

**Environment and Natural Resources Trust Fund**

# M.L. 2025 Final Work Plan

## **General Information**

**ID Number:** 2025-025

**Staff Lead:** Lisa Bigaouette

**Date this document submitted to LCCMR:** June 13, 2025

**Project Title:** Restoration and Outreach for Minnesota's Native Mussels

**Project Budget:** $1,258,000

## **Project Manager Information**

**Name:** Kathryn Holcomb

**Organization:** MN DNR - Ecological and Water Resources Division

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## **Project Reporting**

**Reporting Schedule:** April 1 / October 1 of each year.

**Project Completion:** June 30, 2028

**Final Report Due Date:** August 14, 2028

## **Legal Information**

**Legal Citation:** M.L. 2025, First Special Session, Chp. 1, Art. 2, Sec. 2, Subd. 04b

**Appropriation Language:** $1,258,000 the first year is from the trust fund to the commissioner of natural resources to propagate, rear, and restore native freshwater mussel populations and the ecosystem services they provide to Minnesota waters; to evaluate reintroduction success; and to inform the public on mussels and mussel conservation.

**Appropriation End Date:** June 30, 2028

## **Narrative**

**Project Summary:** We will improve the conservation of native mussels by rearing and releasing imperiled species, monitoring restored populations, and inspiring public action, thereby improving the health of aquatic ecosystems in Minnesota.

**Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.**

Native mussels are critical to aquatic ecosystems because they filter and clean our rivers and lakes, create habitat for fish and other invertebrates, and serve as indicators of ecosystem health. Unfortunately, more than 70% of the nation’s species are in decline. Historically, mussel populations in Minnesota were decimated by overharvest for the pearl and button industries. Pollution also contributed to declines because mussels are sensitive to chemicals and metals. Fortunately, the Clean Water Act and the end of harvesting has slowed the progression of loss for some species, but threats remain. Habitat alterations like dams and channelization cause erosion, siltation, and prevent host fish movement. Furthermore, invasive zebra mussels continue to expand their range and compete with native mussels for habitat and food. These threats and other enigmatic issues put pressure on stressed populations, thus limiting their ability to recover naturally. As such, management benefitting mussels and raising public awareness has become integral over the last few decades. Propagation and reintroduction of mussels to recover depleted populations has benefited species like the endangered Higgins Eye. It is imperative this work continues for other species to prevent and reverse the loss of biodiversity and ensure Minnesota maintains healthy waterways.

**What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.**

The DNR Center for Aquatic Mollusk Programs (CAMP) is partnering with the Minnesota Zoo to reintroduce imperiled freshwater mussel species into priority waterways, monitor outcomes of management decisions, and increase public perception of their importance. With this partnership, we will build upon previous investments by increasing the number and species of mussels we propagate and reintroduce, thereby improving mussel diversity, abundance, and filtration capacity in rivers. We will utilize our expertise in aquaculture to construct specialized holding tanks for species-specific hosts. We will incorporate the use of equipment that can analyze mussel food quantities in waters used for propagation and holding to improve rearing techniques. We will increase monitoring efforts for released mussels by adding qualitative surveys and measuring new habitat variables, using results to inform selection of future reintroduction sites and determine sustainability of current populations. Finally, we will expand public education and engagement by raising awareness among people of all ages through the Show Us Your Mussel challenge, on Zoo campus, and at other venues and by creating new interpretive materials.

**What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state’s natural resources?**

This project is expected to: 1) Improve degraded rivers and lakes through mussel propagation and reintroduction, thereby increasing mussel populations of Species of Greatest Conservation Need (SGCN) that have limited ability to recover on their own. Subsequently, this will improve water quality and support fish and wildlife recreation and nature-based tourism. 2) Improve the science of mussel reintroductions by leveraging the use of new techniques and tools to conduct propagation and implement monitoring programs. 3) Improve awareness and encourage public action on behalf of Minnesota’s aquatic resources by expanding educational programs and spaces that benefit mussel conservation.

