

# Excerpt from 2019 Environment and Natural Resources Trust Fund Strategic Planning Report

## Goals and Strategies

### Water

Recommended goal regarding *increased knowledge*: **Minnesota's water resources are better managed for both water quantity and quality, as a result of better understanding of the connections between surface water and groundwater.**

Top recommended strategies to achieve the goal:

- Research and demonstrate innovative, market-based policies and partnerships that solve local water issues in both forest-based regions and agriculture-based regions.
- Educate local officials on how to improve and protect water resources, including model projects and policies that can be emulated at all scales.
- Research, demonstrations, incentives, and policies to hold back water and increase evapotranspiration opportunities to prevent water pollution.
- Increase understanding of weather and future weather and climate patterns, and how these align with anticipated water needs across Minnesota.
- Research on the impacts of nitrogen and effective agriculture and urban practices to improve surface water and groundwater quality, as well as manage water quantity and mitigate the impacts of agriculture drainage and urban stormwater runoff.

Recommended goal regarding improved *overall outcomes*: **Minnesota is prepared for water volume changes, both excesses and shortages, and extreme runoff events resulting from climate and land use changes.**

Top recommended strategies to achieve the goal:

- Research and demonstrate market-based policies that are economically viable and help pay for the land use and conservation practices needed to achieve water resources protection, especially in agricultural areas.
- Research effective water use scenarios to identify improvements needed to ensure the state's water resiliency and sustainability (including modeling water scenarios, managing water on land, optimizing use to prevent overuse of groundwater, and improving water reuse and wastewater management).
- Identify and promote workable, holistic, multibenefit, diverse, and viable (e.g., economically and socially) solutions for storing more water on the land, through both engineered and natural solutions targeted at critical areas.
- Support cities, counties, and watershed districts with developing climate resiliency and adaptation plans, and processes for funding and implementing those plans.
- Compile existing research, identify gaps, and develop research to quantify land use and land cover changes, in order to identify restoration and protection needs to achieve sustainable water systems.

### Habitat, Fish, and Wildlife

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Recommended goal: **Minnesota has healthy and diverse wildlife and plant populations that sustain and enhance the state's environment, economy, and quality of life.**

Top recommended strategies to achieve the goal:

- Monitor the biologic and environmental health of systems through high-quality research, to support management of lands and waters.
- Research key issues and develop strategies to combat them (e.g., bird/insect crash).
- Species-specific and habitat-level research and management to effectively maintain, protect, and restore habitats and populations.
- Research to inform managing plant, fish, and wildlife communities to adapt to climate change.
- Conservation of additional lands and support for management of currently protected lands.

## Working Lands

Recommended goal: **Working lands in Minnesota, including forestry, grasslands, and agricultural lands, provide long-term benefits to fish, wildlife, and people.**

All recommended strategies to achieve the goal:

- Through demonstration, educate people on the opportunity for working lands to slow and store water for multiple benefits (e.g., water quality, habitat, flood mitigation) as well as for carbon sequestration.
- Develop innovative, market-based policies to make substantive conservation efforts financially feasible.
- Preserve and protect the watersheds that are already in good shape.
- Support and provide technical assistance to private landowners on cost-effective ways to develop and restore diverse, native habitat.
- Conservation actions that prioritize the needs of vulnerable, declining, poorly understood, and sensitive species.
- Improve and demonstrate how working lands can be economically productive and good habitat.
- Increase understanding and assessment of tradeoffs among different environmental and societal goals to improve decisions on working lands.
- Evaluate, prioritize, and demonstrate how working lands and renewable energy can be mutually beneficial.
- Use public open space to demonstrate climate change adaptation, mitigation, and prevention.
- Create or use existing open spaces, or use them to demonstrate, CO2 storage, heat sinks, and flood prevention.
- Promote, research, and evaluate best management practices (BMPs) on working lands, in order to provide long-term benefits to fish and wildlife.
- Encourage landscape-level and eco-type planning, instead of parcel-level.
- Identify high-quality habitat, recreation open spaces, and other high-priority areas for action.
- Outreach, education, and engagement through citizen science for landowners, operators, and others on how to economically manage for water resiliency.
- Create market mechanisms for carbon sequestration on working lands.
- Demonstrate how to add diverse cropping systems and incentivize continuous living crops.
- Research and demonstration that show the practical value of regenerative agriculture.
- Development and implementation of agricultural cropping systems with diverse crops that provide multiple benefits, including exploring markets and supply chain.

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- Education and public outreach to change landscape and ecosystem norms.
- Research and evaluation of approaches that achieve goals.
- Projects that enlist the support of multiple agencies and organizations.

