for every minor watershed in the Rum River Major Watershed. As a part of this assessment every minor watershed has a map showing its potential for protection, parcel and landowner RAQ scores (Riparian – Adjacency – Quality), and tables of information about individual parcels and landowners. An example of one of these resources is Fig 14, which shows the RAQ scores for parcels across a group of minor watersheds in the West Branch Rum River Subwatershed. We can see on this map that the parcels with the highest RAQ scores are along the Rum River, West Branch in Lakin Township. Protecting these parcels would provide the greatest return on investment. MWA maps and tables are provided in the LFT Workbook. The MWA priorities and RAQ scoring can also useful information to support local land use officials when developing their comprehensive plans and guidance on land use and public infrastructure decisions.

Fig 14. RAQ scores for parcels in minor watersheds #21054-21057.



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Part 3: Making it Happen

The key to successfully implementing any plan is coordination. Coordination is the critical, yet far too often, invisible process of organizing the ongoing work to be done in landscape management. Successful implementation requires proactive and purposeful coordination. This part of the plan focuses outlines how funding and staff resources will be coordinated to implement the vision and goals in this Plan.

Coordination Strategies

This plan calls for protecting 64,088 acres of private forest land and the preparation of 91,201 acres of forest stewardship plans across the 1 million-acre Rum River Major Watershed over the next ten years. Implementing these goals will require significant collaborative efforts over this timeframe.

To be certain, these are “push” goals. But they are doable, especially given growing funding levels for protection from state Legacy funds through Clean Water and Outdoor Heritage Funds. In addition, there are growing capacity funds for private forest management that service providers are securing including funding from the US Forest Service S&PF through the LSR grants, DNR cost share and SFIA programs, and local capacity funds to soil and water conservation districts through the BWSR. These funds are foundational to supporting this dynamic private forest management paradigm.

The team of service providers working in this watershed need to pre-think through and commit to a series of coordination strategies. The following outline provides partners in the Rum River Major Watershed an initial pathway to greater success implementation through better coordination:

- Coordination Strategy # 1 – Reconvene, Support and Sustain the Local Forestry Technical Team.
- Coordination Strategy # 2 – Confirm the Project Coordinator.
- Coordination Strategy # 3 – Clarify Partner Roles in Serving Private Landowners.
- Coordination Strategy # 4 – Coordinate Resources for Implementation.
- Coordination Strategy # 5 – Support Accomplishment Reporting.
- Coordination Strategy # 6 – Recommendations to Local and State Agencies and Programs.



Coordination Strategy # 1 – Reconvene the Local Forestry Technical Team (LFT)

The primary coordination strategy for this plan is to periodically convene a core group of partners – resource professionals, service providers, local and state officials, environmental groups, tribal representatives, and landowners – into a local team to oversee the coordination and implementation efforts over the next ten years. The team should meet on a regular basis to 1) review and determine service delivery priorities and workloads, 2) collaborate on developing proposals for funding opportunities, 3) coordinate training and landowner outreach efforts, 4) support accomplishment reporting, and 5) ensure clear communications on the status of the project. The LFT Workbook (to be distributed to the LFT when it reconvenes) provides additional guidance to support the team’s coordination efforts.

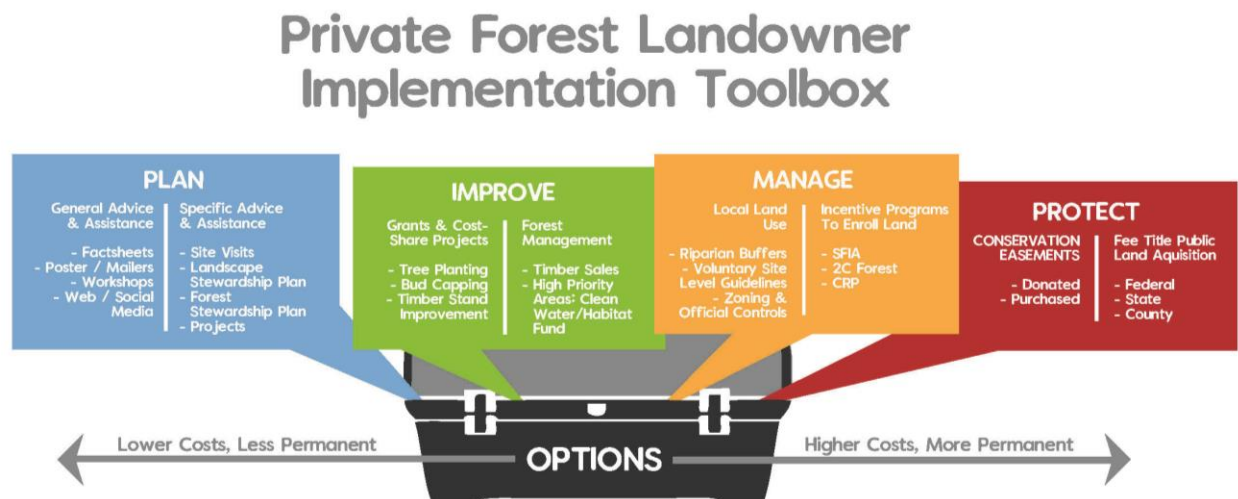
Coordination Strategy # 2 – Confirm the Project Coordinator

