

II. Projects Funded Preceding Biennium

“a description of each project receiving money from the trust fund during the preceding biennium;”

- The following documents include the adopted appropriation paragraphs describing projects funded in FY2016 (beginning July 1, 2015) and in FY2017 (beginning July 1, 2016).
- Research projects have been marked as such in the description.
- Full work plans are available at the LCCMR, Room 65, State Office Building and on the LCCMR website <http://www.lccmr.leg.mn/> then click on the tab titled “Projects Funded”. The project abstracts are current as of 12/31/2016.
- 144 Projects were funded for a total of \$84,292,000.
- Legal Citations
 1. FY2016 - M.L. 2015, Chapter 76, Sec. 2 (65 projects for a total of \$46,383,000)
 2. FY2017 - M.L. 2016, Chapter 186, Sec. 2 (79 projects for a total of \$37,909,000)

1. FY2016 - MN Laws 2015, Chapter 76, Section 2

2015 ENVIRONMENT AND NATURAL RESOURCES TRUST FUND APPROPRIATIONS

M.L. 2015: Chapter 76, Section 2

Process for M.L. 2015 Appropriations

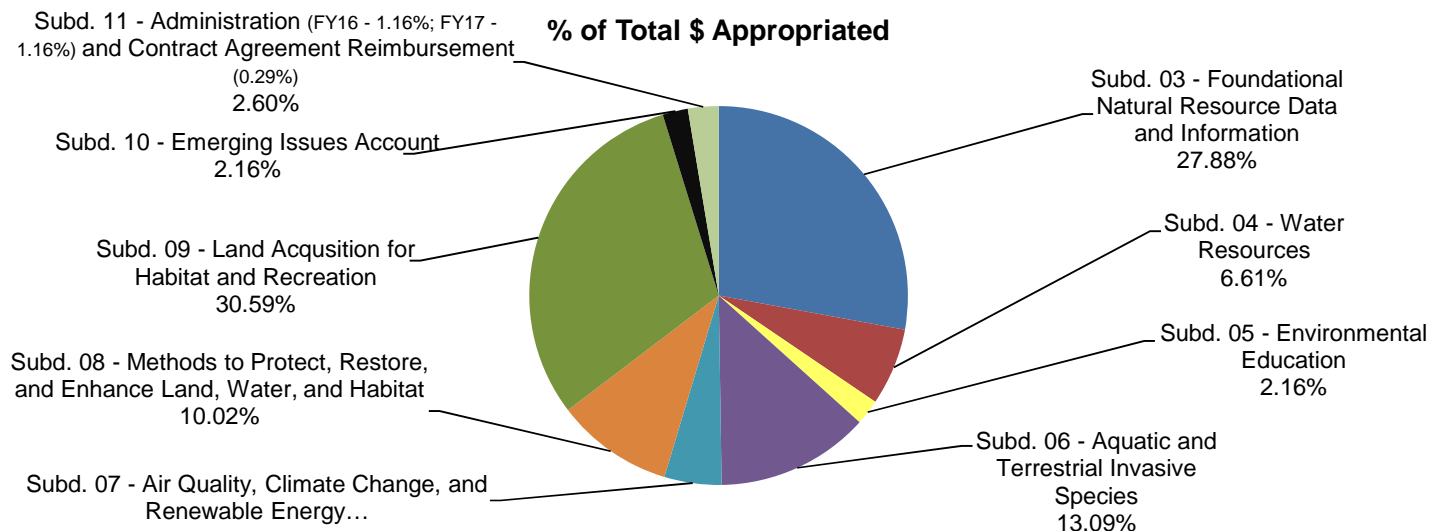
For the FY 2016 and FY 2017 biennium (July 1, 2015 - June 30, 2017), approximately \$46.3 million is available each year (total = \$92,674,000) for funding from the Environment and Natural Resources Trust Fund. In response to the 2015 Request for Proposal (RFP) 152 proposals requesting a total of approximately \$126.3 million were received. Through a competitive, multi-step process, 76 of these proposals, requesting a total of \$74.9 million, were chosen to present to the LCCMR and 65 of those proposals were selected to receive a recommendation for funding to the 2015 MN Legislature. The Legislature adopted 63 of these project recommendations and replaced two of them with two new project appropriations on 05/18/15. The project appropriations adopted by the Legislature were signed into law by the Governor on 05/22/15

October 23 & December 10, 2013	2015 Funding Priorities Determined and RFP Adopted
December 16, 2013	2015 RFP Issued
March 28, 2014	2015 RFP Proposal Deadline (Received 152 Proposals totaling \$126,332,461)
June 4, 2014	2015 Selection of Proposals for Presentations
June 17, 18, 19, 24, & 25, 2014	2015 Proposal Presentations (Selected 76 proposals totaling \$74,867,915 to present)
July 10, 2014	2015 Allocations Recommendations
August - December, 2014	Research Projects Recommended Undergo Peer Review
November 19 & December 9, 2014	2015 Appropriation Language Review & Adoption
May 18, 2015	Appropriations adopted by MN Legislature
May 22, 2015	Appropriations signed into law by Governor
June 11, 2015	Project work plans approved by LCCMR
July 1, 2015	Projects can begin

Summary of Appropriations by Subdivision

Subdivision	\$ Appropriated	# Appropriations
Subd. 03 - Foundational Natural Resource Data and Information	\$12,932,000	19
Subd. 04 - Water Resources	\$3,065,000	9
Subd. 05 - Environmental Education	\$1,004,000	5
Subd. 06 - Aquatic and Terrestrial Invasive Species	\$6,071,000	4
Subd. 07 - Air Quality, Climate Change, and Renewable Energy	\$2,268,000	3
Subd. 08 - Methods to Protect, Restore, and Enhance Land, Water, and Habitat	\$4,646,000 *	11
Subd. 09 - Land Acquisition for Habitat and Recreation	\$14,190,000	11
Subd. 10 - Emerging Issues Account	\$1,000,000	1
Subd. 11 - Administration and Contract Agreement Reimbursement	\$1,207,000	2
TOTAL	\$46,383,000	65

*One appropriation in Subd. 8 includes \$59,000 from the Great Lakes Protection Account

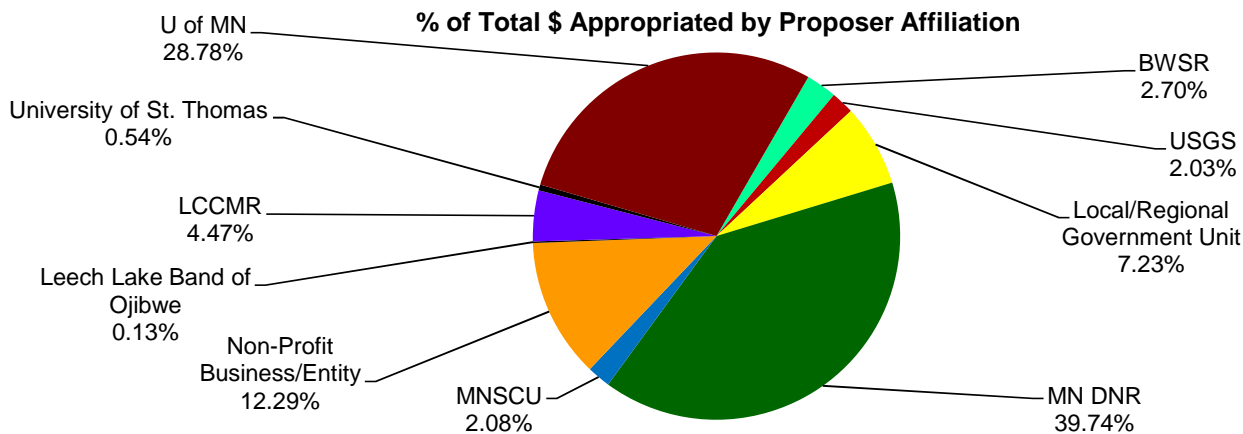


2015 ENVIRONMENT AND NATURAL RESOURCES TRUST FUND APPROPRIATIONS
M.L. 2015: Chapter 76, Section 2

Summary of Appropriations by Proposer Affiliation*		
Affiliation Type	\$ Appropriated	# Appropriations
Minnesota Board of Water and Soil Resources (BWSR)	\$1,253,000	2
U.S. Geological Survey (USGS)	\$943,000	2
Local/Regional Government Unit	\$3,355,000	8
Minnesota Department of Natural Resources (MN DNR)	\$18,433,000	12
Minnesota State Colleges and Universities (MNSCU)	\$966,000	3
Non-Profit Business/Entity	\$5,699,000	14
Leech Lake Band of Ojibwe	\$61,000	1
Legislative-Citizen Commission on Minnesota Resources (LCCMR)	\$2,072,000	2
University of St. Thomas	\$250,000	1
University of Minnesota (U of MN)	\$13,351,000 **	20
TOTAL	\$46,383,000	65

*Dollar amounts based on project manager affiliation listed in the proposal; some proposals have multiple partners with multiple affiliations and dollars requested distributed between them.

**One appropriation to the University of Minnesota includes \$59,000 from the Great Lakes Protection Account.

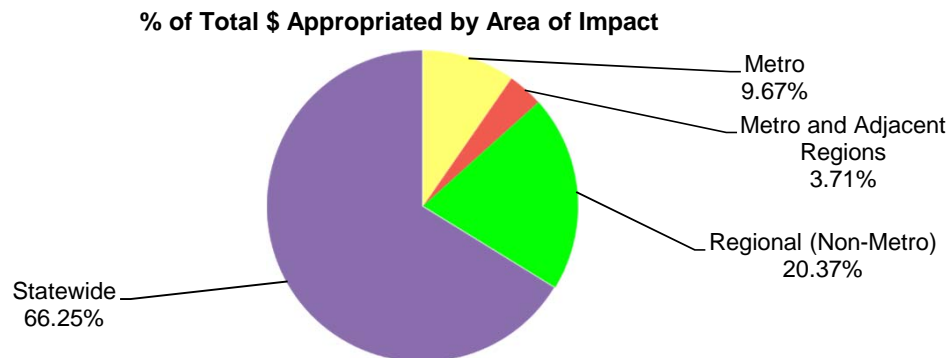


Summary of Appropriations by Area of Impact		
Area of Impact	\$ Appropriated	# Appropriations
Metro*	\$4,485,000	12
Metro and Adjacent Regions	\$1,723,000	3
Regional (Non-Metro)**	\$9,446,000 ***	18
Statewide	\$30,729,000	32
TOTAL	\$46,383,000	65

* "Metro" region includes the 11 counties of Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, Scott, Sherburne, Washington, and Wright.

** "Regional" means area of impact is less than "Statewide" but includes one or more regions of the state ("Northwest", "Northeast", "Central", "Southwest", or "Southeast") other than the 11-county "Metro" region.

*** One appropriation with a "Regional" area of impact contains \$59,000 from the Great Lakes Protection Account.





ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

M.L. 2015 Appropriations: Chapter 76, Section 2

SUMMARY OF ML 2015 APPROPRIATIONS BY SUBDIVISION (\$46,383,000)

- SUBD. 3. Foundational Natural Resource Data and Information: \$12,932,000 – 19 Appropriations**
- Collection, interpretation, mapping, and dissemination of foundational data and information pertaining to groundwater, wetlands, and distributions of plant and animal species and ecological systems.
 - Planning and development of online inventories for data and imagery pertaining to Minnesota wildlife, plant, fungi, and pollinator species
 - Surveying and monitoring for distributions and habitat use of pollinators, wetland birds, elk, carnivore species, turtles, goblin fern, and bats in order to guide conservation, management, and mitigation strategies.
 - Research and analysis pertaining to conservation grazing, impacts of forest management practices on water resources, and loon and pelican populations impacted by the Deepwater Horizon oil spill.
 - Development of Blue Mounds and Minneopa State Parks to assist in the reintroduction and preservation of American bison and provide interpretive learning opportunities.
 - Data collection and compilation to improve understanding of forest disturbance impacts and of resulting changes to Mississippi River flow from the St. Anthony Falls lock closure to inform future management.
- SUBD. 4. Water Resources: \$3,065,000 – 9 Appropriations**
- Modeling, mapping, and assessment to increase understanding of water sustainability issues throughout the state, including the associated economic and ecological risks and costs, in order to inform and improve water management strategies and practices.
 - Development of technologies and materials designed to remove pollutants and capture nutrients for recycling from stormwater, agricultural runoff, and polluted water bodies.
 - Research and analysis initiatives pertaining to contaminants of emerging concern in Minnesota lakes and to the impacts of agricultural drainage on groundwater recharge and sustainability in southeast Minnesota.
 - Monitoring and assessment to improve measurement of suspended sediment in rivers and enhance sediment reduction efforts.
 - Outreach, technical assistance, and demonstration initiatives to promote cover crops for soil and water quality protection; to advance irrigation best management practices; and to encourage residential water conservation.
- SUBD. 5. Environmental Education: \$1,004,000 – 5 Appropriations**
- Grants to local communities for trap shooting sports facilities.
 - Development and delivery of hands-on environmental education to engage students and communities on issues relating to water quality and watershed stewardship, including the establishment of six permanent recreational and educational sites located throughout the Zumbro River watershed.
- SUBD. 6. Aquatic and Terrestrial Invasive Species: \$6,071,000 – 4 Appropriations**
- Establishment, development, and support of a new research center at the University of Minnesota specifically dedicated to developing and implementing new techniques for controlling terrestrial invasive plants, pathogens, and pests, including agricultural weeds and pests.
 - Research and analysis to assess the potential impacts of emerald ash borer on Minnesota black ash forests and related ecology; to establish early detection and prevention efforts for an invasive root rot fungus recently discovered in Minnesota; and to develop a biological control for Canada thistle.
- SUBD. 7. Air Quality, Climate Change, and Renewable Energy: \$2,268,000 – 3 Appropriations**
- Development and demonstration of technologies intended to enable renewable and sustainable production of fertilizer and energy in localized manners, particularly within rural areas.
 - Development and testing of a model to make building deconstruction and material reuse a competitively viable alternative to demolition in order to provide a variety of environmental and economic benefits.
- SUBD. 8. Methods to Protect/Restore/Enhance Land, Water & Habitat: \$4,646,000 – 11 Appropriations**
- Analysis and planning initiatives to inform efforts aimed at sustaining trout fisheries along the north shore and to guide future conservation efforts within the Minnesota River Valley.
 - Surveying, collection, and propagation of plant species for prairie restoration and of native orchid species to enable long-term conservation.
 - Restoration efforts including forest and prairie restoration in the greater metropolitan area; restoration and monitoring of prairie and riparian habitat near Moorhead; and restoration of Sargent Creek in Duluth.
 - Technical assistance to residents, businesses, and governments to promote shoreland conservation and protection along the St. Croix River; to communities around the state for community forestry; and to private landowners for participation in existing land conservation programs.
 - Research, analysis, and public engagement to improve restoration techniques in order to create increased resilience against changing climate conditions and to benefit pollinators.
- SUBD. 9. Land Acquisition for Habitat and Recreation: \$14,190,000 – 11 Appropriations**
- Protection and restoration of priority, high quality, and unique lands within Minnesota's Scientific and Natural Area and Native Prairie Bank systems and outreach and technical assistance to engage the public and assist landowners in relation to these programs and their associated opportunities.
 - Expansion of outdoor recreational opportunities through additions to state parks and trails and metropolitan regional parks and trails, and through construction and development of the Mesabi Trail.
 - Acquisition in fee title and conservation easement of priority lands to protect prairies, forests, and wetlands and ensure wildlife corridors within the greater metropolitan area and in Crow Wing and Cass counties.
 - Research and analysis of existing conservation easements acquired through state expenditures to determine their effectiveness at achieving intended outcomes and guide future investments in conservation easements.
- SUBD. 10. Emerging Issues Account: \$1,000,000 – 1 Appropriation**
- Funding for emerging issues that come up unexpectedly outside of the LCCMR and legislative processes.
- SUBD. 11. Administration and Contract Agreement Reimbursement: \$1,207,000 – 2 Appropriations**
- LCCMR administration for FY16-17 and project contract agreement reimbursement for non-state entities.



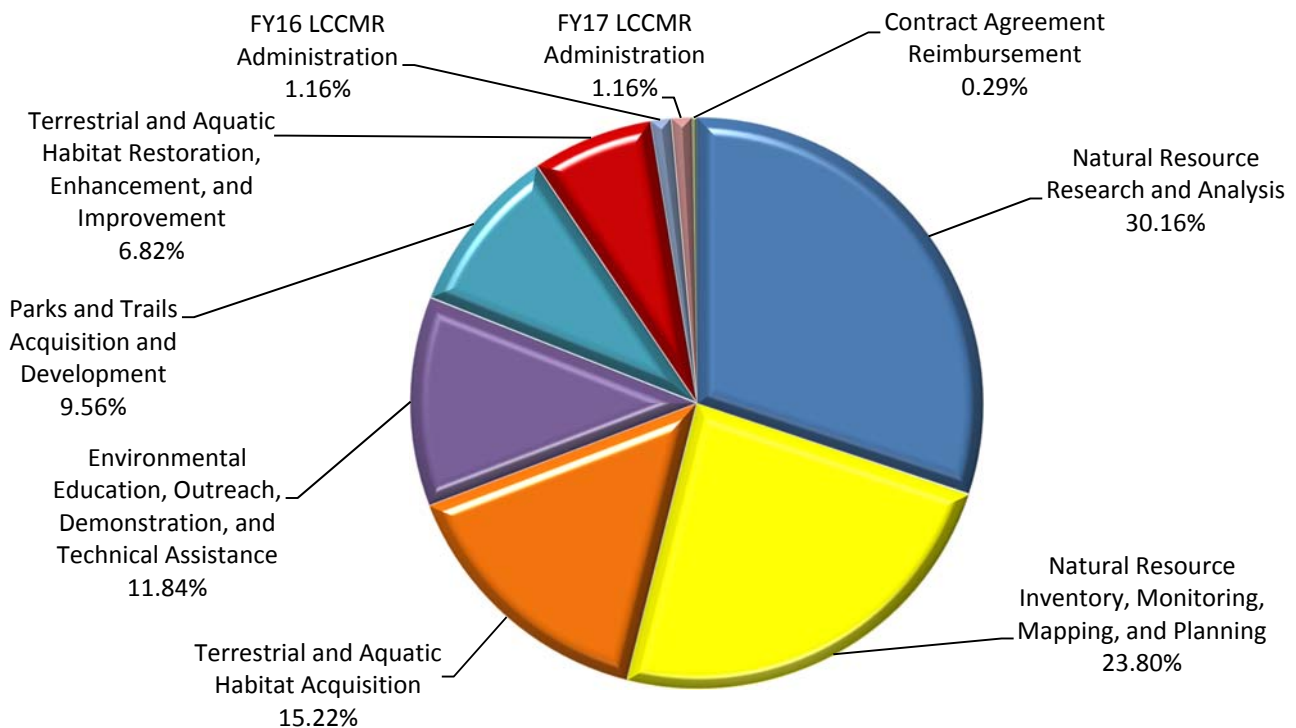
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