## **Project Location**

**What is the best scale for describing where your work will take place?** Region(s): Central, Metro, NW, SE,

**What is the best scale to describe the area impacted by your work?** Statewide

**When will the work impact occur?** During the Project

## **Activities and Milestones**

### **Activity 1: Propagating and rearing native mussels at CAMP and the Zoo**

**Activity Budget:** $764,368

**Activity Description:**The DNR and Zoo will collect up to 10 brooding female mussels of each target species annually during early spring to late fall. Broods will be separated by watershed and housed up to several months in chilled recirculating systems. The DNR will acquire up to 200 fish hosts for each mussel species annually. The Zoo will construct and retrofit aquaculture systems and develop husbandry techniques to breed, grow, or maintain host species (fish and/or amphibian). Hosts will be inoculated with mussel larvae at CAMP and kept in specialized juvenile collection tanks, placed into cages within their watershed, or released at selected restoration sites. Juveniles that transform in the lab will be collected from host tanks, counted and placed into rearing systems at CAMP and the Zoo. A portion of juveniles may be transferred to other partners. New food sources and feeding regimes will be explored and evaluated using a particle sizer and counter. Survival and growth will be routinely monitored for 2 - 4 years prior to release.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Approximate Completion Date** |
| DNR & Zoo: Collect brood mussels; up to 10 females/species annually. | May 31, 2028 |
| DNR: Collect fish hosts; up to 200 hosts per/mussel species annually. | June 30, 2028 |
| Zoo: Rear up to four species of fish and/or amphibian hosts annually. | June 30, 2028 |
| DNR: Collect juvenile mussels from hosts; up to 200,000/species annually. | June 30, 2028 |
| DNR & Zoo: Rear juvenile mussels; up to 5,000/species annually. | June 30, 2028 |

### **Activity 2: Mussel reintroduction and post-release monitoring**

**Activity Budget:** $375,339

**Activity Description:**Previous efforts have reintroduced four mussel species among 2 - 3 sites in each of the Cedar, Cannon, and Mississippi watersheds. Two species (2018 & 2019 cohorts) are monitored annually for 3 - 5 consecutive years to determine their response to different habitats and document reproductive status. Results will inform selection of up to three additional reintroduction sites where mussels (2021, 2022, and 2024 cohorts) will be released beginning summer 2024. Therefore, we propose monitoring these new populations annually for three years to acquire data necessary to compare metrics of mussels (survival, growth, reproduction) and habitats (water temperature, ammonia, etc.) among watersheds, sites, species, and cohorts. Furthermore, we will conduct surveys near previously-funded reintroduction sites to document offspring of reintroduced populations. Additional surveys will occur in the three watersheds (and others statewide) to determine the status and management needs for other mussel species. Propagated mussels (2022 and 2024 cohorts) that reach a minimum size of 15 mm during the grant period will be marked with a unique identifier on their shells. A subset of each species will receive a passive integrated transponder (PIT) tag to maintain consistency with our ongoing monitoring plan, and these mussels will be released beginning summer 2025.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Approximate Completion Date** |
| Reintroduce up to 5,000 mussels into reintroduction sites; 1-3 sites/watershed annually. | September 30, 2027 |
| Recapture at least 10 tagged mussels at reintroduction sites; 1-3 sites/watershed annually. | October 31, 2027 |
| Document reproductive status of mussels (2016-2019 cohorts) released at previous reintroduction sites annually. | October 31, 2027 |
| Conduct surveys near previous reintroduction sites to find offspring of propagated mussel populations. | October 31, 2027 |
| Conduct surveys at new locations to determine status and management needs for other mussel species. | June 30, 2028 |