To support the ongoing coordination work by the Local Forestry Technical Team, it is essential that one person serve as the point of contact to manage the overall coordination process. This should be a paid position and could be administered by one of the three SWCDs. Seed moneys and capacity funding are available to support this position.

Coordination Strategy # 3 – Clarify Partner Roles in Serving Private Landowners

PFM Implementation Toolbox

There are four primary approaches to delivering services to private landowners. The “PFM implementation toolbox” shown below illustrates these approaches and the full suite of options available to serving private landowners. Promoting the full range of options to private landowners helps to improve the economic, ecological, and social benefits they can receive from their woodlands. As the diagram below suggests, services provided to landowners on the left tend to be less costly but are also less permanent and generally have less societal benefits. In contrast, tools further to the right involve options that are more costly (to the public) but have a greater degree of permanence and produce more recognizable benefits to society. Local forestry technical teams are encouraged to define roles and organize their implementation efforts through these four approaches and corresponding array of tools.



Forestry professionals including approved Minnesota Forest Stewardship Plan writers are available to help private forest landowners obtain forest stewardship plans for their property and implement parts of the toolbox. These professionals are typically from the DNR, local SWCD and NRCS offices, forest industries, or are private consultants. An estimated 16 approved forestry professionals/plan writers have service areas in and near the Rum River Major Watershed. Their contact information can be found at <http://www.myminnisotawoods.umn.edu/minnesota-stewardship-plan-preparers/>.

Clarifying Roles, Growing Commitment

Partners and stakeholders working in the watershed are all encouraged to serve on the Local Forestry Technical Team (LFT). The team should include DNR Forestry, SWCDs, consulting foresters, tribal representatives, environmental organizations, industry foresters, loggers and vendors, landowners, local officials, and other local groups.

The PFM implementation toolbox displays many of the choices that can be used to promote private forest stewardship. However, not all service providers in this watershed have the resources to implement all the options. To efficiently implement the full toolbox, partners on the forestry technical teams are encouraged to define the roles and responsibilities of each partner using the diagram below.

	#1 General advice & <u>assistance</u>	#2 Specific advice & <u>assistance</u>	#3 Grants / cost-share <u>project</u>	#4 Forest <u>management</u>	#5 Land use <u>controls</u>	#6 Incentive <u>programs</u>	#7 Conservation <u>easements</u>	#8 Fee title public land <u>acquisition</u>
<u>Mission and roles</u> • Primary • Supporting								
<u>Programs/projects</u> • Geographic areas of interest • Topical interests								
<u>Staffing/equipment</u> • FTE's, expertise • Equipment • Other resources								

By working together to define each partners roles and responsibilities will help to ensure seamless, effective, and efficient PFM service delivery. The more commitment that partners and stakeholders bring to the table in sharing resources and information increases the successful implementation of this plan. Actively participating on an ongoing basis is the core to developing and expanding partnership and stakeholder capacity to reach the shared goals and objectives of this Plan.

Moving from a paradigm of serving one landowner at a time to a landscape team approach that concurrently serves landowners and their communities will require the project coordinator and forestry technical team to encourage all partners to significantly expand the sharing of their limited resources for landscape stewardship. The sharing of resources—staff, funding, equipment, information, and know-how—in far more robust and active ways—is fundamental to partnership capacity development.