### Environmental Education and Outdoor Recreation

Recommended goal: **All Minnesotans, especially young people, have access to and take advantage of opportunities for culturally relevant and innovative connections to the lands and waters of Minnesota.**

Top recommended strategies to achieve the goal:

- Address the social, economic, and physical barriers to outdoor recreation through programs that encourage inclusivity and address inequities.
- Research people's interests in outdoor recreation and understand barriers to participation.
- Assess programs, activities, and physical spaces for their accessibility; support changes to adapt and retrofit to welcome more people.
- Through collaborative efforts, provide curriculum, programs, and outdoor environmental events that teach K–12 students what public lands are, introduces them to public lands near them, and encourages them to explore local public lands.
- Through partnerships between schools, environmental learning centers, and other community resources, provide evidence-based, engaging programs to bring students to outdoor experiences.
- Capital projects that develop culturally relevant, accessible, and resilient outdoor recreation facilities, infrastructure, and equipment rental programs that create innovative experiences (e.g., parks, trails, fishing piers, shoreline fishing areas, birding trails, shelters).

### Air and Energy

Recommended goal: **Minnesota achieves reliance on nonpolluting, renewable energy in all sectors (including transportation, building, industry, agriculture, and others).**

Top recommended strategies:

- Encourage bundling renewable energy production and battery storage.
- Demonstrate the ability and statewide potential to generate solar energy on perennially vegetated lands, reducing CO<sub>2</sub> and water runoff, while making the enterprise economically viable.
- Incentivize the use of nonpolluting renewable energy in agriculture, industries, and commercial transportation.
- Demonstrate community-scale, net-zero renewable energy systems.
- Fund energy efficiency improvements and renewable energy for rental properties, small businesses, and schools.

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## Outcomes

### Water – Increased Knowledge

**Priority Goal:** Minnesota’s water resources are better managed for both water quantity and quality, as a result of better understanding of the connections between surface water and groundwater.

**Ways to measure progress:**

- The number of acres impacted by implementation of ENRTF projects broken down by sector
- Percent of surface waters classified as impaired (develop monitoring and reporting requirements that are consistent across strategies to assess collective impact)
- Percent of total wells contaminated (focus on private wells, consistent monitoring, and reporting across projects/strategies)
- Ability of streams and rivers to absorb precipitation without resulting in damage
- Percent of Minnesota residents that understand the status of water in the state (use survey before and after intervention, target audience for strategy, create survey bank for education/outreach and customization by strategy)

### Water – Improved Outcomes

**Priority Goal:** Minnesota is prepared for water volume changes, both excesses and shortages, and extreme runoff events resulting from climate and land use changes.

**Ways to measure progress:**

- Amount or incidence of damage caused by floods (damage to infrastructure, homes, working lands, etc.)
- Amount of ecologically-sensitive water storage capacity of streams
- Incidence of water use affecting lake levels and stream flows below aquatic thresholds.
- Number of counties with completed Geologic and Water Atlases
- Number of counties with completed Part C (Water Account) Atlases
- Levels of sedimentation and other pollutants
- Amount of water conserved

### Habitat, Fish, and Wildlife

**Priority Goal:** Minnesota has healthy and diverse wildlife and plant populations that sustain and enhance the state’s environment, economy, and quality of life.

**Ways to measure progress:**

- Report on the proportion of ENRTF-funded projects that do not align with the strategic plan each funding cycle
- Of ENRTF-funded projects, conduct follow-up reporting to measure long-term impact (ex. is the prairie restoration a prairie 10 years later?)
- Measurements of diversity at multiple scales: location-specific (GIS) point level, polygon level, or county level
- The extent to which learning has been shared (counting accessible research publications)

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## Cross-Cutting/Working Lands

**Priority Goal:** Working lands in Minnesota, including forestry, grasslands, and agricultural lands, provide long-term benefits to fish, wildlife, and people.

### Ways to measure progress:

- Number of acres in continuous living cover
- Percent of watersheds with 75% forest
- Long-term habitat monitoring
- Amount of renewable energy generation on working lands
- Number of acres in working lands
- Change in the carbon content within the soil
- Infiltration and absorption capacity of the soil
- Diversity of green cover crops retention that are driven through markets (by acre?)
- Attitudes, beliefs, and behaviors of trained citizen scientists

## Outdoor Recreation and Open Space

**Priority Goal:** All Minnesotans, especially young people, have access to and take advantage of opportunities for culturally relevant and innovative connections to the outdoor lands and waters of Minnesota.

### Ways to measure progress:

- Number of participants in outdoors, especially youth
- Number of underserved/underrepresented participants in outdoors
- Understanding of “what works” to get participants outdoors
- Number of Minnesotans who identify as having an outdoor ethic/values
- Number of people taking conservation actions based on their outdoor recreation experience
- Amount of time that Minnesotans spend outdoors
- Number of Minnesotans who have at least 1 week of intense outdoor experience a year
- Number of people who live within a 10-minute walk of a meaningful outdoor experience
- Perhaps consider requiring that evaluation of (some of) the above measures be a component of each project?

## Air and Energy

**Priority Goal:** Minnesota achieves reliance on non-polluting, renewable energy in all sectors (including transportation, building, industry, agriculture, and others).

### Ways to measure progress:

- Renewable energy use across sectors
- Amount of emissions across sectors
- Number of people served and how (type of community and saving to consumer) by each ENRTF-funded project
- Number of community members engaged by each ENRTF-funded project
- Amount of investment in environmental justice as identified by ENRTF-funded projects