### **Activity 3: Expanding public awareness and engagement of native mussels**

**Activity Budget:** $118,293

**Activity Description:**The Zoo will amplify the “Show Us your Mussels'' (SUYM) challenge implemented previously with ENRTF support. This campaign promotes awareness about Minnesota’s water resources and encourages associated public action such as reducing de-icing salt and fertilizer use. We will leverage our educational expertise and engage teachers and their middle and high schools students in the development of informational campaigns addressing water quality and mussel conservation. Students then present their findings at a Mussel Exhibition at the Minnesota Zoo. We will evaluate the impact on knowledge, attitudes, and behaviors and provide teachers multiple levels of support. Zoo Conservation and Education staff will conduct related outreach both on- and off-site. The DNR will inform the public and media about our program and the importance of mussels through a variety of events, including the MN State Fair. At these events, people of all ages can learn about the new ENRTF-supported mussel ID app (Clam Counter MNDNR), handle shells, buttons, and live mussels, and take home posters and field guides. Quarterly posts to the DNR Facebook and Instagram pages and our CAMP newsletter, will provide updates on our activities.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Approximate Completion Date** |
| Zoo: Create professional development videos to support the SUYM challenge. | June 30, 2026 |
| Zoo: Recruit a small teacher advisory group to assist with implementation of the SUYM challenge. | August 31, 2026 |
| Zoo: Recruitment of new schools to participate in the SUYM challenge (annual). | February 28, 2028 |
| Zoo: Professional development, school presentations and other support provided to teachers. | April 30, 2028 |
| Zoo: Schools visit Zoo to showcase their projects to staff, peers, and public (annual). | April 30, 2028 |
| DNR: Annual presentation(s) at various platforms (State Fair, Water Festival, Nature Centers). | June 30, 2028 |
| DNR: Quarterly posts to the DNR Facebook and Instagram pages. | June 30, 2028 |

## **Project Partners and Collaborators**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Organization** | **Role** | **Receiving Funds** |
| Tamara Smith | US Fish and Wildlife Service, Region 3 office | Permitting and planning for reintroduction of federally listed species. Funds acquired for this project can be used as matching funds for our State Wildlife Grants on a 35% state 65% federal basis. $135,000 will be used as match. | No |
| Megan Bradley | US Fish and Wildlife Service, Genoa National Fish Hatchery | Technical guidance and expertise. Provision of additional juvenile mussels and coordination of release of more fully-grown sub-adult mussels. | No |
| Elizabeth Glidewell | US Fish and Wildlife Service, Genoa National Fish Hatchery | Technical guidance and expertise. Provision of additional juvenile mussels and coordination of release of more fully-grown sub-adult mussels. | No |
| Michelle Bartsch | U.S. Geological Survey | Technical guidance and expertise. Provision of additional juvenile mussels and coordination of release of more fully-grown sub-adult mussels. | No |
| Dan Kelner | U.S. Army Corps of Engineers | Coordinates and pays for monitoring of reintroduction sites on the Mississippi River | No |
| Luke Reese | Hormel Nature Center | Director and project advocate for mussels in Austin and at HNC. New freshwater mussel exhibit at HNC. | No |
| Alli Holdhusen, Marian Shaffer | National Park Service | Assists with monitoring and collection of donor mussels. | No |
| Tim Ruzek | Mower County Soil & Water Conservation District and Friends of the Hormel Nature Center | Assist with mussel release locations in the Cedar River, and monitor East Side Lake cage location. | No |
| Jeremy Tiedemann | Illinois Natural History Survey | Technical guidance and expertise. | No |
| Andrew Scholten | MN DNR | Primary contact for secondary culture in ponds at Waterville Fish Hatchery | No |
| Ben Minerich | Minnesota Zoo | Coordination of mussel rearing and research activities at the Minnesota Zoo. Support for field surveys and implementation of the Show Us Your Mussels challenge and other education activities at the Zoo. | Yes |
| Gina Goralski | Minnesota Zoo | Coordination of the Show Us Your Mussels challenge at the Minnesota Zoo. | Yes |
| Seth Stapleton | Minnesota Zoo | Provision of technical expertise for scientific components of the project. Support for implementation of the Show Us Your Mussels challenge and other education activities at the Zoo. | Yes |

## **Dissemination**

**Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.**OUTREACH - See Activity 3 for details. The MN DNR and MN Zoo will expand public awareness and engagement of native mussels and Minnesota’s water resources through the “ Show us your Mussels” challenge and a variety of public outreach events and social media outlets.