Collaborate Outreach Efforts to Engage Landowners, Community Leaders and Local Decision Makers

To gain the support of decision makers in the community, resource managers need to provide a convincing answer to the fundamental marketing question: “What is in it for them?” Broader community support is likely to depend on being able to demonstrate that conservation programs are effectively and efficiently

addressing issues of importance in terms that residents and their decision makers easily understand. Increasing support for forest conservation that protects and enhances water quality will be based primarily on the off-site benefits that accrue to community residents, rather than on the on-site benefits that accrue to forest landowners.

Tools for Engaging Landowners Effectively (TELE) was developed by the Sustaining Family Forests Initiative (SFFI) to engage landowners effectively. The SFFI is a collaboration of government agencies, NGOs, certification systems, landowner groups, businesses, and universities organized to gain comprehensive knowledge about family forest owners (10-999 acres) in the United States. The SFFI has taken advantage of the wealth of information from the National Woodland Owner Survey database and linked this resource with demographic and behavior information to develop the TELE marketing approach to help natural resource professionals and others engage more effectively with family forest owners about their woods and woodland management. More information about the SFFI and TELE can be found at www.engaginglandowners.org and in the [Appendix](#).

Coordination Strategy # 4 – Coordinating Resources for Implementation

Prioritizing PFM Service Delivery Through MWA and RAQ

DNR Forestry and BWSR have developed the minor watershed assessment/RAQ methodology that connects forest land cover and water quality based on research developed by MN DNR Fisheries. The process works as follows: 1) Prioritize lakes that can meet at least 3 of 5 risk and quality factors, and have less than 75% protected watersheds, 2) Target specific parcels with high scores for proximity to riparian “R”, adjacency to public land “A”, and habitat quality “Q” (RAQ) scores (5 or greater) and focused proactive outreach efforts to these landowners that promote increased forest management and forest land protection (SFIA, conservation easements, public land acquisitions), and 3) over time, measure progress toward 75% protection goal on watershed basis.

We periodically measure the percent of the watersheds with permanent forest protection to illustrate this transformation on graphic dial like a speedometer. We call this measurement and assessment, moving the needle towards watershed protection. Through the implementation and monitoring of this plan over time, we can document and assess forest land protection levels at the major watershed, subwatershed and minor watershed levels.

This plan is intended to help support the PTM thinking by all service providers in a collaborative manner. This intentional and measurable planning process enhances opportunities for the collaborative implementation of the plans over time. To support this effective cross boundary approach, increased coordination capacity provided by this federal grant is essential.

Linking Landscape Stewardship Plans and 1W1Ps through PTM

By coordinating forest and water resource planning and implementation through the development of this plan, we are setting the watershed/land cover context for developing the Rum River 1W 1P. These interconnected public planning processes promote more active and cross boundary management of not only forest resources, but water resources along with fish and wildlife. This collaborative work is helping to strengthen working relationships with agency fish and wildlife managers as well as outdoor and sportsmen groups. Through the LSP and 1W1P, MN DNR Forestry and partners are shaping approaches to working more proactively with landowners and providing them with more options to:

- Provide conservation-minded landowners with 3 protection options.
- Promote SFIA, the state’s incentives program for maintaining forest lands.

- Conservation easements acquired by either Forests for the Future (FFF) or Reinvest in Minnesota (RIM) programs. FFF focusing more on larger tracts and shoreland, RIM focusing on smaller tracts and backlots.
- For landowners choosing fee title, proposals go to the county via the land commissioner for review and comment—first. Work with conservation organizations on fee title projects. Transfer land to either county or state.

The Subwatershed Action Plans, Minor Watershed Assessments and RAQ scoring (provided in the LFT Workbook) provide a useful evaluation of the land cover/watershed relationships and initial risk assessment. These tools provide the Local Forestry Technical Team with resource management strategies at the subwatershed and minor watershed scales to more effectively implement the two goals in this plan.

10-Year Investment Plan

The table below summarizes acreage goals and estimated costs for implementing Goal 1 – Increase Forest Land Protection and Goal 2 – Promote Forest Stewardship. This information should be reviewed and integrated into the Rum River 1W1P and used to help secure funding needed to implement the goals in this plan. It should be noted that the table below indicates 0 acres for forest land protection given the 75% metric at the subwatershed level. Although the Mille Lacs Lake Subwatershed is over 75% protected, several of the minors are not. When conservation easements are desired and appropriate (higher RAQ scores) the Local Forestry Technical Team should review these with the Advisory Committee for the investing of RIM funds. Other PFM services should be made available to Interested landowners in this subwatershed.