M.L. 2015 Appropriations: Chapter 76, Section 2

SUMMARY OF EXPECTED OUTCOMES ACROSS SUBDIVISIONS FOR ~\$46.4 MILLION

- **Natural Resource Research and Analysis: ~\$14.0 million**
Research and analysis projects that will advance our knowledge about and provide strategies and recommendations for addressing issues relating to terrestrial invasive species prevention, control, and mitigation (includes the launch of a new terrestrial invasive species research center); water resources sustainability and protection; plant and animal species protection, management, and recovery; habitat restoration practices; improvement of agricultural and forestry practices; renewable energy; climate change impacts and greenhouse gas reduction; and conservation easement valuation and effectiveness.
- **Natural Resource Inventory, Monitoring, Mapping, and Planning: ~\$11.0 million**
Inventory, monitoring, mapping, and planning efforts to obtain critical information and guide relevant decisions and efforts over time, including acceleration of the Minnesota Biological Survey, Minnesota Geologic Atlas program, and the National Wetlands Inventory update for Minnesota; planning and development of online inventories for data and imagery pertaining to Minnesota wildlife, plant, fungi, and pollinator species; surveying and monitoring for population distributions of pollinators, bats, elk and wetland birds; surveying, collection, and propagation of imperiled plant species; local planning efforts pertaining to recreation and conservation; planning and monitoring for the state’s Scientific and Natural Areas program; inventory and mapping of datasets pertaining to the impacts of forest disturbance; baseline data collection to study the future impacts of planned changes to Mississippi River flow; and detection and monitoring of invasive species including emerald ash borer and a pine root rot.
- **Terrestrial and Aquatic Habitat Acquisition: ~\$7.1 million**
Acquisition of an estimated 1,314 acres in a combination of fee title (567 acres and 1.2 miles of shoreline) and conservation easements (750 acres), including donated easements. Permanently protected areas will include forests, prairies, grasslands, blufflands, wetlands, shorelands, and other habitat, including for additions for the Minnesota Scientific and Natural Areas system.
- **Environmental Education, Outreach, Demonstration, and Technical Assistance: ~\$5.5 million**
Environmental education, outreach, demonstration, and technical assistance efforts that will engage and educate Minnesotans on topics including ecology, plant and wildlife species, pollinators, water resources, alternative agricultural practices, and habitat protection and restoration; demonstrate options for water stewardship, renewable energy, and resource reuse; and provide training and technical assistance on community forestry, cover crops, shoreland protection, prairie stewardship, and natural resource conservation and management tools, practices, and options.
- **Parks and Trails Acquisition and Development: ~\$4.4 million**
Acquisition of an estimated 468 acres to expand parks and trails in the State Parks and Trails System and the Metropolitan Regional Parks and Trails System; *development* of two state parks to assist in the reintroduction and preservation of American bison; *development* of at least six local recreational and educational sites along the Zumbro River in southwest Minnesota; and *design and construction* of a Mesabi Trail segment in northern Minnesota and trap shooting sports facilities in the state.
- **Terrestrial and Aquatic Habitat Restoration, Enhancement, and Improvement ~\$3.2 million**
Restoration, enhancement, and improvement activities on an estimated 2,663 acres. Activities performed will include prescribed burning, soil preparation, seeding, native vegetation installation, woody encroachment removal, invasive species control, and monitoring and evaluation.
- **LCCMR Administration: \$536,000 (FY16) and \$536,000 (FY17)**
 FY 2016-2017 LCCMR administration.
- **Contract Agreement Reimbursement: \$135,000**
 Administering of contract agreement reimbursement for projects of non-state entities.

% OF EXPECTED OUTCOMES ACROSS SUBDIVISIONS



M.L. 2015 Projects

MN Laws 2015, Chapter 76, Section 2 (beginning July 1, 2015)

For the FY 2016 and FY 2017 biennium (July 1, 2015 - June 30, 2017), approximately \$46.3 million is available each year (total = \$92,674,000) for funding from the Environment and Natural Resources Trust Fund. In response to the 2015 Request for Proposal (RFP) 152 proposals requesting a total of approximately \$126.3 million were received. Through a competitive, multi-step process, 76 of these proposals, requesting a total of \$74.9 million, were chosen to present to the LCCMR and 65 of those proposals were selected to receive a recommendation for funding to the 2015 MN Legislature. The Legislature adopted 63 of these project recommendations and replaced two of them with two new project appropriations on 05/18/15. The project appropriations adopted by the Legislature were signed into law by the Governor on 05/22/15.

LINKS TO:

- [Print-ready PDF list](#) of the M.L. 2015 projects adopted by the Legislature and signed by the Governor.
- [Summary](#) of appropriations and expected outcomes
- Additional information on LCCMR's [M.L. 2015 proposal and funding process](#)

NOTE: For all projects, [contact us](#) to obtain the most up-to-date work programs for current projects (project updates are required twice each year) or the final reports of completed projects.

When available, we have provided links to web sites related to the project. The sites linked to this page are not created, maintained, or endorsed by the LCCMR office or the Minnesota Legislature.

Subd. 03 Foundational Natural Resource Data and Information

[03a](#) County Geologic Atlas - Part A

[03b](#) County Geologic Atlas - Part B

[03c](#) Minnesota Biological Survey

[03d](#) Minnesota Biodiversity Atlas for Enhanced Natural Resource Management

[03e](#) Updating the National Wetland Inventory for Minnesota - Phase V

[03f](#) Creating a Statewide Wetland Bird Monitoring Program

[03g](#) Minnesota Native Bee Atlas

[03h](#) Reintroduction and Interpretation of Bison in Minnesota State Parks

[03i](#) Endangered Bats, White-Nose Syndrome, and Forest Habitat - **RESEARCH**

[03j](#) Assessing Contaminants in Minnesota Loons and Pelicans - Phase III

[03k](#) Movement and Seasonal Habitat Use of Minnesota Elk - **RESEARCH**

[03l](#) Genetic and Camera Techniques to Estimate Carnivore Populations - **RESEARCH**

- 03m Aquatic and Terrestrial Reptile Habitat
- 03n Digitization of Historic Gullion Ruffed Grouse Research
- 03o Effects of Grazing Versus Fire for Prairie Management - **RESEARCH**
- 03p Assessing Ecological Impact of St. Anthony Falls Lock Closure
- 03q Foundational Dataset Characterizing Historic Forest Disturbance Impacts
- 03r Hydrologic Effects of Contemporary Forest Practices in Minnesota - **RESEARCH**
- 03s Habitat Mitigation for Goblin Fern Conservation

Subd. 04 Water Resources

- 04a Understanding Water Scarcity, Threats, and Values to Improve Management - **RESEARCH**
- 04b Biofilm Technology for Water Nutrient Removal - **RESEARCH**
- 04c Biological Consequences of Septic Pollution in Minnesota Lakes - **RESEARCH**
- 04d Preventing Phosphorous from Entering Water Resources through Drain Tiles - **RESEARCH**
- 04e Southeast Minnesota Cover Crop and Soil Health Initiatives
- 04f Southeast Minnesota Subsurface Drainage Impacts on Groundwater Recharge - **RESEARCH**
- 04g Using Hydroacoustics to Monitor Sediment in Minnesota Rivers - **RESEARCH**
- 04h Assessment of Irrigation Efficiencies in Benton County
- 04i Shoreview Water Consumption and Groundwater Awareness Project

Subd. 05 Environmental Education

- 05a Trap Shooting Sports Facility Grants
- 05b Connecting Students with Watersheds through Hands-On Learning
- 05c Zumbro River Watershed Recreational Learning Stewardship Sites
- 05d Students Engaging Local Watersheds Using Mobile Technologies
- 05e Mississippi River Water Journey Camps

Subd. 06 Aquatic and Terrestrial Invasive Species

- 06a Minnesota Invasive Terrestrial Plants and Pests Center
- 06b Emerald Ash Borer Ecological and Hydrological Impacts - Phase II - **RESEARCH**
- 06c Biological Control of Canada Thistle - **RESEARCH**
- 06d Preventing a New Disease of Pines in Minnesota - **RESEARCH**

Subd. 07 Air Quality, Climate Change, and Renewable Energy

- 07a Renewable and Sustainable Fertilizers Produced Locally - **RESEARCH**
- 07b Reducing Emissions from Open Burning through Biomass Gasification

07c Building Deconstruction to Reduce Greenhouse Gas Emissions and Solid Waste

Subd. 08 Methods to Protect, Restore, and Enhance Land, Water, and Habitat

08a Prioritizing Future Management of North Shore Trout Streams

08b Propagating Native Plants and Restoring Diverse Habitats

08c Preserving and Protecting Minnesota Native Orchid Species

08d Acceleration of Minnesota Conservation Assistance - Final Phase

08e Metro Conservation Corridors Phase VIII - Prairie, Forest, and Savanna Restoration

08f Metro Conservation Corridors Phase VIII - Enhancing Restoration Techniques for Improved Climate Resilience and Pollinator Conservation

08g Minnesota State University Moorhead Prairie and Riparian Restoration and Monitoring

08h Improving Community Forests Through Citizen Engagement

08i Flood Recovery on Sargent Creek Duluth Habitat Restoration

08j Shoreland Protection for the Lower St. Croix River

08k Redwood and Renville Counties Outdoor Recreation and Conservation Master Plan

Subd. 09 Land Acquisition for Habitat and Recreation

09a State Parks and State Trails Land Acquisitions

09b Metropolitan Regional Park System Land Acquisition - Phase IV

09c SNA Acquisition, Restoration, Enhancement and Public Engagement

09d Native Prairie Stewardship and Prairie Bank Easement Acquisition

09e Metro Conservation Corridors Phase VIII - Coordination and Mapping and Conservation Easements

09f Metro Conservation Corridors Phase VIII - Strategic Lands Protection

09g Metro Conservation Corridors Phase VIII - Priority Expansion of Minnesota Valley National Wildlife Refuge

09h Metro Conservation Corridors Phase VIII - Wildlife Management Area Acquisition

09i Mesabi Trail Development Soudan to Ely - Phase II

09j Multi-benefit Watershed Scale Conservation on North Central Lakes

09k Conservation Easement Assessment and Valuation System Development

Subd. 10 Emerging Issues Account

10 Emerging Issues Account

Subd. 11 Administration and Contract Agreement Reimbursement

11a Legislative-Citizen Commission on Minnesota Resources (LCCMR)

11b Contract Agreement Reimbursement

Funding Source:

Environment and Natural Resources Trust Fund (TF)

MN Laws 2015, Chapter 76, Section 2

Subd. 03 Foundational Natural Resource Data and Information

County Geologic Atlases - Part A

Subd. 03a \$2,040,000 TF

Dale Setterholm

U of MN - MN Geological Survey
2642 University Ave W
St. Paul, MN 55114-1057

Phone: (612) 627-4780 x223

Email: sette001@umn.edu

Web: <http://www.geo.umn.edu/mgs>

Appropriation Language

\$2,040,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota for the Minnesota Geological Survey to continue acceleration of the production of county geologic atlases for the purpose of sustainable management of surface water and groundwater resources. This appropriation is to complete Part A of county geologic atlases, which focuses on the properties and distribution of earth materials in order to define aquifer boundaries and the connection of aquifers to the land surface and surface water resources. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

County Geologic Atlases - Part B

Subd. 03b \$2,000,000 TF

Jan Falteisek

MN DNR
500 Lafayette Rd N

St. Paul, MN 55155

Phone: (651) 259-5665

Email: jan.falteisek@state.mn.us

Web: <http://www.mndnr.gov>

Appropriation Language

\$2,000,000 the first year is from the trust fund to the commissioner of natural resources to continue acceleration of the production of county geologic atlases for the purpose of sustainable management of surface water and groundwater resources. This appropriation is to complete Part B of county geologic atlases, which focuses on the properties and distribution of subsurface water found within geologic formations mapped in Part A in order to characterize the potential yield of aquifers and their sensitivity to contamination. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Minnesota Biological Survey

Subd. 03c \$2,450,000 TF

Bruce Carlson

MN DNR

500 Lafayette Rd

St Paul, MN 55155

Phone: (651) 259-5083

Email: bruce.carlson@state.mn.us

Web: <http://www.dnr.state.mn.us/eco/mcbs/index.html>

Appropriation Language

\$2,450,000 the first year is from the trust fund to the commissioner of natural resources for continuation of the Minnesota biological survey to provide a foundation for conserving biological diversity by systematically collecting, interpreting, monitoring, and delivering data on plant and animal distribution and ecology, native plant communities, and functional landscapes.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Minnesota's Biodiversity Atlas for Enhanced Natural Resource Management

Subd. 03d \$340,000 TF

Keith Barker

U of MN - Bell Museum of Natural History
1987 Upper Buford Cir
St. Paul, MN 55108

Phone: (612) 624-2737

Email: barke042@umn.edu

Web: <http://www.bellmuseum.umn.edu/>

Appropriation Language

\$340,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota for the Bell Museum of Natural History to create a publicly accessible, online tool and repository that will electronically integrate over 600,000 existing biodiversity records, 300,000 existing images, and future data and associated imagery pertaining to Minnesota wildlife, plant, and fungi species in order to enhance research, guide field surveys, and inform conservation planning. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Updating the National Wetland Inventory for Minnesota - Phase V

Subd. 03e \$1,500,000 TF

Steve Kloiber

MN DNR
500 Lafayette Rd, Box 25
St Paul, MN 55155

Phone: (651) 259-5164

Email: steve.kloiber@state.mn.us

Web: http://www.dnr.state.mn/eco/wetlands/nwi_proj.html

Appropriation Language

\$1,500,000 the first year is from the trust fund to the commissioner of natural resources to continue to update and enhance wetland inventory maps for Minnesota. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Creating a Statewide Wetland Bird Monitoring Program

Subd. 03f \$146,000 TF

Kristin Hall

Audubon Minnesota
1 Water St W, Ste 200
St Paul, MN 55107

Phone: (651) 739-9332 x116

Email: khall@audubon.org

Web: <http://mn.audubon.org/>

Appropriation Language

\$146,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Audubon Minnesota to develop a statewide wetland bird monitoring program to enable long-term monitoring of the status of wetland birds and the health of their wetland habitats. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Minnesota Native Bee Atlas

Subd. 03g \$790,000 TF

Robert Blair

U of MN
1980 Folwell Ave, #200
St Paul, MN 55108

Phone: (651) 644-1591

Email: blairrB@umn.edu

Web: <http://www.minnesotamasternaturalist.org>

Appropriation Language

\$790,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to supplement and enhance existing bee survey efforts by engaging citizens in helping to document the distribution and phenology of wild Minnesota bees and integrating data from all related bee survey efforts into a single publicly accessible, online tool and repository. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Reintroduction and Interpretation of Bison in Minnesota State Parks

Subd. 03h \$600,000 TF

Edward Quinn

MN DNR

500 Lafayette Rd, Box 39

St. Paul, MN 55155

Phone: (651) 259-5594

Email: edward.quinn@state.mn.us

Web: <http://www.dnr.state.mn.us/index.html>

Appropriation Language

\$600,000 the first year is from the trust fund to the commissioner of natural resources to preserve American bison by reintroducing bison to Minneopa State Park and provide interpretive learning opportunities at Blue Mounds and Minneopa State Parks. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Endangered Bats, White-Nose Syndrome, and Forest Habitat

Subd. 03i \$1,250,000 TF

Richard Baker

MN DNR

500 Lafayette Rd, Box 25

St. Paul, MN 55155

Phone: (651) 259-5073

Email: richard.baker@state.mn.us

Web: <http://www.dnr.state.mn.us/eco/nhnrp>

RESEARCH

Appropriation Language

\$1,250,000 the first year is from the trust fund to the commissioner of natural resources in cooperation with the University of Minnesota and the United States Forest Service to survey

and radio-track endangered bats to define and understand summer forest habitat use in order to minimize forestry impacts and mitigate white-nose syndrome disease impacts. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Assessing Contaminants in Minnesota Loons and Pelicans-Phase III

Subd. 03j \$141,000 TF

Carrol Henderson

MN DNR

500 Lafayette Rd, Box 25

St Paul, MN 55155

Phone: (651) 259-5104

Email: carrol.henderson@state.mn.us

Web: <http://www.dnr.state.mn.us>

Appropriation Language

\$141,000 the first year is from the trust fund to the commissioner of natural resources to continue to assess the potential impact of petroleum, dispersants, and heavy metal contaminants from the Deepwater Horizon oil spill in the Gulf of Mexico on the wintering habitat of Minnesota's common loons and white pelicans using radiotelemetry, geolocators, and contaminant analysis.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Movement and Seasonal Habitat Use of Minnesota Elk

Subd. 03k \$200,000 TF

Gino D'Angelo

MN DNR

35365 800th Ave

Madelia, MN 56062

Phone: (507) 642-8478

Email: gino.dangelo@state.mn.us

Web: <http://www.dnr.state.mn.us/wildlife/index.html>

RESEARCH

Appropriation Language

\$200,000 the first year is from the trust fund to the commissioner of natural resources to collect biological information about Minnesota elk, including movements and habitat use to enable long-term, sustainable management. This appropriation is contingent on a \$50,000 match from state or nonstate sources. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Genetic and Camera Techniques to Estimate Carnivore Populations

Subd. 03I \$200,000 TF

Ron Moen

U of MN - NRRRI

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Duluth, MN 55811

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Email: rmoen@nrri.umn.edu

Web: <http://www.d.umn.edu/~rmoen>

RESEARCH

Appropriation Language

\$200,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota - Duluth for the Natural Resources Research Institute to use genetic sampling and remote cameras to improve monitoring of distributions and estimate population sizes of carnivore species.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Aquatic and Terrestrial Reptile Habitat

Subd. 03m \$250,000 TF

Jennifer McGuire

University of St. Thomas

2115 Summit Ave

St. Paul, MN 55105

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Email: jtmcguire@stthomas.edu

Web: <http://www.stthomas.edu/biology/research/biogeochemistry.html>

Appropriation Language

\$250,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the University of St. Thomas in cooperation with the Three Rivers Park District to analyze the aquatic and terrestrial habitat for certain reptile species in urban lakes and to make specific recommendations to protect and enhance the habitat. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Digitization of Historic Gullions Ruffed Grouse Research

Subd. 03n \$75,000 TF

Kent Montgomery

Central Lakes College
501 West College Dr
Brainerd, MN 56401

Phone: (218) 855-8155

Email: kmontgomery@clcmn.edu

Web: www.clcmn.edu

Appropriation Language

\$75,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Central Lakes College to preserve the Gordon Gullion ruffed grouse data sets as permanent digital data files in order to improve accessibility to the information and inform forest wildlife conservation policies and practices.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Effects of Grazing Versus Fire for Prairie Management

Subd. 03o \$414,000 TF

Karen Oberhauser

U of MN

2003 Upper Buford Cir, 135 Skok Hall
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Email: oberh001@umn.edu

Web: <http://fwcb.cfans.umn.edu/oberhauser/>

RESEARCH

Appropriation Language

\$414,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to compare the effects of conservation grazing and prescribed fire on tallgrass prairie plants and pollinators in Minnesota in order to inform and improve land management practices. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Assessing Ecological Impact of St. Anthony Falls Lock Closure

Subd. 03p \$125,000 TF

Kathleen Boe

Minneapolis Riverfront Partnership
2522 Marshall St NE
Minneapolis, MN 55418

Phone: (612) 465-8780 x212

Email: kathleen.boe@minneapolisriverfrontpartnership.org

Web: <http://www.minneapolisriverfrontpartnership.org>

Appropriation Language

\$125,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the Minneapolis Riverfront Partnership to study the impact of altered river flow due to closure of the Upper Lock on the Mississippi River at St. Anthony Falls on the physical and biological characteristics of the river between the Coon Rapids Dam and Lock and Dam No. 1 in order to inform future river restoration efforts.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Foundational Dataset Characterizing Historic Forest Disturbance Impacts