COMMUNICATING PROJECT RESULTS - Results of our novel propagation work will be shared during outreach events, at regional and national freshwater mussel conferences (such as the Freshwater Mollusk Conservation Society, Upper Mississippi River Conservation Committee) with other scientists, through DNR and Zoo technical reports, and via Zoo social media outlets and member newsletters. Technical reports will provide other scientists with valuable information about how to propagate specific mussel species and will also be available to the public, but any information or data that could possibly be used to harm federally or state-listed species (e.g., specific relocation site) will be redacted.

ENRTF will be acknowledged on all outreach and communications materials mentioned above using the ENRTF logo and appropriate citation language.

## **Long-Term Implementation and Funding**

**Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?**This proposal is part of a multi‐partner effort to restore depleted mussel populations across the upper Midwest, encompassing new watersheds and species. Healthy mussel communities perform significant water filtration services, removing harmful bacteria and contaminants. As such, we anticipate that restoration will play an important role in achieving Minnesota’s clean water goals. Our combined efforts will advance the recovery of imperiled mussels, expand public awareness, and inspire actions to improve water quality, including proper disposal of pet waste and appropriate fertilizer use. We anticipate that conservation activities will extend beyond this proposal period and will seek alternative future funding

## **Other ENRTF Appropriations Awarded in the Last Six Years**

|  |  |  |
| --- | --- | --- |
| **Name** | **Appropriation** | **Amount Awarded** |
| Restoring Native Mussels in Streams and Lakes | M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 03b | $500,000 |
| Expanding Restoration And Promoting Awareness Of Native Mussels | M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 03f | $489,000 |
| Restoring Mussels In Streams And Lakes - Continuation | M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 08b | $619,000 |
| Restoring Mussels in Streams and Lakes - Continuation | M.L. 2023, , Chp. 60, Art. 2, Sec. 2, Subd. 08d | $825,000 |