Table 11. 10-year forestry investment plan summary.

No.	Subwatershed name	Goal 1 – Increase Forest Land Protection		Goal 2 – Promote Forest Stewardship	
		Acres	Public investment ^A	Plans / acres	Public investment ^B
1	Mille Lacs Lake	0	\$0	30 / 4,780	\$24,000
2	Upper Rum River	22,402	\$24,353,241	244 / 38,397	\$195,200
3	West Branch Rum River	11,465	\$12,380,873	91 / 14,353	\$72,800
4	Stanchfield Creek	6,465	\$8,577,251	48 / 7,544	\$38,400
5	Middle Rum River	13,007	\$20,009,261	92 / 14,459	\$73,600
6	Cedar Creek	2,741	\$5,007,908	19 / 2,983	\$15,200
7	Lower Rum River	8,008	\$14,947,234	55 / 8,684	\$44,000
	Totals	64,088	\$85,275,767	579 / 91,201	\$463,200

^ACost assumes 50% of area in conservation easement and 50% in SFIA for 100 years.

^BCost assumes \$800 / stewardship plan plus - \$600 for the plan plus \$200 for outreach and administration costs. Public funds to be used to help underwrite costs of preparing forest stewardship plans. Assumes average parcel size of 155 acres. 50% of the plan writing cost to be cost shared.

Funding Sources

How will the implementation of this plan be funded? Experience has shown that landscape approaches to natural resource conservation tend to have a synergistic effect on funding. Partners that get involved in a landscape-scale project area do so because it meets some of their own resource or public relations goals. Because of this they can support efforts in the project area.

Landscape-scale, multi-partner, coordinated efforts often carry increased weight with foundations, trusts, and government agencies when it comes to applying for grants. Federal and state funding agencies as well as private foundations tend to look favorably on multi-partner project applications. There is a considerable amount of money available through grants and other programs that landscape stewardship approaches can facilitate.

The following is a list of potential resources available to the Forestry Technical Team to pursue in the project and funding development. The Team should maintain and grow this inventory to foster increased success in implementation of this Plan.

- BWSR capacity funds.
- DNR PFM Program – cost share and SFIA.
- Watershed based implementation funding (WBIF).
- Clean Water Legacy funding through BWSR, MPCA and DNR.
- LSOHC – big and small grants.
- LCCMR.
- US Endowment.

Private Sector Partnerships

As envisioned by the US Forest Service and state foresters, landscape stewardship projects seek to encourage and promote greater levels of private investments in ways to leverage public investments. Private woodland owners make significant investments in their own lands. These investments may not end up on the balance sheets of service provider agencies (although they sometimes do), but the investments private landowners make on their lands are no less important. The bottom line is that there will likely be more money and resources for coordination and implementation available in a more coordinated way for on-the-ground resource management work.

An untapped reservoir of funding may come from local businesses that will benefit from the results of the resource management activities taking place. For example, a local canoe outfitter may see benefit in financially aiding efforts that will result in maintenance or improvement in water quality in a local river. Family resorts, campgrounds and other businesses that benefit from clean water and healthy forests can promote and support the watershed-based landscape stewardship plans. By doing so, they can help promote opportunities for financial support at the community level through lake associations and chambers of commerce to encourage more businesses decide to project a “high quality forest and water – sustainable green” image where we can all benefit through win-win-win approaches.

Coordination Strategy # 5 – Support Accomplishment Reporting

Accomplishment reporting will be critical to evaluating the success of implementation efforts of this Plan over the next ten years. The table below provides a starting point for monitoring progress made by all partners. It should be maintained on an annual basis. The Forestry Technical Team will be responsible for organizing this information and sharing it with their local boards, DNR, and BWSR.

Table 12. Annual PFM accomplishment report summary table - template.