Subd. 03q \$200,000 TF

Michael Falkowski

U of MN

1530 Cleveland Ave N, 115 Green Hall

St. Paul, MN 55108

Phone: (218) 726-6410

Email: mfalkows@umn.edu

Appropriation Language

\$200,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to quantify forest disturbance impacts over the past forty years on water quality, wildlife demographics, and wood fiber supply in order to identify management strategies that better respond to disturbance impacts and improve and sustain forest resources. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Hydrologic Effects of Contemporary Forest Practices in Minnesota

Subd. 03r \$150,000 TF

Diana Karwan

U of MN

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St. Paul, MN 55108

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Email: dlkarwan@umn.edu

RESEARCH

Appropriation Language

\$150,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to install hydrologic monitoring stations to collect water quantity and quality data from lands managed for timber production to better understand the relationship between harvest practices and water resources and related responses to changing climate and other disturbance factors in order to inform forest management practices. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Goblin Fern: Habitat Mitigation for Species Conservation

Subd. 03s \$61,000 TF

Bobby Henderson

Leech Lake Band of Ojibwe

115 Sixth St NW

Cass Lake, MN 56633

Phone: (218) 784-8620

Email: bobby.henderson@llojibwe.org

Appropriation Language

\$61,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the Leech Lake Band of Ojibwe to examine goblin fern populations, a threatened species in Minnesota, in relation to habitat degradation and to develop long-term habitat mitigation and species conservation strategies. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Subd. 04 Water Resources

Understanding Water Scarcity, Threats, and Values to Improve Management

Subd. 04a \$234,000 TF

Bonnie Keeler

U of MN

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RESEARCH

Appropriation Language

\$234,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to model and map statewide water scarcity and abundance; assess water-related risks to industry, municipalities, and ecosystems; and quantify the economic values of changes in water quality and quantity in order to inform long-term water sustainability strategies. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

A Novel Biofilm Technology for Water Nutrient Removal

Subd. 04b \$281,000 TF

Bo Hu

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Phone: (612) 625-4215

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Web: <http://bohu.cfans.umn.edu/>

RESEARCH**Appropriation Language**

\$281,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to develop a simulated lichen biofilm system that can be used to remove pollutants and recycle nutrients from storm water runoff and polluted lakes, ponds, and lagoons. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Biological Consequences of Septic Pollution in Minnesota Lakes

Subd. 04c \$364,000 TF

Heiko Schoenfuss

St. Cloud State University
720 Fourth Ave S WSB-273
St Cloud, MN 56301

Phone: (320) 308-3130

Email: hschoenfuss@stcloudstate.edu

Web: <http://web.stcloudstate.edu/aquatictox/>

RESEARCH

Appropriation Language

\$364,000 the first year is from the trust fund to the Board of Trustees of the Minnesota State Colleges and Universities system for St. Cloud State University to assess the presence of possible sources of contaminants of emerging concern in Minnesota lakes in order to determine their effects on fish health, understand the potential contribution from septic systems, and inform options for remediation and prevention to protect Minnesota lakes from these contaminants in the future. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Preventing Phosphorous from Entering Water Resources Through Drain Tiles

Subd. 04d \$505,000 TF

Kenneth Valentas

U of MN

1479 Gortner Ave, 140 Gortner Labs

St. Paul, MN 55108

Phone: (763) 595-0365

Email: valentas@umn.edu

RESEARCH

Appropriation Language

\$505,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to develop a new nanocomposite material made from biomass that is designed to adsorb phosphorus, nitrogen, and pesticides from storm water and drain tile runoff discharge for recycling back to agricultural lands. This appropriation is subject to Minnesota Statutes, section 116P.10.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Southeastern Minnesota Cover Crop and Soil Health Initiatives

Subd. 04e \$253,000 TF

Matt Drewitz

Board of Water and Soil Resources
261 Hwy 15 S
New Ulm, MN 56073

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Web: <http://www.bwsr.state.mn.us>

Appropriation Language

\$253,000 the first year is from the trust fund to the Board of Water and Soil Resources to promote cover crops as a means of protecting soil and water quality in southeastern Minnesota through training and education for local practitioners, economic analysis of implementation, and on-farm demonstration sites. This effort must be coordinated with the University of Minnesota Forever Green Initiative. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Southeast Minnesota Subsurface Drainage Impacts on Groundwater Recharge

Subd. 04f \$488,000 TF

Erik Smith

U.S. Geological Survey
2280 Woodale Dr
Mounds View, MN 55112

Phone: (763) 783-3136

Email: easmith@usgs.gov

Web: <http://mn.water.usgs.gov>

RESEARCH

Appropriation Language

\$488,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the United States Geological Survey to assess the relationship between agricultural drainage and water flow within the unique karst geology of southeast Minnesota to characterize the potential impacts of drainage on groundwater recharge and groundwater sustainability in the region. This appropriation is not subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Using Hydroacoustics to Monitor Sediment in Minnesota Rivers

Subd. 04g \$455,000 TF

Christopher Ellison

U.S. Geological Survey
2280 Woodale Dr
Mounds View, MN 55112

Phone: (763) 783-3121

Email: cellison@usgs.gov

Web: <http://mn-internal.cr.usgs.gov/mnlocal/index.html>

RESEARCH**Appropriation Language**

\$455,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the United States Geological Survey to install hydroacoustic equipment on the lower Minnesota and Mississippi Rivers to improve measurement and monitoring accuracy for suspended sediment and enhance ongoing sediment reduction efforts by state, federal, and local agencies. This appropriation is not subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Assessment of Irrigation Efficiencies in Benton County

Subd. 04h \$431,000 TF

Gerry Maciej

Benton Soil and Water Conservation District
14 Second Ave W
Foley, MN 56329

Phone: (320) 968-5300 x3

Email: gerry@soilandwater.org

Web: <http://www.soilandwater.org>

Appropriation Language

\$431,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Benton Soil and Water Conservation District to develop and implement a decision support system to increase irrigation efficiencies and provide outreach on irrigation best management practices. Software developed with this appropriation must be available in

the public domain. Project efforts should be coordinated with the Department of Natural Resources. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Shoreview Water Consumption and Groundwater Awareness Project

Subd. 04i \$54,000 TF

Mark Maloney

City of Shoreview
4600 Victoria St N
Shoreview, MN 55126

Phone: (651) 490-4651

Email: mmaloney@shoreviewmn.gov

Web: <http://shoreviewmn.gov>

Appropriation Language

\$54,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the city of Shoreview to provide biweekly water consumption data to at least 400 residential households for a two-year period to determine whether additional groundwater can be conserved with greater awareness of consumption data. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Subd. 05 Environmental Education

Trap Shooting Sports Facility Grants

Subd. 05a \$132,000 TF

Open

MN DNR
500 Lafayette Rd
St. Paul, MN 55155

Phone: Open

Email: [Open](#)

Web: [Open](#)

Appropriation Language

\$132,000 the first year is from the trust fund to the commissioner of natural resources for trap shooting sports facility grants under Minnesota Statutes, section 87A.10.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Connecting Students with Watersheds through Hands-On Learning

Subd. 05b \$400,000 TF

John Lenczewski

Minnesota Trout Unlimited
PO Box 845
Chanhassen, MN 55317

Phone: (612) 670-1629

Email: jlenczewski@comcast.net

Web: <http://mntu.org/>

Appropriation Language

\$400,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Minnesota Trout Unlimited to provide hands-on learning focused on water quality, groundwater, aquatic life, and watershed health stewardship. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Zumbro River Watershed Recreational Learning Stewardship Sites

Subd. 05c \$300,000 TF

Lawrence Svien

Zumbro Watershed Partnership
1485 Industrial Dr NW, Rm 102
Rochester, MN 55901

Phone: (507) 226-6787

Email: admin@zumbrowatershed.org

Web: <http://www.zumbrowatershed.org>

Appropriation Language

\$300,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the Zumbro Watershed Partnership to develop at least six recreational and educational sites on the Zumbro River with water quality demonstration elements and interpretative signage designed to encourage adoption of water protection practices. No more than 15 percent of this appropriation may be spent on site and construction consultation, planning, and design. Any plantings or restoration activities conducted with this appropriation must use native plant species according to the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Splash Screen: SciGirls Exploring Watersheds Using Mobile Technologies

Subd. 05d \$147,000 TF

Joan Freese

Twin Cities Public Television
172 Fourth St E
St. Paul, MN 55101

Phone: (651) 229-1339

Email: jfreese@tpt.org

Web: <http://www.tpt.org>

Appropriation Language

\$147,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Twin Cities Public Television to deliver an experiential, project-based educational program using mobile technologies to empower at least 200 middle school students in 4-H programs to engage in understanding and protecting local water resources.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Water Journey Camps

Subd. 05e \$25,000 TF

Beth Mercer-Taylor

U of MN
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St. Paul, MN 55108

Phone: (612) 624-9430

Email: bethmt@umn.edu

Web: <http://environment.umn.edu>

Appropriation Language

\$25,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to design and pilot two week-long summer camps for youth ages 6 to 11 focused around clean water and the Mississippi River and designed to get children outdoors exploring and engaged with the natural environment and creating educational materials to help their communities protect water quality.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Subd. 06 Aquatic and Terrestrial Invasive Species

Minnesota Invasive Terrestrial Plants and Pests Center

Subd. 06a \$5,000,000 TF

Robert Venette

U of MN

1992 Folwell Ave

St Paul, MN 55108

Phone: (612) 301-1405

Email: venet001@umn.edu

Web: <http://www.mitppc.umn.edu>

Appropriation Language

\$5,000,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota for the Invasive Terrestrial Plants and Pests Center established in Laws 2014, chapter 312, article 13, section 44, to conduct research to prevent, minimize, and mitigate the threats and impacts posed by invasive plants, pathogens, and pests to the state's prairies, forests, wetlands, and agricultural resources. This appropriation is available until June 30, 2023, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2023

Work Plan (PDF)

Emerald Ash Borer Ecological/Hydrological Impacts - Phase 2

Subd. 06b \$400,000 TF

Anthony D'Amato

U of MN
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St Paul, MN 55108

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Web: <http://www.forestry.umn.edu/silviclab/index.htm>

RESEARCH**Appropriation Language**

\$400,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to assess the potential impacts of emerald ash borer on Minnesota black ash forests and quantify potential impacts on native forest vegetation, invasive species spread, and hydrology. This appropriation is available until June 30, 2020, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2020

Work Plan (PDF)

Biological Control of Canada Thistle

Subd. 06c \$300,000 TF

Roger Becker

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411 Borlaug Hall, 1991 Upper Buford Cir
St. Paul, MN 55108

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Web: <http://appliedweeds.cfans.umn.edu/>

RESEARCH**Appropriation Language**

\$300,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to develop a biological control for Canada thistle, an invasive plant species in Minnesota. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Preventing a New Disease of Pines in Minnesota

Subd. 06d \$371,000 TF

Robert Blanchette

U of MN

1991 Upper Buford Cir, 495 Borlaug Hall

St. Paul, MN 55126

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Email: robertb@umn.edu

Web: <http://forestpathology.cfans.umn.edu/default.htm>

RESEARCH

Appropriation Language

\$371,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to establish early detection for heterobasidion, an invasive root rot fungus, and develop efforts to prevent its spread and reduce its impact. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Subd. 07 Air Quality, Climate Change, and Renewable Energy

Renewable and Sustainable Fertilizers Produced Locally

Subd. 07a \$1,000,000 TF

Alon McCormick

U of MN

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Minneapolis, MN 55455

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Web: <http://www.cems.umn.edu>

RESEARCH

Appropriation Language

\$1,000,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota for the Morris West Central Research and Outreach Center and Twin Cities Campus to develop and demonstrate new technologies aimed at enabling renewable and sustainable production of ammonia for fertilizer in a localized manner. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Reducing Emissions from Open Burning through Biomass Gasification

Subd. 07b \$268,000 TF

William Northrop

U of MN

111 Church St SE

Minneapolis, MN 55455

Phone: (612) 625 6854

Email: wnorthro@umn.edu

Appropriation Language

\$268,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota in cooperation with the Department of Natural Resources to characterize and promote distributed biomass gasification of wood waste as a means for producing renewable and sustainable energy in rural areas through a demonstration at the Department of Natural Resources regional office facility in New Ulm.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Building Deconstruction to Reduce Greenhouse Gas Emissions and Solid Waste

Subd. 07c \$1,000,000 TF

Part 1 - \$845,000

Steve Thomas

The NetWork for Better Futures d/b/a Better Futures Minnesota

1017 Olson Memorial Hwy

Minneapolis, MN 55405

Phone: (612) 455-6133

Email: stthomas@betterfutures.net

Web: <http://www.betterfuturesminnesota.com>

Part 2 - \$155,000

Victor Krause

U of MN - Duluth NRRI

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Email: vkrause@d.umn.edu

Web: <http://www.nrri.umn.edu>

Appropriation Language

\$845,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Better Futures Minnesota in cooperation with the Northwest Indian Opportunities Industrialization Center and \$155,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota - Duluth for the Natural Resources Research Institute to develop and test a model for implementing building deconstruction and material reuse as a competitive alternative to demolition for the purpose of reducing greenhouse gas emissions, reducing landfill waste, and providing job training. The project report must quantify and document greenhouse gas emissions reductions resulting from specific deconstruction techniques and materials reuses.

Project due to be completed: 6/30/2017

Work Plan - Part 1 (PDF)

Work Plan - Part 2 (PDF)

Subd. 08 Methods to Protect, Restore, and Enhance Land, Water, and Habitat

Prioritizing Future Management of North Shore Trout Streams

Subd. 08a \$416,000 TF

Lucinda Johnson

U of MN - NRRI

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Web: <http://www.nrri.umn.edu/staff/ljohnson.asp>

Appropriation Language

\$357,000 the first year is from the trust fund and \$59,000 the first year is from the Great Lakes protection account to the Board of Regents of the University of Minnesota - Duluth for the Natural Resources Research Institute to identify key areas in North Shore streams that supply the cold groundwater essential to sustaining trout fisheries, in order to focus habitat restoration, protection, and management efforts on the areas that are most essential for long-term stream health and sustainability. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Propagating Native Plants and Restoring Diverse Habitats

Subd. 08b \$495,000 TF

Rich Perrine

Martin County Soil and Water Conservation District
923 N State St, Ste 110
Fairmont, MN 56031

Phone: (507) 235-6680

Email: richard.perrine@mn.nacdnet.net

Web: <http://www.martinswcd.net>

Appropriation Language

\$495,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the Martin County Soil and Water Conservation District for a cooperative 13-county effort by Blue Earth, Brown, Cottonwood, Crow Wing, Faribault, Freeborn, Jackson, Lake, Le Sueur, Martin, Nicollet, Waseca, and Watonwan Counties to protect and expand native forest and prairie habitat for species in greatest conservation need in four regions of the state through collection and propagation of local ecotype native plants, habitat restoration efforts, and educational outreach. This appropriation is available until June 30, 2020, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2020

Work Plan (PDF)

Preserving and Protecting Minnesota Native Orchid Species

Subd. 08c \$167,000 TF

David Remucal

U of MN - Landscape Arboretum
3675 Arboretum Dr
Chaska, MN 55318

Phone: (952) 443-1418

Email: lnitabac@umn.edu

Web: <http://www.arboretum.umn.edu>

Appropriation Language

\$167,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota for the Minnesota Landscape Arboretum for propagation and cultivation research to enable long-term conservation of at least 15 selected species of the 48 native orchid species in Minnesota. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Acceleration of Minnesota Conservation Assistance - Final Phase

Subd. 08d \$1,000,000 TF

Tabor Hoek

Board of Water and Soil Resources
520 Lafayette Rd N
St Paul, MN 55155

Phone: (507) 537-7260

Email: tabor.hoek@state.mn.us

Web: <http://www.bwsr.state.mn.us>

Appropriation Language

\$1,000,000 the first year is from the trust fund to the Board of Water and Soil Resources for the final phase of a pilot program to provide grants to soil and water conservation districts and other units of local and state government for employment of staff to provide technical assistance to secure enrollment and retention of private lands in federal and state conservation programs. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Metro Conservation Corridors Phase VIII - Prairie, Forest, and Savanna Restoration

Subd. 08e \$276,000 TF

Tom Lewanski

Friends of the Mississippi River
360 N Robert St, Ste 400
St Paul, MN 55101

Phone: (651) 222-2193 x1

Email: tlewanski@fmr.org

Web: <http://www.fmr.org>

Appropriation Language

\$276,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the Friends of the Mississippi River for Phase VIII of the Metro Conservation Corridors partnership to conduct restoration activities on at least 195 acres of forest and savanna and at least 60 acres of prairie to preserve and increase wildlife habitat in the metropolitan area, as defined under Minnesota Statutes, section 473.121, subdivision 2, and portions of the surrounding counties. Expenditures are limited to the identified project corridor areas as defined in the work plan. A list of proposed restorations must be provided as part of the required work plan. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Metro Conservation Corridors Phase VIII - Enhancing Restoration Techniques for Improved Climate Resilience and Pollinator Conservation

Subd. 08f \$400,000 TF

Wiley Buck

Great River Greening
35 W Water St, Ste 201
St Paul, MN 55107

Phone: (651) 665-9500

Email: wbuck@greatrivergreening.org

Web: <http://www.greatrivergreening.org>

Appropriation Language

\$400,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Great River Greening for Phase VIII of the Metro Conservation Corridors partnership to pilot and evaluate innovative restoration techniques aimed at improving the

resilience of bur oak communities to changing climate conditions and enhancing prairie management to benefit pollinators with the help and engagement of citizen volunteers. Expenditures on restoration efforts are limited to the identified project corridor areas as defined in the work plan. A list of proposed restorations must be provided as part of the required work plan. This appropriation is available until June 30, 2018, by which point the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

MSU Moorhead Science Center Restoration & Monitoring

Subd. 08g \$527,000 TF

Brian Wisenden

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1104 Seventh Ave S
Moorhead, MN 56563

Phone: (701) 212-5801

Email: wisenden@mnstate.edu

Web: <http://web.mnstate.edu/wisenden>

Appropriation Language

\$527,000 the first year is from the trust fund to the Board of Trustees of the Minnesota State Colleges and Universities system for Minnesota State University Moorhead in cooperation with the Department of Natural Resources to restore and monitor 160 acres of prairie and riparian habitat and develop and disseminate monitoring protocols. This appropriation is contingent upon the donation of a 60-acre parcel to Minnesota State University Moorhead from the Minnesota State University Moorhead Alumni Foundation and is available until June 30, 2020, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2020

Work Plan (PDF)

Improving Community Forests Through Citizen Engagement

Subd. 08h \$800,000 TF

Ken Holman

MN DNR
500 Lafayette Rd N
St. Paul, MN 55155

Phone: (651) 259-5269

Email: ken.holman@state.mn.us

Web: <http://www.dnr.state.mn.us>

Appropriation Language

\$800,000 the first year is from the trust fund to the commissioner of natural resources to design and pilot a program, including grants to communities, to mobilize citizen volunteers to protect, improve, and maintain local forests in communities around the state. Participation is open to any municipality in the state and participating municipalities will be selected through a competitive proposal process that will include representation from both metropolitan and nonmetropolitan areas of the state. Trees planted using this appropriation must be species that are native to Minnesota. A participating municipality must provide a match of not less than 25 percent, up to half of which may be in the form of in-kind support. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Flood Recovery on Sargent Creek Duluth Habitat Restoration