## **Budget Summary**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category / Name** | **Subcategory or Type** | **Description** | **Purpose** | **Gen. Ineli gible** | **% Bene fits** | **# FTE** | **Class ified Staff?** | **$ Amount** |
| **Personnel** |  |  |  |  |  |  |  |  |
| DNR -- Supervisor |  | Administration, coordination, and assistance of Activity 1-3 |  |  | 25% | 0.99 | X | $118,350 |
| DNR -- Research Scientist |  | Coordination and implementation of Activity 1-2 |  |  | 25% | 0.69 | X | $87,800 |
| DNR -- NR Specialist Senior |  | Coordination and implementation of Activity 1-2 |  |  | 25% | 1.53 | X | $158,220 |
| DNR -- NR Specialist Intermediate |  | Coordination and implementation of Activity 1-3 |  |  | 25% | 0.93 | X | $236,700 |
| DNR -- NR Specialist |  | Assist with implementing Activity 1-3 |  |  | 25% | 1.23 | X | $178,740 |
|  |  |  |  |  |  |  | **Sub Total** | **$779,810** |
| **Contracts and Services** |  |  |  |  |  |  |  |  |
| Liu Evelyn Shui Quing | Service Contract | DNR -- Fees associated with maintaining Clam Counter App. $2,000 per year. |  |  |  | 0 |  | $6,000 |
| Minnesota Zoo | Subaward | Personnel ($160,490) – Mussel Conservation Specialist, Education Project Coordinator, Mussel Educator; Contracts ($11,000) – video production and teachers; Equipment ($61,000) – consumables for maintenance of systems; Travel in MN ($3,600) – field sites and conferences; Printing & Publications ($3,600); Other ($27,000) – student transportation. |  | X |  | 1.32 |  | $266,690 |
|  |  |  |  |  |  |  | **Sub Total** | **$272,690** |
| **Equipment, Tools, and Supplies** |  |  |  |  |  |  |  |  |
|  | Tools and Supplies | Mussel and fish food, propagation laboratory supplies, field gear | DNR - propagation lab and field expenses |  |  |  |  | $79,800 |
|  | Tools and Supplies | Poster stands, poster board, mussel stickers, mussel temporary tattoos, etc. | DNR - Items for outreach |  |  |  |  | $1,500 |
|  |  |  |  |  |  |  | **Sub Total** | **$81,300** |
| **Capital Expenditures** |  |  |  |  |  |  |  |  |
|  |  | Hach flow meter | Used to measure flow rate at mussel reintroduction sites | X |  |  |  | $10,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$10,000** |
| **Acquisitions and Stewardship** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Travel In Minnesota** |  |  |  |  |  |  |  |  |
|  | Miles/ Meals/ Lodging | DNR -- Fleet costs, meal and mileage reimbursement. No lodging. | DNR - Trips to conduct propagation work and outreach |  |  |  |  | $48,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$48,000** |
| **Travel Outside Minnesota** |  |  |  |  |  |  |  |  |
|  | Conference Registration Miles/ Meals/ Lodging | DNR -- Attendance at Freshwater Mollusk Conservation Society Meeting. Registration, transportation, meals, lodging. | DNR - Present grant results and network with other mussel propagation professionals | X |  |  |  | $2,100 |
|  | Miles/ Meals/ Lodging | DNR -- Travel to mussel propagation laboratories in other states (e.g., Alabama DNR and Kentucky DNR) | DNR -- To learn about other custom mussel propagation systems and techniques. | X |  |  |  | $2,800 |
|  |  |  |  |  |  |  | **Sub Total** | **$4,900** |
| **Printing and Publication** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Other Expenses** |  |  |  |  |  |  |  |  |
|  |  | DNR’s direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated projects. HR Support ($21,311), Safety Support ($2,992), Financial Support ($10,896), Communication Support ($1,528), IT Support ($57,548), and Planning Support ($1,137). | DNR - Direct and Necessary (overhead costs) |  |  |  |  | $61,300 |
|  |  |  |  |  |  |  | **Sub Total** | **$61,300** |
|  |  |  |  |  |  |  | **Grand Total** | **$1,258,000** |