	Mille Lacs Lake	Upper Rum River	West Branch Rum River	Stanchfield Creek	Middle Rum River	Cedar Creek	Lower Rum River
Baseline							
Total land area (acres)	266,384	227,951	118,277	61,671	126,743	53,827	158,942
Area of private ownership (acres; % of subwshd)	92,689; 35%	189,066; 83%	116,841; 99%	57,610; 93%	118,169; 93%	42,853; 80%	142,767; 90%
Private parcels <5 acres	11,449	2,885	1,629	557	8,854	5,399	29,491
Private parcels 5-20 acres	919	1,775	993	495	2,116	1,011	3,112
Private parcels >20 acres	1,594	2,725	1,910	925	1,775	555	1,785
Forest stewardship plans (#; acres)	42; 5,665	104; 22,201	26; 4,362	11; 685	25; 1,788	7; 737	16; 912
General advice & assistance							
Mailings							
Workshops							
Specific advice & assistance							
Site visits							
Forest stewardship plans							
Grants/ cost-share projects							
Forest restoration							
Forest stand improvement							
Forest management							
Timber harvests							
Biomass harvests							
Land use controls							
Riparian buffer plantings							
Site-level guideline compliance							
Incentive programs							
SFIA							
2C							
Conservation easements							
Public							
Private/nonprofit NGO							
Fee title public land acquisition							
Public land acquisitions							
Land trades/ exchanges							

Template table to be completed annually by the Local Forestry Technical Team and distributed to DNR Forestry, local SWCD board and county boards, US FS, and the MFRC East Central Landscape Committee.

Coordination Strategy # 6 – Recommendations to Local and State Agencies

Recommendations to BWSR and SWCDs for the Rum River 1W1P

1. MOUs. Complete the memorandum of understanding between DNR Forestry and BWSR on the new paradigm for PFM including landscape stewardship and comprehensive local water planning.
2. Reference Document. Adopt the Rum River Watershed Landscape Stewardship Plan by reference for addressing forest land protection and forest stewardship topics in the Rum River 1W1P. Attached the LSP as an appendix to the 1W1P.
3. Policy Integration. Incorporate the two forestry goals into the policy framework in the 1W1P.
4. Funding Coordination. Integrate the overall funding needs listed in the 10-Year Forestry Investment Plan – Summary Table into the 1W1P Implementation Schedule.

Recommendations to Rum River Counties

1. Reference Document. Local land use officials are strongly encouraged to use this Plan as a reference document when developing their comprehensive plans to guide land use and public infrastructure decisions. They are further encouraged to adopt this landscape stewardship plan as an appendix to their plans to provide more detailed guidance on sustainable forest resource management and support more proactive and collaborative funding development.
2. Consider Forests in Local Land Use Decisions. Local officials are encouraged to consider the values and benefits that forests can bring to their communities. Healthy and sustainable forests promote a high quality of life for citizens and can support increased economic opportunities as well. Forests should be included in the land use decision making process.
3. Alternative Land Development Options. Local officials are encouraged to use forestry as a design tool to help them work more effectively with landowners and developers. There are alternative ways that land can be developed to provide for both economic growth and the protection of forest and water resources. Large lot developments are not always desirable or cost effective from the public sector or taxpayers perspectives.
4. Guide Growth to Existing Infrastructure. Use the maps from the minor watershed assessment / RAQ scoring and related tools to help inform local land use decisions. Guide growth and development towards existing roads and infrastructure and protection of larger blocks of working forest lands into interiors areas away from roads.

Recommendations to Lake Association Based Sustainability Committees

1. Convene meeting with lake associations to explore creating sustainable committees for larger recreational lakes in the watershed. The lake associations can serve as local leaders to grow landowner buy-in for forest land protection.
2. Explore setting up a trust fund to use as match for forest land protection on key properties.

Recommendations to Rum River County Land Departments

1. Land Asset Management Programs. Continue to develop county land asset management programs that support guiding of growth and forest land protection areas. Use the maps from the minor watershed assessment / RAQ scoring and relevant PFM implementation tools for land protection to help protect working private forest lands adjacent to county forest lands.
2. Timber Sale Coordination. Continue to support active communications with adjacent private landowners on coordinating timbers sales and other forest management activities.
3. Forest Roads. Continue to support active communications with adjacent private landowners on the maintenance and improvement of forest roads and access issues.