Subd. 08i \$300,000 TF

Christopher Kleist

City of Duluth

411 First St W, Room 211

Duluth, MN 55802

Phone: (218) 355-0598

Email: ckleist@duluthmn.gov

Web: <http://www.duluthmn.gov>

Appropriation Language

\$300,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the city of Duluth to re-establish stable and natural streambanks with riparian and aquatic habitat restoration on at least 5,400 linear feet of Sargent Creek in Duluth destroyed during the flood of 2012.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Shoreland Protection for the Lower St. Croix River

Subd. 08j \$190,000 TF

Deb Ryun

St. Croix River Association
119 N Washington St
St Croix Falls, MN 54024

Phone: (715) 483-3300

Email: debryun@scramail.com

Web: <http://stcroixriverassociation.org/>

Appropriation Language

\$190,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the St. Croix River Association to provide technical assistance to landowners, local governments, realtors, and developers on shoreland conservation and protection of the lower St. Croix River. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Redwood and Renville Counties Outdoor Recreation and Conservation Master Plan

Subd. 08k \$75,000 TF

Mark Erickson

Redwood County and Renville County
105 Fifth St S, Ste 311
Olivia, MN 56277

Phone: (320) 523-3702

Email: mark_e@co.renville.mn.us

Web: <http://www.co.renville.mn.us>

Appropriation Language

\$75,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Renville County in cooperation with Redwood County to develop a joint outdoor recreation and conservation master plan to guide future development and protect cultural, historical, and natural resources in the Minnesota River Valley.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Subd. 09 Land Acquisition for Habitat and Recreation

State Parks and State Trails Land Acquisitions

Subd. 09a \$1,500,000 TF

Jennifer Christie

MN DNR

500 Lafayette Rd

St. Paul, MN 55155

Phone: (651) 259-5579

Email: jennifer.christie@state.mn.us

Web: <http://www.mndnr.gov>

Appropriation Language

\$1,500,000 the first year is from the trust fund to the commissioner of natural resources to acquire at least 335 acres for authorized state trails and critical parcels within the statutory boundaries of state parks. State park land acquired with this appropriation must be sufficiently improved to meet at least minimum management standards, as determined by the commissioner of natural resources. A list of proposed acquisitions must be provided as part of the required work plan. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Metropolitan Regional Park System Land Acquisition Phase 4

Subd. 09b \$1,000,000 TF

Deb Streets Jensen

Metropolitan Council

390 N Robert St

St. Paul, MN 55101

Phone: (651) 602-1554

Email: deb.jensen@metc.state.mn.us

Web: <http://www.metrocouncil.org/Parks.aspx>

Appropriation Language

\$1,000,000 the first year is from the trust fund to the Metropolitan Council for grants to acquire at least 133 acres of lands within the approved park unit boundaries of the metropolitan regional park system. This appropriation may not be used to purchase habitable residential

structures. A list of proposed fee title and easement acquisitions must be provided as part of the required work plan. This appropriation must be matched by at least 40 percent of nonstate money that must be committed by December 31, 2015, or the appropriation cancels. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

SNA Acquisition, Restoration, Enhancement and Public Engagement

Subd. 09c \$4,000,000 TF

Peggy Booth

MN DNR

500 Lafayette Rd, Box 25

St. Paul, MN 55155

Phone: (651) 259-5088

Email: peggy.booth@state.mn.us

Web: <http://www.dnr.state.mn.us/snas/index.html>

Appropriation Language

\$4,000,000 the first year is from the trust fund to the commissioner of natural resources to acquire at least 350 acres of lands with high-quality native plant communities and rare features to be established as scientific and natural areas as provided in Minnesota Statutes, section 86A.05, subdivision 5, restore and improve at least 550 acres of scientific and natural areas, and provide technical assistance and outreach. A list of proposed acquisitions must be provided as part of the required work plan. Land acquired with this appropriation must be sufficiently improved to meet at least minimum management standards, as determined by the commissioner of natural resources. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Native Prairie Stewardship and Prairie Bank Easement Acquisition

Subd. 09d \$3,325,000 TF

Judy Schulte

MN DNR

1241 East Bridge Street

Redwood Falls, MN 56283

Phone: (507) 822-0344

Email: judy.schulte@state.mn.us

Web: <http://www.dnr.state.mn.us>

Appropriation Language

\$3,325,000 the first year is from the trust fund to the commissioner of natural resources to acquire native prairie bank easements on at least 675 acres, prepare baseline property assessments, restore and enhance at least 1,000 acres of native prairie sites, and provide technical assistance to landowners. Of this amount, up to \$135,000 must be deposited in a conservation easement stewardship account. Deposits into the conservation easement stewardship account must be made upon closing on conservation easements or at a time otherwise approved in the work plan. A list of proposed easement acquisitions must be provided as part of the required work plan. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Metro Conservation Corridors Phase VIII - Coordination and Mapping and Conservation Easements

Subd. 09e \$515,000 TF

Kris Larson

Minnesota Land Trust
2345 University Ave W, Ste 400
St. Paul, MN 55114

Phone: (651) 647-9590

Email: klarson@mnland.org

Web: <http://www.mnland.org>

Appropriation Language

\$515,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the Minnesota Land Trust for Phase VIII of the Metro Conservation Corridors partnership to provide coordination and mapping for the partnership and to acquire permanent conservation easements on at least 120 acres of strategic ecological landscapes to protect priority natural areas in the metropolitan area, as defined under Minnesota Statutes, section 473.121, subdivision 2, and portions of the surrounding counties. A list of proposed easement acquisitions must be provided as part of the required work plan. Land acquired with this appropriation must be sufficiently improved to meet at least minimum management standards, as determined by the commissioner of natural resources. Expenditures are limited to the identified project corridor areas as defined in the work plan. Up to \$40,000 may be used for

coordination and mapping for the Metro Conservation Corridors. All conservation easements must be perpetual and have a natural resource management plan. A list of proposed easement acquisitions must be provided as part of the required work plan. This appropriation is available June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Metro Conservation Corridors Phase VIII - Strategic Lands Protection

Subd. 09f \$750,000 TF

Robert McGillivray

The Trust for Public Land
2610 University Ave W, Ste 300
St. Paul, MN 55114

Phone: (651) 999-5307

Email: Bob.McGillivray@tpl.org

Web: <http://www.tpl.org>

Appropriation Language

\$750,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with The Trust for Public Land for Phase VIII of the Metro Conservation Corridors partnership to acquire in fee at least 35 acres of high-quality priority state and local natural areas in the metropolitan area, as defined under Minnesota Statutes, section 473.121, subdivision 2, and portions of the surrounding counties. A list of proposed acquisitions must be provided as part of the required work plan. Land acquired with this appropriation must be sufficiently improved to meet at least minimum management standards, as determined by the commissioner of natural resources. Expenditures are limited to the identified project corridor areas as defined in the work plan. This appropriation may not be used to purchase habitable residential structures, unless expressly approved in the work plan. A list of fee title acquisitions must be provided as part of the required work plan. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Metro Conservation Corridors Phase VIII - Priority Expansion of Minnesota Valley National Wildlife Refuge

Subd. 09g \$500,000 TF

Deborah Loon

Minnesota Valley National Wildlife Refuge Trust Inc
2312 Seabury Ave
Minneapolis, MN 55406

Phone: (612) 801-1935

Email: dloon@mnvalleytrust.org

Web: <http://www.mnvalleytrust.org>

Appropriation Language

\$500,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the Minnesota Valley National Wildlife Refuge Trust, Inc. for Phase VIII of the Metro Conservation Corridors partnership to acquire in fee at least 100 acres of priority habitat for the Minnesota Valley National Wildlife Refuge in the metropolitan area, as defined under Minnesota Statutes, section 473.121, subdivision 2, and portions of the surrounding counties. A list of proposed acquisitions must be provided as part of the required work plan. Land acquired with this appropriation must be sufficiently improved to meet at least minimum management standards. Expenditures are limited to the identified project corridor areas as defined in the work plan. This appropriation may not be used to purchase habitable residential structures, unless expressly approved in the work plan. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Metro Conservation Corridors Phase VIII - Wildlife Management Area Acquisition

Subd. 09h \$400,000 TF

Patrick Rivers

MN DNR
500 Lafayette Rd
St. Paul, MN 55155

Phone: (651) 259-5209

Email: pat.rivers@state.mn.us

Web: <http://www.dnr.state.mn.us/index.html>

Appropriation Language

\$400,000 the first year is from the trust fund to the commissioner of natural resources for Phase VIII of the Metro Conservation Corridors partnership to acquire in fee at least 82 acres along the lower reaches of the Vermillion River in Dakota County within the Gores Pool Wildlife Management Area. Land acquired with this appropriation must be sufficiently improved to meet at least minimum management standards. This appropriation may not be used to purchase habitable residential structures, unless expressly approved in the work plan. This

appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2017

Work Plan (PDF)

Mesabi Trail Development Soudan to Ely - Phase II

Subd. 09i \$1,000,000 TF

Bob Manzoline

St. Louis and Lake Counties Regional Railroad Authority
111 Station Rd
Eveleth, MN 55734

Phone: (218) 744-2653

Email: bmanzoline@rrauth.com

Appropriation Language

\$1,000,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the St. Louis and Lake Counties Regional Railroad Authority for the right-of-way acquisition, design, and construction of segments of the Mesabi Trail, totaling approximately seven miles between Soudan and Ely. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Multi-benefit Watershed Scale Conservation on North Central Lakes

Subd. 09j \$950,000 TF

Lindsey Ketchel

Leech Lake Area Watershed Foundation
PO Box 455
Hackensack, MN 56452

Phone: (218) 675-5773

Email: llawf@tds.net

Web: <http://www.leechlakewatershed.org>

and

Dan Steward

Board of Water and soil Resources

1601 Minnesota Drive
Brainerd MN 56401

Phone: (218) 828-2598

Email: dan.steward@state.mn.us

Web: <http://www.bwsr.state.mn.us>

Appropriation Language

\$950,000 the first year is from the trust fund to the Board of Water and Soil Resources to secure permanent conservation easements on at least 480 acres of high-quality habitat in Crow Wing and Cass Counties. Of this amount, up to \$65,000 must be deposited in a conservation easement stewardship account; and \$54,000 is for an agreement with the Leech Lake Area Watershed Foundation in cooperation with Crow Wing County Soil and Water Conservation District and Cass County Soil and Water Conservation District. Deposits into the conservation easement stewardship account must be made upon closing on conservation easements or at a time otherwise approved in the work plan. A list of proposed easement acquisitions must be provided as part of the required work plan. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Conservation Easement Assessment and Valuation System Development

Subd. 09k \$250,000 TF

Bonnie Keeler

U of MN

1954 Buford Ave

St. Paul, MN 55108

Phone: (612) 626-2120

Email: keel0041@umn.edu

Web: <http://www.environment.umn.edu/contact-us/directory/bonnie-keeler/>

Appropriation Language

\$250,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota to assess the effectiveness of existing conservation easements acquired through state expenditures at achieving their intended outcomes of public value and ecological benefits and to develop a standardized, objective conservation easement valuation system for guiding future state investments in conservation easements to ensure the proposed environmental benefits are being achieved in a cost-effective manner. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Subd. 10 Emerging Issues Account

Emerging Issues Account

Subd. 10 \$1,000,000 TF

Susan Thornton

Legislative-Citizen Commission on Minnesota Resources
100 Rev Dr Martin Luther King Jr Blvd, Rm 65
St. Paul, MN 55155

Phone: (651) 296-6264

Email: susan.thornton@lccmr.leg.mn

Web: <http://www.lccmr.leg.mn>

Appropriation Language

\$1,000,000 the first year is from the trust fund to an emerging issues account authorized in Minnesota Statutes, section 116P.08, subdivision 4, paragraph (d).

Project due to be completed: 6/30/2017

Work Plan

Subd. 11 Administration and Contract Agreement Reimbursement

Legislative-Citizen Commission on Minnesota Resources (LCCMR)

Subd. 11a \$1,072,000 TF

Susan Thornton

Legislative-Citizen Commission on Minnesota Resources
100 Rev Dr Martin Luther King Jr Blvd, Rm 65
St. Paul, MN 55155

Phone: (651) 296-6264

Email: susan.thornton@lccmr.leg.mn

Web: <http://www.lccmr.leg.mn>

Appropriation Language

\$1,072,000 the first year is from the trust fund to the Legislative-Citizen Commission on Minnesota Resources for administration in fiscal years 2016 and 2017 as provided in Minnesota Statutes, section 116P.09, subdivision 5.

Project due to be completed: 6/30/2017

Work Plan

Contract Agreement Reimbursement

Subd. 11b \$135,000 TF

Amanda Graeber

MN DNR

500 Lafayette Rd, Box 10

St. Paul, MN 55155

Phone: (651) 259-5533

Email: amanda.graeber@state.mn.us

Web: <http://www.dnr.state.mn.us>

Appropriation Language

\$135,000 the first year is from the trust fund to the commissioner of natural resources at the direction of the Legislative-Citizen Commission on Minnesota Resources for expenses incurred for contract agreement reimbursement for the agreements specified in this section. The commissioner shall provide documentation to the Legislative-Citizen Commission on Minnesota Resources on the expenditure of these funds.

Project due to be completed: 6/30/2017

Work Plan (PDF)

2. FY2017 - MN Laws 2016, Chapter 186, Section 2

2016 ENVIRONMENT AND NATURAL RESOURCES TRUST FUND APPROPRIATIONS

M.L. 2016: Chapter 186, Section 2

Process for M.L. 2016 Appropriations

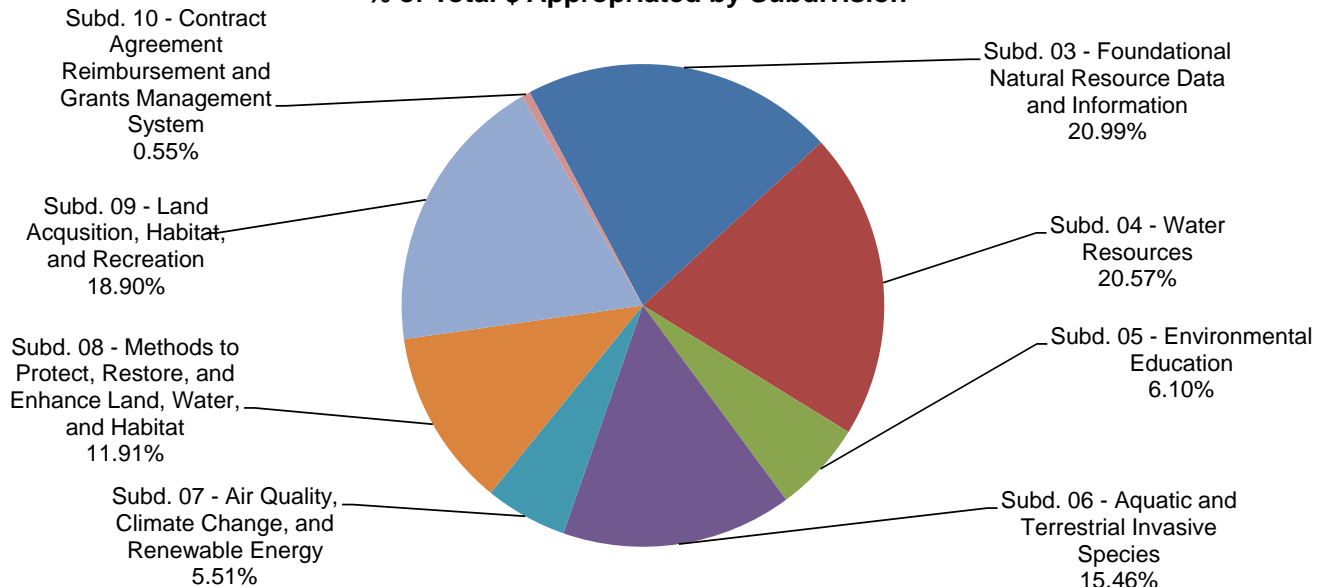
For the FY 2016 and FY 2017 biennium (July 1, 2015 - June 30, 2017), approximately \$46.3 million is available each year (total = \$92,674,000) for funding from the Environment and Natural Resources Trust Fund. In response to the 2016 Request for Proposal (RFP) 186 proposals requesting a total of approximately \$131 million were received. Through a competitive multi-step process, 97 of these proposals, requesting a total of \$70.4 million, were chosen to present to the LCCMR and 89 proposals were selected to receive a recommendation for funding to the 2016 MN Legislature. On 05/22/16 the Legislature adopted 79 of the recommendations, including 73 without any changes and 6 at a decreased or increased dollar amount; dropped 10 of the recommendations; and added 7 new appropriations for a total of 86 appropriations. On 05/31/16, 79 of the appropriations, totaling \$37,909,000, were signed into law by the Governor as M.L. 2016, Chapter 186 and 7 appropriations, totaling \$8,428,000, were line-item vetoed.