### **Classified Staff or Generally Ineligible Expenses**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category/Name** | **Subcategory or Type** | **Description** | **Justification Ineligible Expense or Classified Staff Request** |
| **Personnel** - DNR -- Supervisor |  | Administration, coordination, and assistance of Activity 1-3 | **Classified :** This position does not have a permanent dedicated funding base and so the MN DNR cannot backfill the ENRTF portion of their salaries. Classified staff manage this program but they may not be retained to work on mussels without the support of this ENTRF grant. Retaining these positions is essential for implementing this project. |
| **Personnel** - DNR -- Research Scientist |  | Coordination and implementation of Activity 1-2 | **Classified :** This position does not have a permanent dedicated funding base and so the MN DNR cannot backfill the ENRTF portion of their salaries. Classified staff manage this program but they may not be retained to work on mussels without the support of this ENTRF grant. Retaining these positions is essential for implementing this project. |
| **Personnel** - DNR -- NR Specialist Senior |  | Coordination and implementation of Activity 1-2 | **Classified :** This position does not have a permanent dedicated funding base and so the MN DNR cannot backfill the ENRTF portion of their salaries. Classified staff manage this program but they may not be retained to work on mussels without the support of this ENTRF grant. Retaining these positions is essential for implementing this project. |
| **Personnel** - DNR -- NR Specialist Intermediate |  | Coordination and implementation of Activity 1-3 | **Classified :** This position does not have a permanent dedicated funding base and so the MN DNR cannot backfill the ENRTF portion of their salaries. Classified staff manage this program but they may not be retained to work on mussels without the support of this ENTRF grant. Retaining these positions is essential for implementing this project. |
| **Personnel** - DNR -- NR Specialist |  | Assist with implementing Activity 1-3 | **Classified :** This position does not have a permanent dedicated funding base and so the MN DNR cannot backfill the ENRTF portion of their salaries. Classified staff manage this program but they may not be retained to work on mussels without the support of this ENTRF grant. Retaining these positions is essential for implementing this project. |
| **Contracts and Services** - Minnesota Zoo | Subaward | Personnel ($160,490) – Mussel Conservation Specialist, Education Project Coordinator, Mussel Educator; Contracts ($11,000) – video production and teachers; Equipment ($61,000) – consumables for maintenance of systems; Travel in MN ($3,600) – field sites and conferences; Printing & Publications ($3,600); Other ($27,000) – student transportation. | The 3 staff positions provide necessary expertise required to successfully implement Activities 1-3. ENRTF funding will make it possible for these individuals to work on the project for the percentage of time indicated in the budget. Without this funding, they would be unable to support the project with their time. Responsibilities for classified staff will be reprioritized and reallocated as necessary to support the project. |
| **Capital Expenditures** |  | Hach flow meter | We will monitor mussel growth and survival and habitat parameters over time to evaluate the success of our mussel reintroduction efforts.**Additional Explanation :** Monitoring at mussel reintroduction sites will be ongoing, and measuring flow will always be measured. |
| **Travel Outside Minnesota** | Conference Registration Miles/Meals/Lodging | DNR -- Attendance at Freshwater Mollusk Conservation Society Meeting. Registration, transportation, meals, lodging. | One project member will attend the Freshwater Mollusk Conservation Society's (FMCS) Biennial Conference in 2027 (national-level conference) to present project findings and participate in the mussel propagation committee to share and learn propagation techniques with professionals from other states. The partners in this project are the only group propagating mussels in MN, so it is valuable to network with professionals in other states. FMCS is a highly active and world-renowned group of freshwater mollusk professionals. |
| **Travel Outside Minnesota** | Miles/Meals/Lodging | DNR -- Travel to mussel propagation laboratories in other states (e.g., Alabama DNR and Kentucky DNR) | To increase the health and number of mussels produced (Activity 1), we are planning to build custom mussel propagation ponds as soon as possible (non-LCCMR funding already acquired) and have purchased a new particle counter (non-LCCMR funding) to help us determine optimal feeding regimes for our mussels. The particle counter can measure, count, and photograph algae and other particles in a water sample. Traveling to the Kentucky DNR and Alabama DNR where they have decades of experience with custom mussel propagation ponds and particle counters will help our three full-time Mussel propagation staff learn about pond design and pond management specific to mussels and use of the particle counter for examining mussel feeding rates and food preferences. This travel is necessary because interactive in-person learning and discussion is more effective when working with complex systems and advanced technology. Learning and discussion during this travel will help us produce better outcomes for Activity 1 and it will have a lasting positive impact on our mussel propagation efforts into the future. Travel is expected to occur in spring of 2026, and three full-time propagation employees will participate. Ideally, trips to both facilities would occur in one trip but may need to be split into two trips (one for Kentucky; one trip for Alabama). |

### **Non ENRTF Funds**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Specific Source** | **Use** | **Status** | **$ Amount** |
| **State** |  |  |  |  |
| Cash | Minnesota Zoo's General Operating budget | Zoo -- Administrative costs, utilities and other expenses associated with implementation of activities, estimated at 15% of the total request to the Zoo | Secured | $48,646 |
|  |  |  | **State Sub Total** | **$48,646** |
| **Non-State** |  |  |  |  |
|  |  |  | **Non State Sub Total** | **-** |
|  |  |  | **Funds Total** | **$48,646** |

**Total Project Cost: $1,306,646**

**This amount accurately reflects total project cost?**
 Yes

## **Attachments**

### **Required Attachments**

#### ***Visual Component***

File: [a6926849-a66.pdf](https://lccmrprojectmgmt.leg.mn/media/map/a6926849-a66.pdf)

#### ***Alternate Text for Visual Component***

This visual depicts the three activities proposed for this project. This project will improve the conservation of native mussels by rearing and releasing imperiled species, monitoring restored populations, and inspiring public action, thereby improving the health of aquatic ecosystems in Minnesota....