Recommendations to state and federal programs for PFM policy changes and funding needed

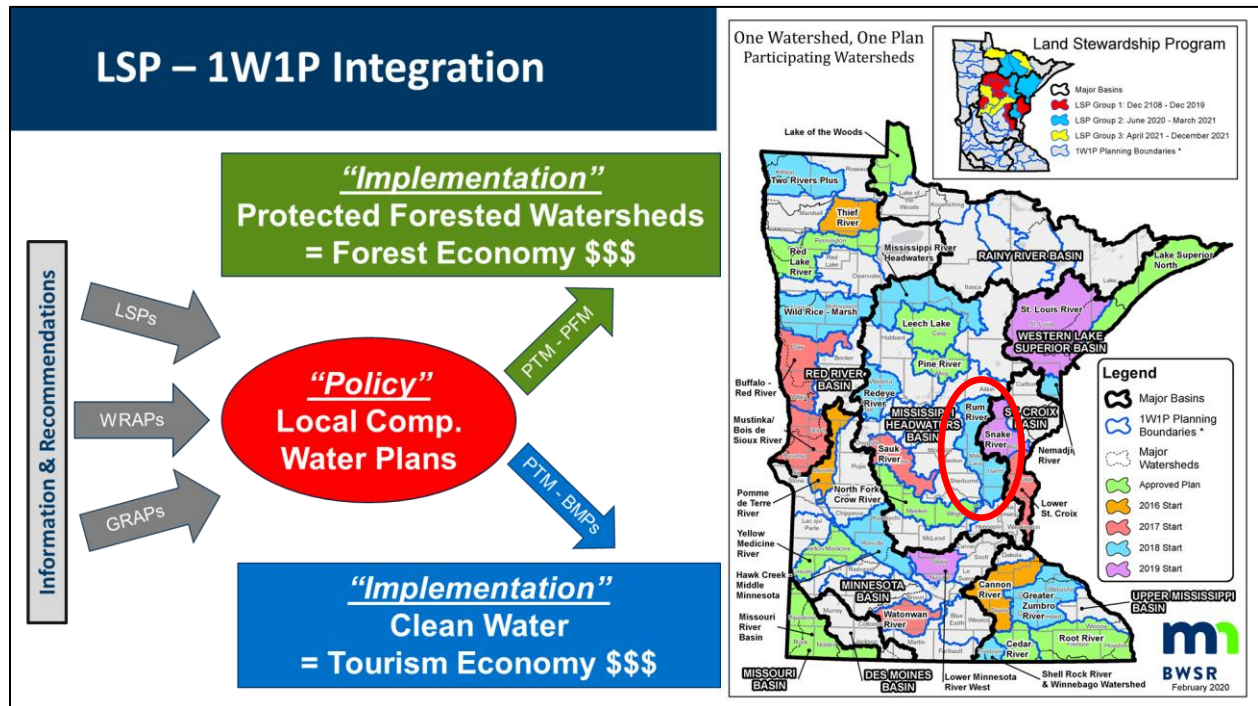
1. Integrate Landscape Stewardship Approaches into the PFM Program. Overall, encourage integrated service delivery between the broad range of agencies and organizations that serve private woodland owners to make delivery of their programs better coordinated, simpler and less costly in processing, and less time consuming.
2. Base PFM Program Funding. Increase and sustain funding for the private forest management program including support for SWCDs, consulting foresters, industry foresters and loggers.
3. Coordinated Landowner Outreach. Support efforts by local partners to focus, coordinate and increase landowner outreach efforts to promote forest land protection, forest stewardship plans, and increased forest management in priority areas identified in this LSP through the PTM/MWA/RAQ methodologies to meet the directive set forth by Governor Dayton in his November 2, 2016 letter to Minnesota Forest Industries – “accelerate outreach efforts with family forest landowners to increase harvest from private lands”.
4. Forest Habitat Priority Areas Planning. Support the updating of the 25-Year LSOHC Forest Habitat Vision developed by the MFRP and MFRC and the regional landscape committees. Support the collaborative development and integration of other conservation priority efforts that complement priorities identified in the watershed-based landscape stewardship plans.
5. ECS / NPC. Continue to promote the Ecological Classification System (ECS) and Native Plant Community modeling (NPC) from the MFRC landscape plans as guides to developing forest vegetation and land management strategies when working with landowners and local officials. These strategies integrate relevant climate science from the US Forest Service and Northern Institute of Climate Science (NAICS), DNR, University of Minnesota, and other research agencies.
6. Ash Management. Prioritize funding towards proactively managing ash resources on private lands and increasing resilience of wet forest ecosystems to address emerald ash borer.
7. Source Water. Continued support from the Minnesota Department of Health to work with the LFT on projects through this the implementation of this plan that support and protect source water resources.
8. Climate Change and Carbon Sequestration. Support efforts by the LFT to address climate change and carbon sequestration through the implementation of this LSP including: 1) protect existing forestlands in the watershed from being converted to non-forested land uses, 2) improve forest management activities to increase carbon storage in the forest and associated wood products that come from the forests, and 3) support efforts by the LFT to assist interested landowners in the reforestation of their open lands.
9. Fire Management. Actively promote the implementation of the National Cohesive Wildland Fire Management Strategy including the three national goals: 1) Restore and Maintain Resilient Landscapes, 2) Fire Adapted Communities, and 3) Wildfire Response through the implementation of this plan. Provide resources to the LFT that support the integrated delivery of fire prevention and management efforts including the Firewise Program through delivery of PFM services to private landowners in this watershed.