November 19 & December 9, 2014	2016 Funding Priorities Determined and RFP Adopted
December 16, 2014	2016 RFP Issued
May 11, 2015	2016 RFP Proposal Deadline (Received 185 Proposals totaling \$130,873,618)
September 16, 2015	2016 Selection of Proposals for Presentations
September 29 & 30 and October 1, 6, 7, & 8	2016 Proposal Presentations (Selected 97 proposals totaling \$70,379,775 to present)
October 20, 2015	2016 Allocations Recommendations
November, 2015 - February, 2016	Research Projects Recommended Undergo Peer Review
December 2, 2015	2016 Appropriation Language Review & Adoption
May 22, 2016	Appropriations adopted by MN Legislature
May 31, 2016	Appropriations signed into law by Governor
June 7, 2016	Project work plans approved by LCCMR
July 1, 2016	Projects can begin

Summary of Appropriations by Subdivision

Subdivision	\$ Recommended	# Appropriations
Subd. 03 - Foundational Natural Resource Data and Information	\$7,958,000	17
Subd. 04 - Water Resources	\$7,799,000	23
Subd. 05 - Environmental Education	\$2,312,000	9
Subd. 06 - Aquatic and Terrestrial Invasive Species	\$5,860,000	7
Subd. 07 - Air Quality, Climate Change, and Renewable Energy	\$2,090,000	5
Subd. 08 - Methods to Protect, Restore, and Enhance Land, Water, and Habitat	\$4,515,000	9
Subd. 09 - Land Acquisition, Habitat, and Recreation	\$7,165,000	7
Subd. 10 - Contract Agreement Reimbursement and Grants Management System	\$210,000	2
TOTAL	\$37,909,000	79

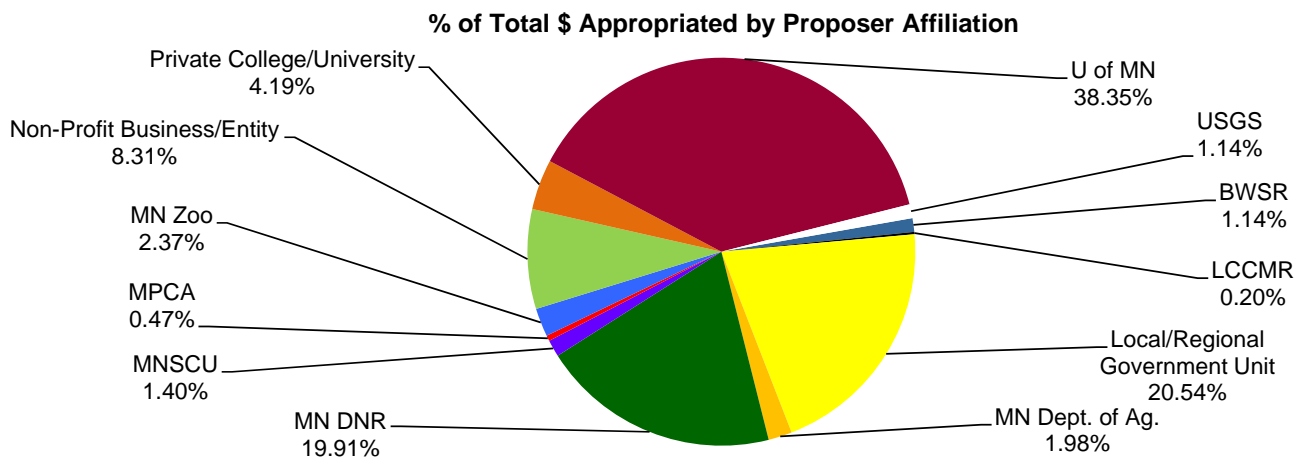
% of Total \$ Appropriated by Subdivision



2016 ENVIRONMENT AND NATURAL RESOURCES TRUST FUND APPROPRIATIONS M.L. 2016: Chapter 186, Section 2

Summary of Appropriations by Proposer Affiliation*		
Affiliation Type by Proposer Affiliation	\$ Recommended	# Appropriations
Minnesota Board of Water and Soil Resources (BWSR)	\$433,000	1
Legislative-Citizen Commission on Minnesota Resources (LCCMR)	\$75,000	1
Local/Regional Government Unit	\$7,787,000	11
Minnesota Department of Agriculture (MDA)	\$750,000	1
Minnesota Department of Natural Resources (MN DNR)	\$7,547,000	13
Minnesota State Colleges and Universities (MNSCU)	\$532,000	4
Minnesota Pollution Control Agency (MPCA)	\$180,000	1
Minnesota Zoo (MN Zoo)	\$897,000	2
Non-Profit Business/Entity	\$3,149,000	10
Private College/University	\$1,587,000	2
University of Minnesota (U of MN)	\$14,539,000	32
U.S. Geological Survey (USGS)	\$433,000	1
TOTAL	\$37,909,000	79

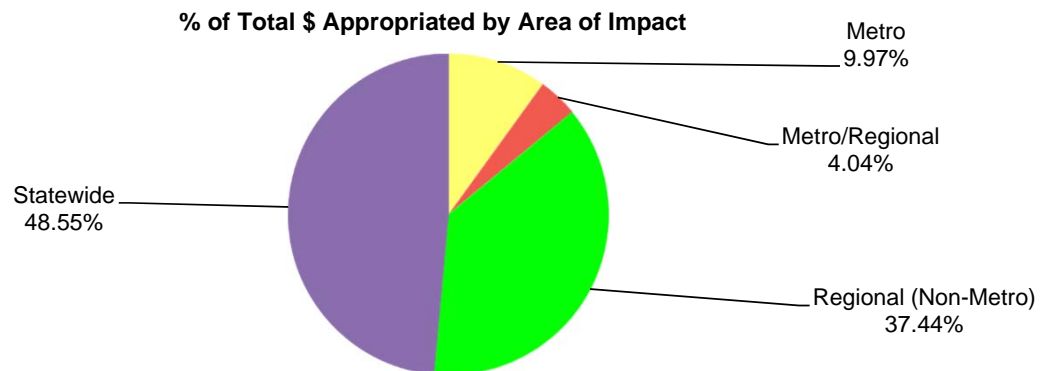
*Dollar amounts based on project manager affiliation listed in the proposal; some proposals have multiple partners with multiple affiliations and dollars requested distributed between them.



Summary of Appropriations by Area of Impact		
Area of Impact	\$ Recommended	# Proposals
Metro*	\$3,778,000	6
Metro/Regional	\$1,533,000	4
Regional (Non-Metro)**	\$14,194,000	30
Statewide	\$18,404,000	39
TOTAL	\$37,909,000	79

* "Metro" region includes the 11 counties of Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, Scott, Sherburne, Washington, and Wright.

** "Regional" means area of impact is less than "Statewide" but includes one or more regions of the state ("Northwest", "Northeast", "Central", "Southwest", or "Southeast") other than the 11-county "Metro" region.





ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

M.L. 2016 Appropriations: Chapter 186, Section 2

SUMMARY OF M.L. 2016 APPROPRIATIONS BY SUBDIVISION (\$37,909,000)

- SUBD. 03. Foundational Natural Resource Data and Information: \$7,958,000 – 17 Appropriations**
- Collection, analysis, mapping, and dissemination of foundational data and information pertaining to pollinators, prairie and forest ecosystems, lakes, rivers, springs, and wetlands, including the completion of a decade-long effort to update the National Wetlands Inventory for Minnesota.
 - Research and analysis to optimize natural resource management practices and conservation strategies for protecting native pollinator species, including bees and imperiled butterflies, and various other wildlife, including birds, small mammals, amphibians, fish, and elk.
 - Development and implementation of tools to help guide and prioritize habitat protection and natural resource management in response to environmental change and stressors, including the launch of a new statewide habitat monitoring network, development and piloting of a more cost-efficient forest inventory methodology, and development of tools to assess the relationships between vegetation and ground and surface water quality.
 - Research and evaluation of the risks for grassland wildlife, pollinators, butterflies, and game and non-game birds resulting from unintentional exposure to insecticides and other pesticides.
- SUBD. 04. Water Resources: \$7,799,000 – 23 Appropriations**
- Research and assessment to improve understanding about increasing instances of harmful algal blooms and inform the development of tools for predicting, tracking, and mitigating impacts of harmful algal bloom events.
 - Expansion and acceleration of a program to improve water quality and aquatic ecosystem health in streams and rivers through re-establishment of native mussel species.
 - Research and analysis initiatives to develop or improve technologies, materials, and techniques for treating or removing a variety of pollutants – including salts, metals, sulfates, pesticides, pharmaceuticals, and excess nutrients – from wastewater, stormwater, agricultural runoff, groundwater, and other polluted water bodies in order to ensure drinking water supply safety and protect aquatic species and water quality.
 - Development of various new technologies and methodologies to improve understandings about ground and surface water quality, supply, storage, and flow to inform drinking water protection and management strategies.
 - Assessments of the presence, flow, and interaction of bacteria and contaminants – including salts and insecticides – within natural environments to understand impacts on the health of soil and aquatic ecosystems.
 - Testing, monitoring, and assessment to quantify and improve agricultural and urban hydrology management practices and related water quality treatment options aimed at reducing soil erosion, improving peak water flow management, and decreasing bacteria and nutrient loading.
 - Outreach and coordination of partnership efforts involving citizens and agencies within watersheds to identify and promote implementation of pollution reduction strategies and conservation practices to improve water quality.
- SUBD. 05. Environmental Education: \$2,312,000 – 9 Appropriations**
- Delivery of hands-on education, training, and mentoring of students, teachers, and community volunteers in conservation practices and environmental stewardship through various initiatives throughout the state, including internships with soil and water conservation districts, service learning at school forests, youth-led community sustainability projects, expansion of the Master Water Steward Program, and classroom learning on topics including habitat and species conservation, water quality, and Dakota Indian environmental principles.
 - Development and delivery of a statewide initiative involving interrelated public forums, educational videos, and broadcast television programs focused on outdoor recreation, conservation, and natural resource issues.
- SUBD. 06. Aquatic and Terrestrial Invasive Species: \$5,860,000 – 7 Appropriations**
- Research and analysis initiatives aimed at preventing, minimizing, and mitigating the threats and impacts posed by invasive species, including expanded support for priority efforts of the Minnesota Invasive Terrestrial Plants and Pests Center, development and evaluation of ballast water treatment systems, evaluation of biocontrol agents for white nose syndrome in bats, and continued evaluation and propagation of Dutch elm disease resistant trees.
 - Implementation of innovative invasive species management efforts, including localized targeting of emergent terrestrial invasive species to halt spread and demonstration of carp control techniques at a sub-watershed scale.
- SUBD. 07. Air Quality, Climate Change, and Renewable Energy: \$2,090,000 – 5 Appropriations**
- Research, analysis, and development of various clean energy technologies and strategies, including thermoelectric energy generation from waste heat, integration of solar energy and wastewater recycling into agricultural facilities, and hydrogen fuel generation from wind power
 - Analysis and demonstration of alternatives for meeting localized community energy needs, particularly in low-income areas, through strategies including solar gardens and energy efficiency.
- SUBD. 08. Methods to Protect, Restore, and Enhance Land, Water, and Habitat: \$4,515,000 – 9 Appropriations**
- Research and analysis of methods for enhancing habitat for pollinators and game birds, including innovative uses of supplementary plantings in urban and agricultural landscapes, improved restoration practices based on how prairie fragments interact, strategies for prescribed burning to maximize habitat benefit, techniques to restore floodplain forests impacted by reed canary grass, and modified approaches to forest management to protect water quality.
 - Restoration of uplands, wetlands, and shorelands in the greater metropolitan area and blufflands near Winona.
- SUBD. 09. Land Acquisition, Habitat, and Recreation: \$7,165,000 – 7 Appropriations**
- Protection and restoration of priority, high quality, and/or unique lands, including 750 acres restored within Minnesota's Scientific and Natural Area system, 500 acres protected by conservation easements in Stearns County, and 200 acres acquired and restored for wellhead protection within the Lincoln Pipestone Rural Water System.
 - Expansion of outdoor recreational opportunities through construction and development of the Mesabi Trail, including a trail connection to Tower, and acquisition of 16 acres for a recreational trail and park in Fergus Falls.
- SUBD. 10. Administration: \$210,000 – 2 Appropriations**
- ENRTF project records system upgrade and project contract agreement reimbursement for non-state entities.



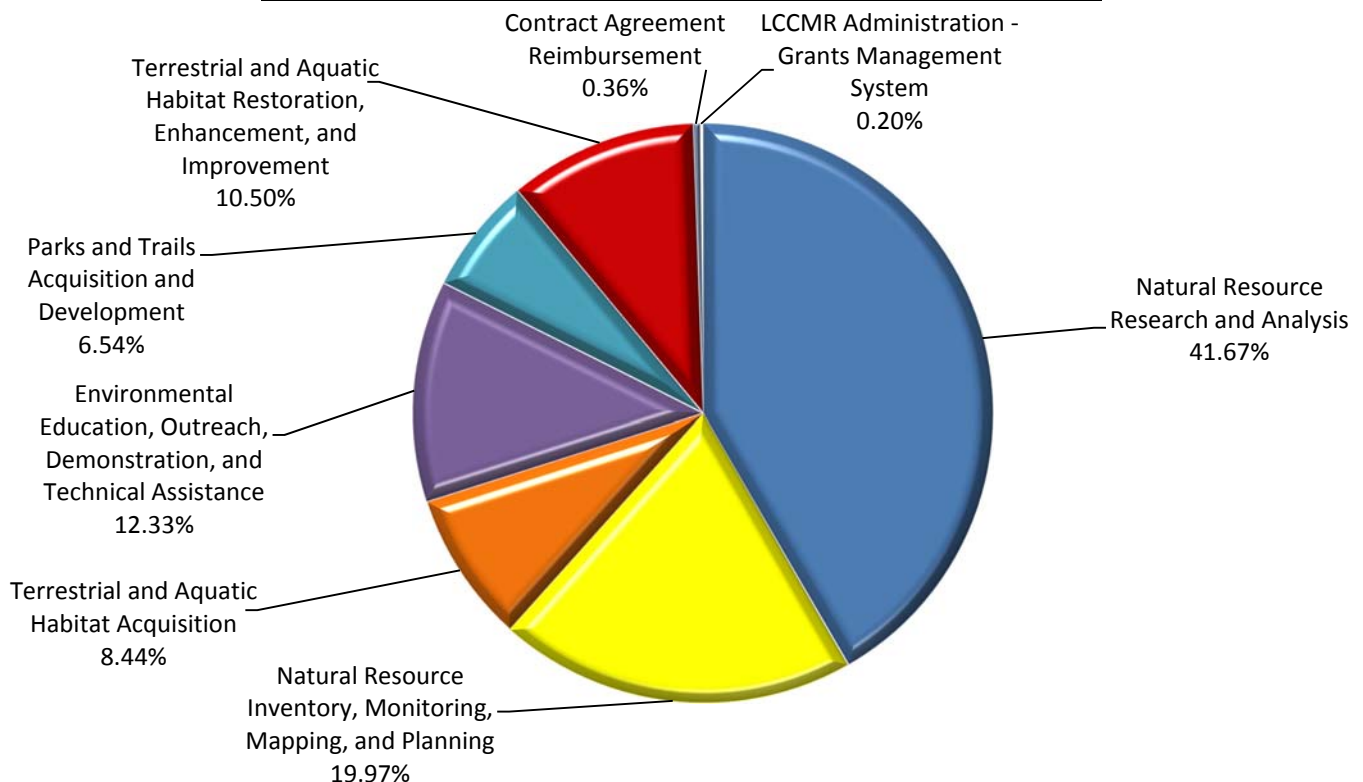
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

M.L. 2016 Appropriations: Chapter 186, Section 2

SUMMARY OF EXPECTED OUTCOMES ACROSS SUBDIVISIONS FOR ~\$37.9 MILLION

- **Natural Resource Research and Analysis: ~\$15.8 million**
Research and analysis efforts that will advance our knowledge about and provide strategies and recommendations for addressing issues relating to terrestrial and aquatic invasive species prevention, control, and mitigation; habitat monitoring and conservation; pollinator, plant, and animal species conservation, management, breeding, and reintroduction; habitat restoration practices; improvement of agricultural and forestry practices; clean energy technologies and strategies; climate change impacts and projections; effects of pesticide and insecticide exposure on wildlife and ecosystems; surface and ground water resources protection and sustainability; harmful algae blooms; drinking water and wastewater treatment; and technologies and processes for preventing and removing water contaminants.
- **Natural Resource Inventory, Monitoring, Mapping, and Planning: ~\$7.6 million**
Inventory, monitoring, mapping, and planning efforts to obtain critical information and guide relevant decisions and efforts over time, including completion of the National Wetlands Inventory update for Minnesota; acceleration of a state spring inventory; surveying and monitoring for population distributions of pollinators, mussels, invasive species, and various wildlife; assessments of surface and ground water hydrological processes; implementation of a statewide habitat monitoring network; surveying, monitoring, and modeling of aquatic ecosystems; data collection and planning for the development of a new forest inventory methodology; inventory, assessment, monitoring, and mapping efforts pertaining to stormwater management, agriculture, and forestry practices; inventories of microbes found in ballast water and bacteria found in groundwater; monitoring and mapping of groundwater flow; and planning efforts for potential elk reintroductions, habitat restoration and stewardship, and clean energy investment.
- **Environmental Education, Outreach, Demonstration, and Technical Assistance: ~\$4.7 million**
Environmental education, outreach, demonstration, and technical assistance efforts that will engage and educate Minnesotans on topics including ecology, pollinators, plant and wildlife species, invasive species, harmful algae blooms, environmental stewardship and resource sustainability, lead ammunition alternative options, water resources, outdoor recreation, climate change, and habitat protection and restoration; *demonstrate* options for water quality protection practices, water treatment technologies, invasive carp management, alternative agricultural and horticultural practices, and clean energy; and *provide training and technical assistance* on utilizing new natural resource tools and datasets, pollution reduction and wastewater treatment practices, invasive species identification and reporting, and natural resource conservation and management practices and options.
- **Terrestrial and Aquatic Habitat Restoration, Enhancement, and Improvement ~\$4.0 million**
Restoration, enhancement, and improvement activities on an estimated 1,216 acres, including 2.61 miles of shoreline; activities performed will include prescribed burning, soil preparation, seeding, native vegetation installation, woody encroachment removal, invasive species control, and monitoring and evaluation.
- **Terrestrial and Aquatic Habitat Acquisition: ~\$3.2 million**
Acquisition of an estimated 710 acres in a combination of fee title (210 acres, including 0.2 miles of shoreline) and conservation easements (500 acres); permanently protected areas will include forests, prairies, grasslands, wetlands, shorelands, and other habitat.
- **Parks and Trails Acquisition and Development: ~\$2.5 million**
Acquisition of an estimated 17 acres to create a new trail and park in the City of Fergus Falls; *design and construction* of trails in northern Minnesota, including a six mile segment of the Mesabi Trail and a local trail connection to the Mesabi Trail and new kayak route near the City of Tower.
- **Contract Agreement Reimbursement: \$135,000**
 Administering of contract agreement reimbursement for projects of non-state entities.
- **LCCMR Administration Grants Management System: \$75,000**
 To upgrade and modernize the LCCMR project records system and grants management processes.

% OF EXPECTED OUTCOMES ACROSS SUBDIVISIONS



M.L. 2016 Projects

MN Laws 2016, Chapter 186, Section 2 (beginning July 1, 2016)

For the FY 2016 and FY 2017 biennium (July 1, 2015 - June 30, 2017), approximately \$46.3 million is available each year (total = \$92,674,000) for funding from the Environment and Natural Resources Trust Fund (ENRTF). In response to the 2016 Request for Proposal (RFP) 186 proposals requesting a total of approximately \$131 million were received. Through a competitive, multi-step process, 97 of these proposals, requesting a total of \$70.4 million, were chosen to present to the LCCMR and 89 of those proposals were selected to receive a recommendation for funding to the 2016 MN Legislature to collectively receive \$46.3 million in funding from the ENRTF. The Legislature adopted 79 of the recommendations, including 73 without any changes and 6 at a decreased or increased dollar amount; dropped 10 of the recommendations; and added 7 new appropriations for a total of 86 appropriations. On 05/31/16, 79 of the appropriations, totaling \$37,909,000, were signed into law by the Governor and 7 appropriations, totaling \$8,428,000, were line-item vetoed.

LINKS TO:

- [PDF list](#) of the M.L. 2016 projects adopted by the Legislature and signed by the Governor.
- [Summary](#) of appropriations and expected outcomes
- Additional information on LCCMR's [M.L. 2016 proposal and funding process](#)

NOTE: For all projects, [contact](#) us to obtain the most up-to-date work programs for current projects (project updates are required twice each year) or the final reports of completed projects.

When available, we have provided links to web sites related to the project. The sites linked to this page are not created, maintained, or endorsed by the LCCMR office or the Minnesota Legislature.