## **Difference between Proposal and Work Plan**

#### ***Describe changes from Proposal to Work Plan Stage***

BUDGET AND ACTIVITY CHANGES (total budget changes = $288,000 reduction)

MN DNR (total reduction = $230,400)

Personnel budget - Total reduction for personnel = $160,713 (salary for Activity 3 reduced, funding for intern removed, funding for NR Specialist position reduced in Activity 2).
Printing and publication budget - Posters and Mussel ID booklets ($30,000).
Equipment etc - reduced by $5,600.
Other budget - Direct and Necessary updated appropriately based on budget reduction ($29,687 reduction).
Activity 3 - Salary reduced by 86%. Removed the milestone related to printing posters and mussel identification booklets, but the DNR will still participate in outreach across the state (e.g., State Fair).

MN ZOO (total reduction = $57,600)

Personnel - Support for Education staff (Activity 3) reduced by $22,160, with a corresponding reduction in off-site education activities. Natural Resources Specialist support reduced by $6,740, with a corresponding reduction in project activities.
Contracts and Services - Videography contract reduced by $1,000.
Contracts and Services - Teacher contracts reduced by $1,500, now including 3 individuals per summer.
Equipment, Tools, and Supplies - Funding for supplies to construct new host animal systems as part of Activity 1 was eliminated and reduces the supply budget by $16,000. Rearing of additional mussel species that require novel fish hosts will not be pursued as listed in Activity 1.
Travel in Minnesota - Conference travel related to Activity 3 reduced by $1,200 ($400 / year).
Other - Funding for bussing students from area schools to the Zoo to engage with educational programs and the Show Us Your Mussels campaign was reduced by $9,000, with a corresponding reduction in students bussed to Zoo campus to share their SUYM educational campaign projects.

## **Additional Acknowledgements and Conditions:**

The following are acknowledgements and conditions beyond those already included in the above workplan:

**Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?**
 Yes

**Do you understand that travel expenses are only approved if they follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?**
 Yes, I understand the Commissioner's Plan applies.

**Does your project have potential for royalties, copyrights, patents, sale of products and assets, or revenue generation?**
 No

**Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?**
 N/A

**Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?**
 N/A

**Does your project include original, hypothesis-driven research?**
 No

**Does the organization have a fiscal agent for this project?**
 No

**Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing $10,000 or more or large-scale stream or wetland restoration?**
 No

**Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services (as defined in Minnesota Statutes section 299C.61 Subd.7 as "the provision of care, treatment, education, training, instruction, or recreation to children")?**
 Yes

**Do you certify that background checks are performed for background check crimes, as defined in Minnesota Statutes, section 299C.61, Subd. 2, on all employees, contractors, and volunteers who have or may have access to a child to whom children's services are provided by your organization?**
 Yes

**Provide the name(s) and organization(s) of additional individuals assisting in the completion of this project:**

 Seth Stapleton and Ben Minerich (Minnesota Zoo), Lindsay Ohlman and Isabel Boyce (Minnesota DNR)

**Do you understand that a named service contract does not constitute a funder-designated subrecipient or approval of a sole-source contract? In other words, a service contract entity is only approved if it has been selected according to the contracting rules identified in state law and policy for organizations that receive ENRTF funds through direct appropriations, or in the DNR’s reimbursement manual for non-state organizations. These rules may include competitive bidding and prevailing wage requirements**
 Yes, I understand