Demonstration Projects

Demonstration projects can provide valuable insights to resource professionals and landowners. They can serve as starting points for the implementation of this Plan. The table below is a template for developing a 10-year demonstration project list on a subwatershed basis. This list summarizes potential projects with partners, initial priorities, and suggested timelines. One of the benefits and uses of project lists is they can help partners work together to develop shared priorities when pursuing additional funding. The Local Forestry Technical Team will be responsible for developing this list. The Team should periodically review and refine the 10-year project list.

Map no.	Project name and brief description	Subwd / project priority	Lead entity / support entities	Proposed timeline
	Mille Lacs Lake Subwatershed			
	Upper Rum River Subwatershed			
	West Branch Rum River Subwatershed			
	Stanchfield Creek Subwatershed			
	Middle Rum River Subwatershed			
	Cedar Creek Subwatershed			
	Lower Rum River Subwatershed			

Linking Forest & Water Planning and Implementation through LSPs and 1W1Ps

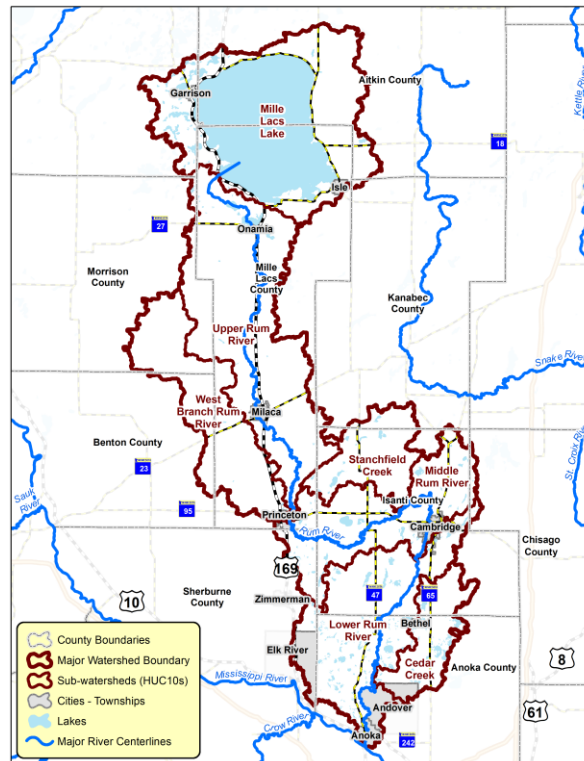


Note: Landscape stewardship plans (LSPs) like the MPCA Watershed Restoration and Protection Strategies (WRAPs) and the MDH Groundwater Restoration and Protection Strategies (GRAPs) provide important information and relevant context from state water and forest resource programs to inform comprehensive local water management (1W1Ps) processes. Members of the 1W1P committees are encouraged to consider the recommendations in this document for incorporation into their plans. Through the integration of landscape stewardship plans and 1W1Ps, conservation professionals and landowners are working together to address the following national priorities from the USDA Forest Service:

- Conserve Working Forest Lands.
- Protect Forests from Harm.
- Enhance Public Benefits from Trees and Forests.

*“A lake is the landscape’s most beautiful and expressive feature.
It is Earth’s eye;
looking into which the beholder measures the depth of his own nature.”*
- Henry David Thoreau

Index Information – Rum River Major Watershed



Subwd no.	Subwatershed name	HUC no.	Acres	No. of minors
1	Mille Lacs Lake	701020701	266,384	15
2	Upper Rum River	701020702	227,951	23
3	West Branch Rum River	701020703	118,277	15
4	Stanchfield Creek	701020704	61,671	7
5	Middle Rum River	701020705	126,743	19
6	Cedar Creek	701020706	53,827	5
7	Lower Rum River	701020707	158,942	17
	Totals		1,013,794	101