Subd. 03 Foundational Natural Resource Data and Information

[03a](#) Data-Driven Pollinator Conservation Strategies - **RESEARCH**

[03b](#) Native Bee Surveys in Minnesota Prairie and Forest Habitats

[03c1](#) Prairie Butterfly Conservation, Research, and Breeding - Phase II - **RESEARCH**

[03c2](#) Prairie Butterfly Conservation, Research, and Breeding - Phase II - **RESEARCH**

[03d](#) Statewide Monitoring Network for Changing Habitats in Minnesota

[03e](#) Completing National Wetland Inventory Update for Minnesota

[03f](#) Assessment Tool for Understanding Vegetation Growth Impacts on Groundwater Recharge

[03g](#) Sentinel Lakes Monitoring and Data Synthesis - Phase III - **RESEARCH**

[03h](#) State Spring Inventory for Resource Management and Protection - Phase II

[03i](#) Enhancing Understanding of Minnesota River Aquatic Ecosystem

- 03j Improving Brook Trout Stream Habitat through Beaver Management
- 03k Evaluate Temperature, Streamflow, and Hydrogeology Impact on Brook Trout Habitat
- 03l Restoration of Elk to Northeastern Minnesota
- 03m Game and Nongame Bird Pesticide Exposure - **RESEARCH**
- 03n Evaluating Insecticide Exposure Risk for Grassland Wildlife on Public Lands - **RESEARCH**
- 03o Development of Innovative Cost-Saving Methodology for Forest Inventory
- 03p Evaluation of Tree Retention Guidelines Pertaining to Wildlife
- 03q Determine Impacts on Wildlife From Emerald Ash Borer Infection of Black Ash Forests - **RESEARCH**
- ~~03r Aggregate Mapping - GOVERNOR VETO~~
- ~~03s Pineland Sands Lands and Water Study - GOVERNOR VETO~~
- ~~03t Natural Resources Research Institute - GOVERNOR VETO~~

Subd. 04 Water Resources

- 04a Tracking and Preventing Harmful Algal Blooms - **RESEARCH**
- 04b Assessing the Increasing Harmful Algal Blooms in Minnesota Lakes - **RESEARCH**
- 04c Restoring Native Mussels in Streams and Lakes
- 04d Assessing Techniques for Eliminating Contaminants to Protect Native Fish and Mussels - **RESEARCH**
- 04e Assessing Neonicotinoid Insecticide Effects on Aquatic and Soil Communities - **RESEARCH**
- 04f Bacterial Assessment of Groundwater Supplies Used for Drinking Water - **RESEARCH**
- 04g Understanding Bedrock Fracture Flow to Improve Groundwater Quality
- 04h Protection of State's Confined Drinking Water Aquifers - Phasell - **RESEARCH**
- 04i Assessment of Surface Water Quality With Satellite Sensors - **RESEARCH**
- 04j Development of Innovative Sensor Technologies for Water Monitoring - **RESEARCH**
- 04k Wastewater Treatment Process Improvements - **RESEARCH**
- 04l Membrane-Based Process for Decentralized Drinking Water Production - **RESEARCH**
- 04m Analyzing Alternative for Municipal Wastewater Treatment
- 04n Understanding Impacts of Salt Usage on Minnesota Lakes, Rivers, and Groundwater - **RESEARCH**
- 04o Microbes for Salt and Metal Removal - **RESEARCH**
- 04p Engineered Biofilter for Sulfate and Metal Removal from Mine Waters - **RESEARCH**
- 04q Developing Biosponge Technology for Removal of Nitrates from Minnesota Waters - **RESEARCH**
- 04r Morrison County Performance Drainage and Hydrology Management
- 04s Agricultural and Urban Runoff Water Quality Treatment Analysis - Phase II
- 04t Surface Water Bacterial Treatment System Pilot Project

- 04u Assessing Effectiveness of Wetland Restorations for Improved Water Quality
- 04v Integrating Targeted Watershed Planning Tools with Citizen Involvement - **RESEARCH**
- 04w Roseau Lake Watershed Targeted Water Quality Improvement

Subd. 05 Environmental Education

- 05a Minnesota Conservation Apprentice Academy
- 05b School Forests Outdoor Classrooms
- 05c Youth-Led Sustainability Projects in 50 Minnesota Communities - Phase III
- 05d New Prairie Sportsman Statewide Broadcast Video Project
- 05e Wildlife and Habitat Conservation Education for Southwest Minnesota High Schools
- 05f Standards-Based Dakota Indian Land Stewardship Education
- 05g Wolf Management Education in the Classroom - Phase II
- 05h Master Water Steward Program Expansion
- 05i Promoting Water Quality Stewardship through Student Mentoring and River Monitoring
- 05j ~~Wildlife Science Center~~ - GOVERNOR VETO

Subd. 06 Aquatic and Terrestrial Invasive Species

- 06a Minnesota Invasive Terrestrial Plants and Pests Center - Phase III - **RESEARCH**
- 06b Developing Membrane Filtration System to Treat Lake Superior Ballast Water - **RESEARCH**
- 06c Advancing Microbial Invasive Species Monitoring from Ballast Discharge - **RESEARCH**
- 06d Biological Control of White Nose Syndrome in Bats - Phase II - **RESEARCH**
- 06e1 Elimination of Target Invasive Plant Species - Phase II
- 06e2 Elimination of Target Invasive Plant Species - Phase II
- 06f Dutch Elm Disease Resistance - Phase II - **RESEARCH**
- 06g Invasive Carp Management Research in Lake Nokomis Subwatershed

Subd. 07 Air Quality, Climate Change, and Renewable Energy

- 07a Community Solar Garden Installation
- 07b Waste Heat Recovery with Efficient Thermoelectric Energy Generators - **RESEARCH**
- 07c Hydrogen Fuel from Wind-Produced Renewable Ammonia - **RESEARCH**
- 07d Utilization of Dairy Farm Wastewater for Sustainable Production
- 07e Solar Energy Utilization for Minnesota Swine Farms - Phase II

Subd. 08 Methods to Protect, Restore, and Enhance Land, Water, and Habitat

- 08a Bee Pollinator Habitat Enhancement - Phase II

- 08b Measuring Pollen and Seed Dispersal for Prairie Fragment Connectivity - **RESEARCH**
- 08c Establishment of Permanent Habitat Strips Within Row Crops
- 08d Evaluate Prescribed Burning Techniques to Improve Habitat Management for Brushland Species - **RESEARCH**
- 08e Controlling Reed Canary Grass to Regenerate Floodplain Forest - **RESEARCH**
- 08f Forest Management for Mississippi River Drinking Water Protection
- 08g Upland, Wetland, and Shoreline Restoration in Greater Metropolitan Area
- 08h Bluffland Restoration and Monitoring in Winona
- 08i Champlin Mill Pond Shoreland Restoration
- 08j ~~Pollinator Highway Demonstration Projects~~ - GOVERNOR VETO

Subd. 09 Land Acquisition, Habitat and Recreation

- 09a Scientific and Natural Area Acquisition and Restoration
- 09b Minnesota Point Pine Forest Scientific and Natural Area Acquisition
- 09c Conservation Easements in the Avon Hills - Phase III
- 09d Lincoln Pipestone Rural Water System Acquisition for Wellhead Protection
- 09e Mesabi Trail Segment from Highway 135 to Town of Embarrass
- 09f Tower Historic Harbor Trail Connections
- 09g Otter Tail River Recreational Trail Acquisition
- 09h ~~State Park and Trail Enhancement~~ - GOVERNOR VETO
- 09i ~~Douglas County Regional Park and Trail Planning, Development or Acquisitions~~ - GOVERNOR VETO

Subd. 10 Administration

- 10a Contract Agreement Reimbursement
- 10b Grants Management System

Funding Source:

Environment and Natural Resources Trust Fund (TF)

MN Laws 2016, Chapter 186, Section 2

Subd. 03 Foundational Natural Resource Data and Information

Data-Driven Pollinator Conservation Strategies

Subd. 03a \$520,000 TF

Daniel Cariveau

U of MN

1980 Folwell Ave

Falcon Heights, MN 55108

Phone: (970) 391-0783

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Web: <http://www.dancariveau.com>

RESEARCH

Appropriation Language

\$520,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to improve understanding of the relationships and interactions between native bee pollinators and rare and declining plant species and to determine optimal placement and species plantings for pollinator habitat in order to develop guidelines for planning, designing, and planting pollinator habitat. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Native Bee Surveys in Minnesota Prairie and Forest Habitats

Subd. 03b \$600,000 TF

Crystal Boyd

MN DNR

500 Lafayette Rd

St. Paul, MN 55155

Phone: (651) 259-5699

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Web: <http://www.dnr.state.mn.us/mbs/grasslandbees.html>

Appropriation Language

\$600,000 the second year is from the trust fund to the commissioner of natural resources to continue to assess the current status and distribution of native bee pollinators in Minnesota by expanding surveys into the prairie-forest border region and facilitating interagency collaboration and public outreach on pollinators. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Prairie Butterfly Conservation, Research, and Breeding - Phase II

Subd. 03c \$750,000 TF

Subd. 03c1 \$421,000 TF

Erik Runquist

Minnesota Zoological Garden
13000 Zoo Blvd
Apple Valley, MN 55124

Phone: (952) 431-9200

Email: erik.runquist@state.mn.us

Web: <http://www.mnzoo.org>

Subd. 03c2 \$329,000 TF

Robert Dana

MN DNR
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St. Paul, MN 55155

Phone: (952) 431-9200

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Web: <http://www.dnr.state.mn.us>

RESEARCH

Appropriation Language

\$750,000 the second year is from the trust fund. Of this amount, \$421,000 is to the Minnesota Zoological Garden and \$329,000 is to the commissioner of natural resources in collaboration with the United States Fish and Wildlife Service to continue efforts to prevent the extinction of imperiled native Minnesota butterfly species through breeding, research, field surveys, and potential reintroduction. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan - Runquist (Subd. 03c1) (PDF)

Work Plan - Dana (Subd. 03c2) (PDF)

Statewide Monitoring Network for Changing Habitats in Minnesota

Subd. 03d \$500,000 TF

Hannah Texler

MN DNR

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St. Paul, MN 55155

Phone: (651) 259-5058

Email: hannah.texler@state.mn.us

Web: <http://www.dnr.state.mn.us/mbs/index.html>

Appropriation Language

\$500,000 the second year is from the trust fund to the commissioner of natural resources to develop a consolidated statewide network of permanent habitat monitoring sites in prairies, forests, and wetlands to help guide and prioritize habitat protection and management decisions in response to environmental change. The design and testing methodologies of monitoring plots must address the status of pollinators and pollination. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Completing National Wetland Inventory Update for Minnesota

Subd. 03e \$1,500,000 TF

Steve Kloiber

MN DNR

500 Lafayette Rd

St. Paul, MN 55155

Phone: (651) 259-5164

Email: steve.kloiber@state.mn.us

Web: http://www.dnr.state.mn/eco/wetlands/nwi_proj.html

Appropriation Language

\$1,500,000 the second year is from the trust fund to the commissioner of natural resources to complete the update and enhancement of wetland inventory maps for counties in central and northwestern Minnesota. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Assessment Tool for Understanding Vegetation Growth Impacts on Groundwater Recharge
Subd. 03f \$212,000 TF

Gene-Hua Ng (Crystal)

U of MN
310 Pillsbury Dr SE
Minneapolis, MN 55455

Phone: (612) 624-9243

Email: gcng@umn.edu

RESEARCH

Appropriation Language

\$212,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to develop a statewide assessment tool to help understand the relationship between vegetation growth and impacts on groundwater recharge under changing land use and climate. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Sentinel Lakes Monitoring and Data Synthesis - Phase III

Subd. 03g \$401,000 TF

Melissa Trembl

MN DNR
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St. Paul, MN 55155

Phone: (651) 259-5231

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Web: <http://www.dnr.state.mn.us/fisheries/management/research.html>

Appropriation Language

\$401,000 the second year is from the trust fund to the commissioner of natural resources for the third and final phase of a monitoring and multidisciplinary research effort on 25 sentinel lakes in Minnesota, which will integrate and synthesize previously collected data to enhance understanding of how lakes respond to large-scale environmental stressors and provide for

improved ability to predict and respond to lake changes for water and fisheries management. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

State Spring Inventory for Resource Management and Protection - Phase II

Subd. 03h \$370,000 TF

Jim Berg

MN DNR

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St. Paul, MN 55155

Phone: (651) 259-5680

Email: jim.berg@state.mn.us

Web: <http://www.dnr.state.mn.us/waters/index.html>

Appropriation Language

\$370,000 the second year is from the trust fund to the commissioner of natural resources to continue a systematic inventory of springs statewide to provide fundamental data needed to maintain spring flows and protect groundwater-dependent resources. Increased outreach to the public and other entities must be conducted to assist in the identification, documentation, and publication of spring locations. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Enhancing Understanding of Minnesota River Aquatic Ecosystem

Subd. 03i \$500,000 TF

Tony Sindt

MN DNR

20596 Hwy 7

Hutchinson, MN 55350

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Web: <http://www.dnr.state.mn.us/fishwildlife/index.html>

Appropriation Language

\$500,000 the second year is from the trust fund to the commissioner of natural resources to accelerate collection of baseline data to enhance understanding of the Minnesota River ecosystem, measure future impacts of changing climate and landscapes on the aquatic ecosystem, and guide future management efforts. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Improving Brook Trout Stream Habitat through Beaver Management

Subd. 03j \$225,000 TF

Andrew Hafs

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Bemidji, MN 56601

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Email: ahafs@bemidjistate.edu

Web: <http://www.bemidjistate.edu/directory/facstaff/ahafs/>

Appropriation Language

\$225,000 the second year is from the trust fund to the Board of Trustees of the Minnesota State Colleges and Universities system for Bemidji State University to quantify how beaver activity influences habitat quality in streams for brook trout in northeastern Minnesota in order to improve current and future management practices. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Evaluate Temperature, Streamflow, and Hydrogeology Impact on Brook Trout Habitat

Subd. 03k \$115,000 TF

Bob Tipping

Minnesota Geological Survey
2609 Territorial Rd
St. Paul, MN 55114

Phone: (612) 626-5437

Email: tippi001@umn.edu

Web: <http://www.mngs.umn.edu/index.html>

Appropriation Language

\$115,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for the Minnesota Geological Survey to evaluate links between southeastern Minnesota stream temperatures, trout habitat, and bedrock hydrogeology to improve trout stream management. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Restoration of Elk to Northeastern Minnesota

Subd. 03I \$300,000 TF

James Forester

U of MN
2003 Upper Buford Cir, 135 Skok Hall
St. Paul, MN 55108

Phone: (612) 626-6721

Email: jdforest@umn.edu

Web: <http://fwcb.cfans.umn.edu/forester/index.html>

RESEARCH

Appropriation Language

\$300,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota in cooperation with the Fond du Lac Band and Rocky Mountain Elk Foundation to determine the habitat suitability and levels of public support for restoring elk to northeastern Minnesota. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Game and Nongame Bird Pesticide Exposure

Subd. 03m \$349,000 TF

Julia Ponder

U of MN
1920 Fitch Ave

St. Paul, MN 55108

Phone: (612) 624-3431

Email: ponde003@umn.edu

Web: <http://www.TheRaptorCenter.org>

RESEARCH

Appropriation Language

\$349,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to evaluate the potential risk to game and nongame birds from exposure to neonicotinoid-treated agricultural seeds. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Evaluating Insecticide Exposure Risk for Grassland Wildlife on Public Lands

Subd. 03n \$250,000 TF

Nicole Davros

MN DNR

35365 800th Ave

Madelia, MN 56062

Phone: (507) 642-8478 x225

Email: nicole.davros@state.mn.us

Web: <http://www.dnr.state.mn.us/wildlife/index.html>

Appropriation Language

\$250,000 the second year is from the trust fund to the commissioner of natural resources to evaluate exposure risks of grassland wildlife to soybean aphid insecticides, to guide grassland management in farmland regions of Minnesota for the protection of birds, beneficial insects, and other grassland wildlife. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Development of Innovative Cost-Saving Methodology for Forest Inventory

Subd. 03o \$800,000 TF

Dennis Kepler
MN DNR
483 Peterson Rd
Grand Rapids, MN 55744

Phone: (218) 322-2512

Email: dennis.kepler@state.mn.us

RESEARCH

Appropriation Language

\$800,000 the second year is from the trust fund to the commissioner of natural resources to develop and pilot a new and more cost-effective methodology for an enhanced stand-based forest inventory, with the goal of extending the methodology statewide. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Evaluation of Tree Retention Guidelines Pertaining to Wildlife

Subd. 03p \$232,000 TF

Gerald Niemi

U of MN - NRRRI
5013 Miller Trunk Hwy
Duluth, MN 55811

Phone: (218) 720-4270

Email: gniemi@nrri.umn.edu

Web: <http://www.nrri.umn.edu>

RESEARCH

Appropriation Language

\$232,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for the Natural Resources Research Institute in Duluth to assess the effectiveness of the Minnesota Forest Resources Council tree retention guidelines in sustaining Minnesota's wildlife populations, by quantifying and evaluating the impacts on birds, small mammals, and amphibian diversity. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Determine Impacts on Wildlife From Emerald Ash Borer Infection of Black Ash Forests

Subd. 03q \$334,000 TF

Gerald Niemi

U of MN - NRRRI

5013 Miller Trunk Hwy

Duluth, MN 55811

Phone: (218) 720-4270

Email: gniemi@nrri.umn.edu

Web: <http://www.nrri.umn.edu>

Appropriation Language

\$334,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for the Natural Resources Research Institute in Duluth to assess impacts of emerald ash borer and adaptive management on wildlife diversity in black ash forests and to develop recommendations to mitigate wildlife impacts. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

GOVERNOR VETO

~~Aggregate Mapping~~

~~Subd. 03r \$1,500,000 TF~~

~~**TBD**~~

~~MN DNR~~

~~500 Lafayette Rd~~

~~St. Paul, MN 55155~~

~~**Phone:** TBD~~

~~**Email:** TBD~~

~~**Web:** <http://www.dnr.state.mn.us/eco/mcbs/index.html>~~

~~**Appropriation Language**~~

~~\$1,500,000 the second year is from the trust fund to the commissioner of natural resources to map the extent and quality of aggregate resources in counties that have not previously been mapped. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.~~

~~Project due to be completed: 6/30/2019~~

~~Work Plan: PENDING~~

GOVERNOR VETO

~~**Pineland Sands Lands and Water Study**~~

~~Subd. 03s — \$1,500,000 TF~~

~~TBD~~

~~MN DNR~~

~~500 Lafayette Rd~~

~~St. Paul, MN 55155~~

~~Phone: TBD~~

~~Email: TBD~~

~~Web: <http://www.dnr.state.mn.us/eco/mcbs/index.html>~~

Appropriation Language

~~\$1,500,000 the second year is from the trust fund to the commissioner of natural resources to study the impact of changes in land use from forest land to irrigated agriculture in the Pineland Sands aquifer along the Crow Wing River. The commissioner must notify the public about the study and hold an open house in the study area to inform the community on potential impacts to surface water and groundwater in the area. This appropriation is available until June 30, 2021, and is not subject to Minnesota Statutes, sections 116P.05, subdivision 2, paragraph (b), and 116P.09, subdivision 4. The commissioner must submit or present a status update on the study to the chairs and ranking minority members of the house of representatives and senate committees and divisions with jurisdiction over the environment and natural resources by January 15, 2017.~~

~~Project due to be completed: 6/30/2021~~

~~Work Plan: Not required per exemption granted in MN Laws 2016, Chp. 186, Sec. 2, Subd. 3(s).~~

GOVERNOR VETO

~~**Natural Resources Research Institute**~~

~~Subd. 03t — \$1,100,000 TF~~

~~TBD~~

~~U of MN — NRR~~

~~5013 Miller Trunk Hwy~~

~~Duluth, MN 55811~~

~~Phone: TBD~~

Email: TBD

Web: <http://www.nrri.umn.edu>

Appropriation Language

~~\$1,100,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for academic and applied research through MnDRIVE at the Natural Resources Research Institute for projects that include, but are not limited to, the creation of a portfolio of waterborne sulfate reduction technologies and the development of technologies for current and emerging environmental and natural resources opportunities. This appropriation is available until June 30, 2018, and is not subject to Minnesota Statutes, section 116P.05, subdivision 2.~~

~~**Project due to be completed:** 6/30/2018~~

~~**Work Plan:** PENDING~~

Subd. 04 Water Resources

Tracking and Preventing Harmful Algal Blooms

Subd. 04a \$500,000 TF

Daniel Engstrom

Science Museum of Minnesota
St. Croix Watershed Research Station, 16910 152nd St N
Marine on St Croix, MN 55047

Phone: (651) 433-5953

Email: dre@smm.org

Web: <http://www.smm.org/scwrs/>

RESEARCH

Appropriation Language

\$500,000 the second year is from the trust fund to the Science Museum of Minnesota for the St. Croix Watershed Research Station to identify species composition and timing of harmful algal blooms, understand the causes of bloom development in individual lakes, and determine how nutrients and climate interact to increase harmful algae outbreaks. This work must be done in cooperation with the University of Minnesota and the Minnesota Pollution Control Agency. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Assessing the Increasing Harmful Algal Blooms in Minnesota Lakes

Subd. 04b \$270,000 TF

Miki Hondzo

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2 Third Ave SE
Minneapolis, MN 55414

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Email: mhondzo@umn.edu

Web: <http://www.safl.umn.edu>

RESEARCH**Appropriation Language**

\$270,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for the Saint Anthony Falls Laboratory to investigate lake processes and meteorological conditions triggering algal blooms and toxin production, develop models for tracking blooms, and provide outreach on the prediction, detection, and impacts of mitigation of algal bloom events. This work must be done in cooperation with the St. Croix Watershed Research Station of the Science Museum of Minnesota and the Minnesota Pollution Control Agency. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Restoring Native Mussels in Streams and Lakes

Subd. 04c \$600,000 TF

Mike Davis

MN DNR
2109 Lakeshore Dr N
Lake City, MN 55041

Phone: (507) 251-4116

Email: mike.davis@state.mn.us

Web: <http://www.dnr.state.mn.us>

Appropriation Language

\$600,000 the second year is from the trust fund to the commissioner of natural resources in cooperation with the Minnesota Zoological Garden for a statewide mussel program to rear, restore, and re-establish native mussel species in streams and rivers. This appropriation is

available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Assessing Techniques for Eliminating Contaminants to Protect Native Fish and Mussels

Subd. 04d \$287,000 TF

Kristine Wammer

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Web: <http://www.stthomas.edu/chemistry/faculty/wammer.htm>

RESEARCH

Appropriation Language

\$287,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the University of St. Thomas to evaluate the use of ultraviolet treatment of wastewater to remove certain commonly detected wastewater contaminants, in order to reduce the contaminants' toxicity to native fish and mussels. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Assessing Neonicotinoid Insecticide Effects on Aquatic and Soil Communities

Subd. 04e \$400,000 TF

William Arnold

U of MN
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Minneapolis, MN 55455

Phone: (612) 625-8582

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Web: <http://personal.ce.umn.edu/~arnold/>

RESEARCH

Appropriation Language

\$400,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to identify neonicotinoid insecticide breakdown components produced in water and plant leaves and assess their toxicity to soil and aquatic species and related biotic communities. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Bacterial Assessment of Groundwater Supplies Used for Drinking Water

Subd. 04f \$299,000 TF

Raymond Hozalski

U of MN

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Minneapolis, MN 55455

Phone: (612) 626-9650

Email: hozal001@umn.edu

RESEARCH**Appropriation Language**

\$299,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to characterize and analyze bacterial communities in Minnesota groundwater used as drinking water supplies and link the microbiological data to other water quality indicators for drinking water supply safety. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Understanding Bedrock Fracture Flow to Improve Groundwater Quality

Subd. 04g \$183,000 TF

Anthony Runkel

U of MN - MN Geological Survey

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St. Paul, MN 55114

Phone: (612) 626-1822

Email: runke001@umn.edu

Web: <http://www.mngs.umn.edu/>

Appropriation Language

\$183,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for the Minnesota Geological Survey to use new techniques of borehole testing and rock fracture mapping in the Twin Cities metropolitan area to achieve a better understanding of groundwater flow through fractured bedrock, in order to improve groundwater management. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Protection of State's Confined Drinking Water Aquifers - Phasell

Subd. 04h \$433,000 TF

Jared Trost

US Geological Survey
2280 Woodale Dr
Mounds View, MN 55112

Phone: (763) 783-3205

Email: jtrost@usgs.gov

Web: <http://mn.water.usgs.gov/index.html>

RESEARCH**Appropriation Language**

\$433,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the United States Geological Survey to continue to test methods of defining properties of confined drinking water aquifers, in order to improve water management. This appropriation is not subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Assessment of Surface Water Quality With Satellite Sensors

Subd. 04i \$345,000 TF

Jacques Finlay

U of MN
1987 Upper Buford Cir, 100 Ecology Bldg
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RESEARCH

Appropriation Language

\$345,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for a statewide assessment of water quality using new satellite sensors for high frequency measurement of major water quality indicators in lakes and rivers. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Development of Innovative Sensor Technologies for Water Monitoring

Subd. 04j \$509,000 TF

Tianhong Cui

U of MN

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RESEARCH

Appropriation Language

\$509,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to develop inexpensive and efficient sensitive sensors and wireless sensor networks for continuous monitoring of contaminants in lakes and rivers in Minnesota. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Wastewater Treatment Process Improvements

Subd. 04k \$398,000 TF

Timothy LaPara

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Web: <http://www.ce.umn.edu/people/faculty/lapara/index>

RESEARCH

Appropriation Language

\$398,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to characterize and quantify the nutrient-removing microorganisms used for municipal wastewater treatment, in order to improve the process used to reduce total nitrogen discharge. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Membrane-Based Process for Decentralized Drinking Water Production

Subd. 04I \$191,000 TF

Santiago Romero-Vargas Castrillón

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Web: <http://www.cege.umn.edu/directory/faculty-directory/romerovargas.html>

Appropriation Language

\$191,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to develop a low-energy use, membrane-based treatment technology to produce drinking water locally from surface waters by removing heavy metals and contaminants of emerging concern, including pesticides and pharmaceuticals. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Analyzing Alternative for Muncipal Wastewater Treatment

Subd. 04m \$180,000 TF

Scott Kyser

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St. Paul, MN 55155

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Email: scott.kyser@state.mn.us

RESEARCH

Appropriation Language

\$180,000 the second year is from the trust fund to the commissioner of the Minnesota Pollution Control Agency to analyze alternatives for improved treatment of sulfate and salty parameters at municipal wastewater plants to inform the development and implementation of wild rice, sulfate, and other water quality standards. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Understanding Impacts of Salt Usage on Minnesota Lakes, Rivers, and Groundwater

Subd. 04n \$497,000 TF

John Gulliver

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Minneapolis, MN 55414

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RESEARCH

Appropriation Language

\$497,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to quantify the current water-softening salt loads in Minnesota lakes, rivers, and groundwater, assess alternative water-softening materials and methods, and quantify the transport of de-icing and water-softening salt through the soil. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Microbes for Salt and Metal Removal

Subd. 04o \$596,000 TF

Daniel Bond

U of MN
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St. Paul, MN 55108

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RESEARCH

Appropriation Language

\$596,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to continue to research the potential of recently discovered microbes from Soudan Iron Mine in northern Minnesota for removing salts and metals from groundwater and surface water resources. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Engineered Biofilter for Sulfate and Metal Removal from Mine Waters

Subd. 04p \$440,000 TF

Sebastian Behrens

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RESEARCH

Appropriation Language

\$440,000 the second year is from the trust fund to the Board of Regents of the University of

Minnesota to develop an efficient, low-cost, biomass-derived adsorbent material for use in bioactive filters able to remove sulfate and metals from mining-impacted waters. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.
Project due to be completed: 6/30/2019

Work Plan (PDF)

Developing Biosponge Technology for Removal of Nitrates from Minnesota Waters

Subd. 04q \$198,000 TF

Lawrence Wackett

U of MN
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Email: wacke003@umn.edu

Appropriation Language

\$198,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to adapt and test an inexpensive biosponge technology for its effectiveness at removing nitrates from drinking water. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Morrison County Performance Drainage and Hydrology Management

Subd. 04r \$209,000 TF

Helen McLennan

Morrison SWCD
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Little Falls, MN 56345

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Appropriation Language

\$209,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the Morrison Soil and Water Conservation District to conduct an assessment of drainage infrastructure, in order to develop hydrology restoration priorities and a

countywide performance drainage ordinance to address land use-change impacts to the hydrogeology. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Agricultural and Urban Runoff Water Quality Treatment Analysis - Phase II

Subd. 04s \$110,000 TF

Craig Austinson

Blue Earth County Drainage Authority
204 Fifth St S
Mankato, MN 56001

Phone: (507) 304-4253

Email: Craig.Austinson@blueearthcountymn.gov

Web: <http://www.co.blue-earth.mn.us>

Appropriation Language

\$110,000 the second year is from the trust fund to the Board of Water and Soil Resources for an agreement with the Blue Earth County Drainage Authority to continue monitoring a model demonstration for storage and treatment options in drainage systems designed to improve agricultural and urban water quality by reducing soil erosion, peak water flows, and nutrient loading. This appropriation is available until June 30, 2021, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2021

Work Plan (PDF)

Surface Water Bacterial Treatment System Pilot Project

Subd. 04t \$500,000 TF

Brian Corcoran

Vadnais Lake Area Water Management Organization
800 County Rd E
Vadnais Heights, MN 55127

Phone: (651) 204-6075

Email: brian.corcoran@vlawmo.org

Web: <http://www.vlawmo.org>

Appropriation Language

\$500,000 the second year is from the trust fund to the commissioner of natural resources for

an agreement with Vadnais Lake Area Water Management Organization to reduce bacteria and nutrient loads to Vadnais Lake, a drinking water supply reservoir, through implementation and evaluation of a subsurface constructed wetland as a best management practice for potential statewide use. The Vadnais Lake Area Water Management Organization must consider contracting with the University of Minnesota Department of Civil, Environmental, and Geo-Engineering to evaluate the effectiveness of the pilot treatment system so that it maximizes benefits and can be replicated elsewhere. This appropriation is available until June 30, 2021, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2021

Work Plan (PDF)

Assessing Effectiveness of Wetland Restorations for Improved Water Quality

Subd. 04u \$420,000 TF

Jacques Finlay

U of MN

1987 Upper Buford Cir, 100 Ecology Bldg

St. Paul, MN 55108

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Web: <http://www.cbs.umn.edu/lab/finlay>

RESEARCH

Appropriation Language

\$420,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to quantify the environmental benefits of sediment removal and native plant communities in wetland restorations by measuring resulting reductions in nitrogen and phosphorus delivery to groundwater and surface water. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Integrating Targeted Watershed Planning Tools with Citizen Involvement

Subd. 04v \$169,000 TF

Kimberly Musser

Minnesota State University - Mankato

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Mankato, MN 56001

Phone: (507) 389-5492

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Web: <http://mrfdc.mnsu.edu/>

Appropriation Language

\$169,000 the second year is from the trust fund to the Board of Trustees of the Minnesota State Colleges and Universities system for the Water Resources Center at Minnesota State University, Mankato, to use geographic information system (GIS) prioritization and modeling tools to develop pollution reduction strategies in five priority subwatersheds in the Le Sueur River watershed and to promote implementation of the reduction strategies through citizen involvement and outreach. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Roseau Lake Watershed Targeted Water Quality Improvement

Subd. 04w \$65,000 TF

Henry Van Offelen

MN DNR

Tower Rd N

Detroit Lakes, MN 56501

Phone: (218) 846-8406

Email: henry.van.offelen@state.mn.us

Appropriation Language

\$65,000 the second year is from the trust fund to the commissioner of natural resources to develop targeted water quality improvements for the Roseau Lake watershed by coordinating with partner agencies to identify the top priority field scale best management and conservation practices to implement in the region.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Subd. 05 Environmental Education

Minnesota Conservation Apprentice Academy

Subd. 05a \$433,000 TF

Jenny Gieseke

Board of Water and Soil Resources

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St. Paul, MN 55155

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Web: <http://www.bwsr.state.mn.us>

Appropriation Language

\$433,000 the second year is from the trust fund to the Board of Water and Soil Resources in cooperation with Conservation Corps Minnesota and Iowa for the final phase of a program to train and mentor future conservation professionals by providing apprenticeship service opportunities with local soil and water conservation districts in Minnesota. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

School Forests Outdoor Classrooms

Subd. 05b \$440,000 TF

Amy Kay Kerber

MN DNR

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St. Paul, MN 55155

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Email: amykay.kerber@state.mn.us

Web: <http://www.mndnr.gov/schoolforest>

Appropriation Language

\$440,000 the second year is from the trust fund to the commissioner of natural resources in cooperation with Conservation Corps Minnesota and Iowa to renovate and restore 60 school forests and train students, teachers, school district facility staff, and community volunteers to be long-term stewards of the school forests and provide education and service learning experiences at school forest sites. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Youth-Led Sustainability Projects in 50 Minnesota Communities - Phase III

Subd. 05c \$400,000 TF

Shelli-Kae Foster

Prairie Woods Environmental Learning Center
12718 10th Street NE
Spicer, MN 56288

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Web: <http://www.youthenergysummit.org>

Appropriation Language

\$400,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Prairie Woods Environmental Learning Center to expand the Youth Energy Summit (YES!) program statewide to complete more than 200 new youth-led climate change mitigation and adaptation projects in over 50 Minnesota communities.

Project due to be completed: 6/30/2018

Work Plan (PDF)

New Prairie Sportsman Statewide Broadcast Video Project

Subd. 05d \$300,000 TF

Patrick Moore

Pioneer Public Television
120 Schlieman W
Appleton, MN 56208

Phone: (320) 289-2919

Email: pmoore@pioneer.org

Web: <http://www.pioneer.org>

Appropriation Language

\$300,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Pioneer Public Television to provide outreach on outdoor recreation, conservation, and natural resource issues, including water quality, wildlife habitat, and invasive species, through a series of interrelated public forums, educational and training videos, and statewide broadcast television programs. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Wildlife and Habitat Conservation Education for Southwest Minnesota High Schools

Subd. 05e \$147,000 TF

Carol Strecker

Minnesota Zoological Garden
13000 Zoo Blvd
Apple Valley, MN 55124

Phone: (952) 431-9568

Email: carol.strecker@state.mn.us

Web: <http://www.mnzoo.org>

Appropriation Language

\$147,000 the second year is from the trust fund to the Minnesota Zoological Garden to engage high school students in critical prairie wildlife and habitat conservation projects by using the zoo's unique animal collections and state-of-the-art technology to deliver hands-on learning in 12 southwestern Minnesota high schools.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Standards-Based Dakota Indian Land Stewardship Education

Subd. 05f \$197,000 TF

Darlene St. Clair

Dakota Wicohan
PO Box 2
Morton, MN 56270

Phone: (507) 697-6272

Email: dstclair@stcloudstate.edu

Web: <http://www.dakotawicohan.com>

Appropriation Language

\$197,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Dakota Wicohan to enhance the capacity of approximately 1,250 students to be stewards of the land in Minnesota by learning about Dakota Indian values and environmental principles through a standards-based experiential multimedia curriculum. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Wolf Management Education in the Classroom - Phase II

Subd. 05g \$240,000 TF

David Kline

International Wolf Center
3410 Winnetka Ave N, Ste 101
Minneapolis, MN 55427

Phone: (763) 560-7374 x225

Email: david@wolf.org

Web: <http://www.wolf.org>

Appropriation Language

\$240,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the International Wolf Center to expand the Wolves at Our Door classroom education program to assist students in understanding wolves and associated management issues.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Master Water Steward Program Expansion

Subd. 05h \$116,000 TF

Peggy Knapp

Freshwater Society
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Excelsior, MN 55331

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Email: pknapp@freshwater.org

Web: <http://www.freshwater@freshwater.org>

Appropriation Language

\$116,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the Freshwater Society to train community volunteers as master water stewards who will work with neighborhoods to install water management projects that preserve and restore water quality. This appropriation is available until June 30, 2019, by which

time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Promoting Water Quality Stewardship through Student Mentoring and River Monitoring
Subd. 05i \$39,000 TF

Emily Deaver

Minnesota State University - Southwest
1501 State St
Marshall, MN 56258

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Appropriation Language

\$39,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Southwest Minnesota State University to partner with area schools to deliver inquiry-based, hands-on learning and mentoring on water quality stewardship between university agriculture students and high school and middle school students.

Project due to be completed: 6/30/2018

Work Plan (PDF)

GOVERNOR VETO

~~Wildlife Science Center~~

~~Subd. 05I \$500,000 TF~~

~~TBD~~

~~Wildlife Science Center
5463 West Broadway Ave
Columbus, MN 55025~~

~~**Phone:** (651) 464-3993~~

~~**Email:** TBD~~

~~**Web:** <http://www.wildlifesciencecenter.org/>~~

~~Appropriation Language~~

~~\$500,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the Wildlife Science Center to provide environmental education programs using ambassador wild animals.~~

~~Project due to be completed: 6/30/2018~~

~~Work Plan: PENDING~~

Subd. 06 Aquatic and Terrestrial Invasive Species

Minnesota Invasive Terrestrial Plants and Pests Center - Phase III

Subd. 06a \$3,750,000 TF

Robert Venette

U of MN

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Web: <http://www.mitppc.umn.edu>

RESEARCH

Appropriation Language

\$3,750,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for the Invasive Terrestrial Plants and Pests Center to conduct research to prevent, minimize, and mitigate the threats and impacts posed by terrestrial invasive plants, pathogens, and pests to the state's prairies, forests, wetlands, and agricultural resources. This appropriation is available until June 30, 2023, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2023

Work Plan (PDF)

Developing Membrane Filtration System to Treat Lake Superior Ballast Water

Subd. 06b \$151,000 TF

Santiago Romero-Vargas Castrillón

U of MN

Department of Civil, Environmental, and Geo- Engineering

Minneapolis, MN 55455

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Email: sromerov@umn.edu

Web: <http://www.cege.umn.edu/directory/faculty-directory/romerovargas.html>

RESEARCH

Appropriation Language

\$151,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to develop a filtration system utilizing bioactive membrane technologies for use in treating Lake Superior ballast water to remove at least 90 percent of suspended pathogens, invasive species, and contaminants. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Advancing Microbial Invasive Species Monitoring from Ballast Discharge

Subd. 06c \$368,000 TF

Randall Hicks

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1035 Kirby Dr, SSB 207
Duluth, MN 55812

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Email: rhicks@d.umn.edu

RESEARCH

Appropriation Language

\$368,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to identify bacteria in ship ballast water and St. Louis River estuary sediments, assess the risks posed by invasive bacteria, and evaluate treatment techniques for effectiveness at removing the bacteria from ballast water. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Biological Control of White Nose Syndrome in Bats - Phase II

Subd. 06d \$452,000 TF

Christine Salomon

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Minneapolis, MN 55455

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Web: <http://www.cbs.umn.edu/contacts/christine-salomon>

RESEARCH

Appropriation Language

\$452,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to continue research to identify, develop, and optimize biocontrol agents for white nose syndrome in bats by evaluating the biocontrol effectiveness of microbes collected at additional hibernacula throughout the state and conducting baseline characterization of the total bat microbiomes. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Elimination of Target Invasive Plant Species - Phase II

Subd. 06e \$750,000 TF

Subd. 06e1 \$511,000 TF

Monika Chandler

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625 Robert St N
St. Paul, MN 55155

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Subd. 06e2 \$239,000 TF

Angela Gupta

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863 30th Avenue SE
Rochester, MN 55904

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Web:

<http://www.mda.state.mn.us/en/plants/pestmanagement/weedcontrol/targetplants.aspx>

Appropriation Language

\$750,000 the second year is from the trust fund. Of this amount, \$511,000 is to the commissioner of agriculture and \$239,000 is to the Board of Regents of the University of Minnesota to train volunteers and professionals to find, control, and monitor targeted newly emergent invasive plant species. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan - Chandler (Subd. 06e1) (PDF)

Work Plan - Gupta (Subd. 06e2) (PDF)

Dutch Elm Disease Resistance - Phase II

Subd. 06f \$200,000 TF

Robert Blanchette

U of MN

1991 Upper Buford Cir, 495 Borlaugh Hall

St. Paul, MN 55126

Phone: (612) 625-0202

Email: robertb@umn.edu

Web: <http://forestpathology.cfans.umn.edu/default.htm>

RESEARCH**Appropriation Language**

\$200,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to continue to identify and evaluate native Minnesota elms that are resistant to Dutch elm disease and begin propagating disease-resistant specimens for field trial testing. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Invasive Carp Management Research in Lake Nokomis Subwatershed

Subd. 06g \$189,000 TF

Adam Arvidson

Minneapolis Parks and Recreation Board

2117 River Rd W

Minneapolis, MN 55411

Phone: (612) 230-6470

Email: aarvidson@minneapolisparks.org

Web: <http://www.minneapolisparks.org>

Appropriation Language

\$189,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the Minneapolis Park and Recreation Board to apply current invasive carp management research to the entire Lake Nokomis subwatershed and provide demonstration guidance for large-scale carp management. This appropriation is available until June 30, 2020, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2020

Work Plan (PDF)

Subd. 07 Air Quality, Climate Change, and Renewable Energy

Community Solar Garden Installation

Subd. 07a \$490,000 TF

BJ Allen

Rural Renewable Energy Alliance

3963 8th Street SW

Backus, MN 56435

Phone: (218) 209-5584

Email: bj@rreal.org

Web: <http://www.rreal.org>

Appropriation Language

\$490,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Rural Renewable Energy Alliance to install a 200-kilowatt community solar garden to provide for electrical distribution in Cass, Beltrami, Hubbard, and Itasca Counties, to assist households in the Minnesota low-income housing energy assistance program in meeting electrical energy needs and serve as a model for low-income energy assistance elsewhere in the state. This appropriation is not subject to Minnesota Statutes, section 116P.10.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Waste Heat Recovery with Efficient Thermoelectric Energy Generators

Subd. 07b \$400,000 TF

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Phone: (612) 625-4028

Email: kortshagen@umn.edu

RESEARCH

Appropriation Language

\$400,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to develop thermoelectric energy generators using advanced, high-performance materials able to more efficiently capture waste heat and transform the heat into electricity. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Hydrogen Fuel from Wind-Produced Renewable Ammonia

Subd. 07c \$250,000 TF

William Northrop

U of MN

111 Church St SE

Minneapolis, MN 55455

Phone: (612) 625 6854

Email: wnorthro@umn.edu

RESEARCH

Appropriation Language

\$250,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to develop a technical solution for converting wind-produced ammonia to hydrogen through catalytic decomposition, for use in reducing emissions from diesel engines and powering fuel cell vehicles. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be

completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Utilization of Dairy Farm Wastewater for Sustainable Production

Subd. 07d \$475,000 TF

Bradley Heins

U of MN
46352 State Hwy 329
Morris, MN 56267

Phone: (320) 589-1711

Email: hein0106@umn.edu

Web: <http://wcroc.cfans.umn.edu/research-programs/dairy>

Appropriation Language

\$475,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for the West Central Research and Outreach Center in Morris to develop and evaluate an integrated system that recycles and uses nutrients in dairy wastewater from feedlots and milk processing, thereby reducing nutrients from agricultural runoff, and to provide outreach on adoption of new technologies. This appropriation is subject to Minnesota Statutes, section 116P.10. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Solar Energy Utilization for Minnesota Swine Farms - Phase II

Subd. 07e \$475,000 TF

Lee Johnston

U of MN - West Central Research and Outreach Center
46352 State Hwy 329
Morris, MN 56267

Phone: (320) 589-1711

Email: johnstlj@morris.umn.edu

Web: <http://wcroc.cfans.umn.edu>

Appropriation Language

\$475,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota for the West Central Research and Outreach Center in Morris to continue to develop and evaluate the utilization of solar photovoltaic systems at swine facilities to improve energy and economic performance, reduce fossil fuel usage and emissions, and optimize water usage. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Subd. 08 Methods to Protect, Restore, and Enhance Land, Water, and Habitat

Bee Pollinator Habitat Enhancement - Phase II

Subd. 08a \$387,000 TF

Marla Spivak

U of MN

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St. Paul, MN 55108

Phone: (612) 624-4798

Email: spiva001@umn.edu

Web: <http://www1.umn.edu>

Appropriation Language

\$387,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to continue assessment of the potential to supplement traditional turf grass by providing critical floral plant resources to enhance bee pollinator habitat. Plant materials and seeds must follow the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Measuring Pollen and Seed Dispersal for Prairie Fragment Connectivity

Subd. 08b \$556,000 TF

Lauren Sullivan

U of MN

1987 Upper Buford Cir, 100 Ecology Bldg
St. Paul, MN 55108

Phone: (612) 301-1056

Email: lsullivan@umn.edu

RESEARCH

Appropriation Language

\$556,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to determine habitat connectivity between prairie fragments by measuring plant movement by dispersal of pollen and seeds to improve prairie restoration implementation. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Establishment of Permanent Habitat Strips Within Row Crops

Subd. 08c \$179,000 TF

Shawn Schottler

Science Museum of Minnesota
16910 152nd St N
Marine on St. Croix, MN 55047

Phone: (651) 433-5953 x18

Email: schottler@smm.org

Appropriation Language

\$179,000 the second year is from the trust fund to the Science Museum of Minnesota for the St. Croix Watershed Research Station to research the viability of establishing prairie forbs and alfalfa as permanent cover strips in the bare soil between selected rows of corn and soybeans as potential pollinator, monarch, and gamebird habitat. Monitoring of the native plant strips must evaluate the effects of pesticides from adjacent crops on pollinators, including determining whether there is a reduction of pollinators that results in reduced setting of seeds on the native plants. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Evaluate Prescribed Burning Techniques to Improve Habitat Management for Brushland Species

Subd. 08d \$267,000 TF

Rebecca Montgomery

U of MN
1530 Cleveland Ave N
St. Paul, MN 55108

Phone: (612) 624-7249

Email: rebeccam@umn.edu

RESEARCH

Appropriation Language

\$267,000 the second year is from the trust fund to the Board of Regents of the University of Minnesota to compare the effects on brushland habitat of conducting prescribed burning in spring, summer, and fall to provide improved management guidelines for wildlife habitat. This appropriation is available until June 30, 2020, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2020

Work Plan (PDF)

Controlling Reed Canary Grass to Regenerate Floodplain Forest

Subd. 08e \$218,000 TF

Tim Schlagenhaft

Minnesota State Office of National Audubon Society
2000 Main W
Red Wing, MN 55066

Phone: (651) 764-4242

Email: tschlagenhaft@audubon.org

RESEARCH

Appropriation Language

\$218,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the Minnesota state office of the National Audubon Society to determine the most effective regeneration methods for restoration of floodplain forests in southeast Minnesota impacted by invasive reed canary grass. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Forest Management for Mississippi River Drinking Water Protection

Subd. 08f \$300,000 TF

Melissa Barrick

Crow Wing SWCD
322 Laurel St, Ste 13
Brainerd, MN 56401

Phone: (218) 828-6197

Email: melissa.barrick@crowwingswcd.org

Web: <http://crowwingswcd.org/>

Appropriation Language

\$300,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the Crow Wing Soil and Water Conservation District to pilot a water protection approach for the watershed through development of forest stewardship plans and targeted riparian forest restoration projects. Any expenditures from this appropriation spent on forest management plans or restoration must be for lands with a long-term contract commitment for forest conservation, and the restoration must follow the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Upland, Wetland, and Shoreline Restoration in Greater Metropolitan Area

Subd. 08g \$509,000 TF

Wiley Buck

Great River Greening
35 Water St W, Ste 201
St. Paul, MN 55107

Phone: (651) 665-9500

Email: wbuck@greatrivergreening.org

Web: <http://www.greatrivergreening.org>

Appropriation Language

\$509,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Great River Greening to restore approximately 150 acres of forest, prairie, woodland, and wetland and 0.15 miles of shoreline throughout the greater Twin Cities metropolitan area, using volunteers, and to conduct restoration evaluation on previously restored parcels. A list of proposed restorations and evaluations must be provided as part of the required work plan. Plant and seed materials must follow the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Bluffland Restoration and Monitoring in Winona

Subd. 08h \$99,000 TF

Neal Mundahl

Winona State University
175 Mark St W
Winona, MN 55987

Phone: (507) 457-5695

Email: nmundahl@winona.edu

Web: <http://www.winona.edu>

Appropriation Language

\$99,000 the second year is from the trust fund to the Board of Trustees of the Minnesota State Colleges and Universities system for Winona State University to inventory, restore, and monitor the 40-acre Garvin Heights Natural Area in Winona and provide related public outreach and education. Plant and seed materials must follow the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Champlin Mill Pond Shoreland Restoration

Subd. 08i \$2,000,000 TF

Todd Tuominen

City of Champlin

11955 Champlin Dr
Champlin, MN 55316

Phone: (763) 923-7120

Email: ttuominen@ci.champlin.mn.us

Web: <http://www.ci.champlin.mn.us>

Appropriation Language

\$2,000,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the city of Champlin to restore the Champlin Mill Pond shoreline and adjacent habitat. Plant and seed materials must follow the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

GOVERNOR VETO

Pollinator Highway Demonstration Projects

Subd. 08j—\$2,200,000 TF

TBD

MN-DOT

395 John Ireland Blvd

St. Paul, MN 55155

Phone: TBD

Email: TBD

Web: <http://www.dot.state.mn.us/>

Appropriation Language

~~\$2,200,000 the second year is from the trust fund to the commissioner of transportation to restore and enhance wildlife habitat along trunk highways, including: marked Interstate Highway 35, one north and one south of the metropolitan area; marked Interstate Highway 90; and two locations along marked Interstate Highway 94. Of this amount, up to \$25,000 may be used to monitor and study the effects of different levels of native plant diversity on roadside pollinators and the timing of mowing on pollinator abundance and diversity. The commissioner must submit a report to the chairs and ranking minority members of the house of representatives and senate committees and divisions with jurisdiction over transportation and environment and natural resources by January 15, 2017, and submit or present to the chairs a follow up status report by January 15, 2020. This appropriation is available until June 30, 2022, and must include a five-year restoration process. This appropriation is not subject to Minnesota Statutes, sections 116P.05, subdivision 2, paragraph (b), and 116P.09, subdivision 4.~~

~~Project due to be completed: 6/30/2019~~

~~Work Plan: Not required per exemption granted in MN Laws 2016, Chp. 186, Sec. 2, Subd. 8(j).~~

Subd. 09 Land Acquisition, Habitat and Recreation

Scientific and Natural Area Acquisition and Restoration

Subd. 09a \$1,386,000 TF

Peggy Booth

MN DNR

500 Lafayette Rd, Box 25

St. Paul, MN 55155

Phone: (651) 259-5088

Email: peggy.booth@state.mn.us

Web: <http://www.dnr.state.mn.us/snas/index.html>

Appropriation Language

\$1,386,000 the second year is from the trust fund to the commissioner of natural resources to restore and improve approximately 750 acres of scientific and natural areas. A list of proposed restorations must be provided as part of the required work plan. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

~~Project due to be completed: 6/30/2019~~

[Work Plan](#) (PDF)

Minnesota Point Pine Forest Scientific and Natural Area Acquisition

Subd. 09b \$500,000 TF

Peggy Booth

MN DNR

500 Lafayette Rd, Box 25

St. Paul, MN 55155

Phone: (651) 259-5088

Email: peggy.booth@state.mn.us

Web: <http://www.dnr.state.mn.us/snas/index.html>

Appropriation Language

\$500,000 the second year is from the trust fund to the commissioner of natural resources in

cooperation with the Duluth Airport Authority to acquire approximately ten acres as an addition to the designated Minnesota Point Pine Forest Scientific and Natural Area located along the shores of Lake Superior in Duluth.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Conservation Easements in the Avon Hills - Phase III

Subd. 09c \$1,300,000 TF

Thomas Kroll

Saint Johns Arboretum and University
PO Box 3000
Collegeville, MN 56321

Phone: (320) 363-3163

Email: tkroll@csbsju.edu

Web: <http://www.csbsju.edu/arboretum/avonhills>

Appropriation Language

\$1,300,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Saint John's University in cooperation with Minnesota Land Trust to secure permanent conservation easements on approximately 500 acres of high-quality habitat in Stearns County, prepare conservation management plans, and provide public outreach. A list of proposed easement acquisitions must be provided as part of the required work plan. An entity that acquires a conservation easement with appropriations from the trust fund must have a long-term stewardship plan for the easement and a fund established for monitoring and enforcing the agreement. Funding for the long-term monitoring and enforcement fund must come from nonstate sources for easements acquired with this appropriation. The state may enforce requirements in the conservation easements on land acquired with this appropriation and the conservation easement document must state this authority and explicitly include requirements for water quality and quantity protection. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Lincoln Pipestone Rural Water System Acquisition for Wellhead Protection

Subd. 09d \$1,500,000 TF

Jason Overby

Lincoln Pipestone Rural Water System

415 Benton E
Lake Benton, MN 56149

Phone: (507) 368-4248

Email: lprw@itctel.com

Web: <http://www.lprw.com>

Appropriation Language

\$1,500,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Lincoln Pipestone Rural Water to acquire and restore lands designated under an approved wellhead protection plan. Lands acquired with this appropriation must be from willing sellers and be identified by the Department of Health as targeted vulnerable lands for wellhead protection. Lands must be restored to permanent vegetative cover, but may be used for recreation and renewable energy if adequate protection of the drinking water aquifer is provided. A list of proposed acquisitions must be provided as part of the required work plan. Plant and seed materials must follow the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. Income derived from the lands acquired with funds appropriated under this paragraph is exempt from Minnesota Statutes, section 116P.10, if used for additional wellhead protection as provided under this paragraph until adequate wellhead protection has been achieved, as determined by the commissioner of health. Any income earned after that must be returned to the environment and natural resources trust fund. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Mesabi Trail Segment from Highway 135 to Town of Embarrass

Subd. 09e \$1,200,000 TF

Bob Manzoline

St. Louis & Lake Counties Regional Railroad Authority
111 Station Rd
Eveleth, MN 55734

Phone: (218) 744-2653

Email: bmanzoline@rrauth.com

Appropriation Language

\$1,200,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the St. Louis and Lake Counties Regional Railroad Authority for engineering and construction of segments of the Mesabi Trail, totaling approximately six miles between Highway 135 and the town of Embarrass. This appropriation is available until June 30, 2019, by

which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Tower Historic Harbor Trail Connections

Subd. 09f \$679,000 TF

Linda Keith

City of Tower
PO Box 576
Tower, MN 55790

Phone: (218) 753-4070

Email: linda@cityoftower.com

Web: <http://www.cityoftower.com>

Appropriation Language

\$679,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the city of Tower to construct recreational trails along the harbor in Tower and to connect to the Mesabi Trail. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.

Project due to be completed: 6/30/2019

Work Plan (PDF)

Otter Tail River Recreational Trail Acquisition

Subd. 09g \$600,000 TF

Gordon Hydukovich

City of Fergus Falls
112 Washington Ave W
Fergus Falls, MN 56537

Phone: (218) 332-5427

Email: gordon.hydukovich@ci.fergus-falls.mn.us

Web: <http://www.ci.fergus-falls.mn.us>

Appropriation Language

\$600,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the city of Fergus Falls to acquire approximately 16 acres along the Otter Tail River for a recreational trail and park. This appropriation is contingent on at least a

\$400,000 match of nonstate money. Prior to the acquisition, a phase 1 environmental assessment must be completed and the city must not accept any liability for previous contamination of lands acquired with this appropriation.

Project due to be completed: 6/30/2018

Work Plan (PDF)

GOVERNOR VETO

~~State Park and Trail Enhancement~~

~~Subd. 09h — \$1,228,000 TF~~

~~TBD~~

~~MN DNR~~

~~500 Lafayette Rd~~

~~St. Paul, MN 55155~~

~~Phone: TBD~~

~~Email: TBD~~

~~Web: <http://www.dnr.state.mn.us/eco/mcbs/index.html>~~

Appropriation Language

~~\$1,228,000 the second year is from the trust fund to the commissioner of natural resources for enhancement of state parks and trails as follows: \$614,000 is for enhancement of state parks and \$614,000 is for enhancement of state trails. This appropriation is not subject to Minnesota Statutes, sections 116P.05, subdivision 2, paragraph (b), and 116P.09, subdivision 4.~~

~~**Project due to be completed:** 6/30/2018~~

~~**Work Plan:** Not required per exemption granted in MN Laws 2016, Chp. 186, Sec. 2, Subd. 9(h).~~

GOVERNOR VETO

~~Douglas County Regional Park~~

~~Subd. 09i — \$400,000 TF~~

~~TBD~~

~~Douglas County~~

~~305 8th Ave W~~

~~Alexandria, MN 56308~~

~~Phone: TBD~~

~~Email: TBD~~

~~Web: <http://www.co.douglas.mn.us>~~

Appropriation Language

~~\$400,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with Douglas County for park and trail planning, development, or acquisition for a regional park. The grant must be matched by other state or nonstate sources. This appropriation is available until June 30, 2019, by which time the project must be completed and final products delivered.~~

~~Project due to be completed: 6/30/2019~~

~~Work Plan: PENDING~~

Subd. 10 Administration

Contract Agreement Reimbursement

Subd. 10a \$135,000 TF

Jason Tidemann

MN DNR

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St. Paul, MN 55155

Phone: (651) 259-5533

Email: jason.tidemann@state.mn.us

Web: <http://www.dnr.state.mn.us>

Appropriation Language

\$135,000 the second year is from the trust fund to the commissioner of natural resources, at the direction of the Legislative-Citizen Commission on Minnesota Resources, for expenses incurred for contract agreement reimbursement for the agreements specified in this section. The commissioner shall provide documentation to the Legislative-Citizen Commission on Minnesota Resources on the expenditure of these funds.

Project due to be completed: 6/30/2018

Work Plan (PDF)

Legislative-Citizen Commission on Minnesota Resources (LCCMR)

Subd. 10b \$75,000 TF

Susan Thornton

Legislative-Citizen Commission on Minnesota Resources

100 Rev Dr Martin Luther King Jr Blvd, Rm 65

St. Paul, MN 55155

Phone: (651) 296-6264

Email: susan.thornton@lccmr.leg.mn

Web: <http://www.lccmr.leg.mn>

Appropriation Language

\$75,000 the second year is from the trust fund to the Legislative-Citizen Commission on Minnesota Resources for upgrading and modernizing a project records management system.

Project due to be completed: 6/30/2018

