

## **2017 Project Abstract**

For the Period Ending June 30, 2020

**PROJECT TITLE: Minnesota Wildflowers Online Botanical Reference – Phase II**

**PROJECT MANAGER: Catherine Chayka**

**AFFILIATION: Minnesota Wildflowers Information**

**MAILING ADDRESS: 1590 Long Lake Rd**

**CITY/STATE/ZIP: New Brighton, MN 55112**

**PHONE: 651-399-4064**

**E-MAIL: [info@minnesotawildflowers.info](mailto:info@minnesotawildflowers.info)**

**WEBSITE: <https://www.minnesotawildflowers.info>**

**FUNDING SOURCE: Environment and Natural Resources Trust Fund**

**LEGAL CITATION: M.L. 2017, Chp. 96, Sec. 2, Subd. 03e**

**APPROPRIATION AMOUNT: \$270,000**

**AMOUNT SPENT: \$210,557**

**AMOUNT REMAINING: \$59,443**

### **Sound bite of Project Outcomes and Results**

The Minnesota Wildflowers online botanical reference now covers over 80% of all Minnesota's flora, providing the most complete, free, user-friendly plant resource for the state, targeting a wide range of users from all age groups and experience levels.

### **Overall Project Outcome and Results**

Minnesota Wildflowers, an online field guide to the plants of Minnesota, was launched in 2007 by an amateur botanist who grew frustrated with the lack of information and quality imagery specific to Minnesota's flora. The task of systematically seeking out each species, photographing the identifying characteristics, describing each in non-technical terms, and publishing on the web was undertaken with the goal of becoming a comprehensive reference for all of Minnesota's 2100+ plants. The need for such a reference, especially targeted to non-botanists, has been evident by the number and type of users of the website, virtually anyone asking such questions as: *What is that plant? Is it native or a weed? How to distinguish it from similar plants?* These users include natural resource managers, restoration specialists, educators from elementary school through university level, citizen scientists, native plant advocates, gardeners and the general public. In 2014 when initial funding began, 799 species (mostly forbs) had been published and the average traffic during peak season was 2,000 visits and 10,000 web pages viewed per day. During the 6-year funding period ending June 2020, the 2-member team traveled 65,000 miles visiting locations in nearly every Minnesota county, photographing over 1500 plant species. This field work resulted in significantly increased coverage. As of June 30, 2020, 1734 species have been published, 82% of all Minnesota's vascular plants, including trees/shrubs, grass-like plants, ferns and aquatics. Traffic has more than tripled with average 8,000 visits and 33,600 pages viewed per day during 2020 peak season, increases of 60% and 45% respectively over 2017 when the second round of funding began. This clearly shows the website is a valued resource and the more species covered, the more valuable it becomes.

### **Project Results Use and Dissemination**

Usage of the website continues to grow; expectations are we will reach 1 million users in 2020. While word-of-mouth and Google searches are the source of much traffic, our web statistics show the single highest usage continues to come from the State of Minnesota, which includes multiple state agencies as well as the University of Minnesota. Our plant images are in high demand for other educational and outreach purposes, including interpretive signs, PowerPoint presentations and invasive species fact sheets, all of which promote the project via photo credits. Our field work puts us in contact with many state parks, nature centers and educational institutions across the state where we promote the project to their staff and visitors. During the past 3 years we collaborated with the Minnesota Landscape Arboretum on their native plant program, began discussions with the Minnesota Nursery and Landscape Association Foundation on contributing to their botany-related educational curriculum, manned a booth at the international Botany Conference in Rochester, had an interview on CCTV, and gave presentations about the project to Audubon, Wild Ones, and several other clubs and organizations. A marketing postcard was also developed and distributed to nature centers, educators, organizations and businesses across Minnesota.



# Environment and Natural Resources Trust Fund (ENRTF) M.L. 2017LCCMR Work Plan Final Report

**Date of Submission:** July 30, 2020

**Final Report**

**Date of Work Plan Approval:** 06/07/2017

**Project Completion Date:** June 30, 2020

**PROJECT TITLE:** Minnesota Wildflowers Online Botanical Reference – Phase II

**Project Manager:** Catherine Chayka

**Organization:** Minnesota Wildflowers Information

**Mailing Address:** 1590 Long Lake Road

**City/State/Zip Code:** New Brighton, MN 55112

**Telephone Number:** (651) 399-4064

**Email Address:** info@minnesotawildflowers.info

**Web Address:** https://www.minnesotawildflowers.info

**Location:**

**Plant Survey & Photography:** Selected sites statewide

**Website publishing:** In-house at New Brighton address

**Total ENRTF Project Budget:**

**ENRTF Appropriation:** \$270,000

**Amount Spent:** \$210,557

**Balance:** \$59,443

**Legal Citation:** M.L. 2017, Chp. 96, Sec. 2, Subd. 03e

**Appropriation Language:**

\$270,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Minnesota Wildflowers Information to continue surveying and imaging plant species and publishing species profiles for a plant identification reference Web site available to the public and land managers. Images acquired and information compiled using these funds are for purposes of public information available on a Web site. If the organization is no longer able to maintain the Web site, the organization must work with the state and the University of Minnesota, Bell Museum of Natural History, to ensure the materials remain publicly available on the Web. This appropriation is available until June 30, 2020, by which time the project must be completed and final products delivered.

## **I. PROJECT TITLE: Continue Expansion of the Minnesota Wildflowers Online Botanical Reference**

### **II. PROJECT STATEMENT:**

Apart from a handful of professionals, the average Minnesotan and even most professional natural resource managers are not skilled in plant identification, yet the ability to positively identify plants is crucial in identifying areas that need protection, in recognizing new or existing invasive species, in monitoring restoration projects, in delineating wetlands, in managing invasive species. The Minnesota Wildflowers project fills this need by providing a free, web-based field guide that currently profiles over 1200 plant species with more than 10,000 high quality photos. This 3-year funding commitment will allow the project to complete the work begun with 2014-2017 ENRTF funding, add aquatic plants, and expand the image catalog by a target 400-600 additional species. At the end of this project 85-90% of the 2100+ vascular plant species in Minnesota, as recognized by the Minnesota Department of Natural Resources, will be profiled online or ready to publish.

Quality control is paramount to producing a quality reference. We use only credible botanical sources as well as our extensive personal experience in drafting species accounts. The richness of the resource comes from the high quality technical images associated with each species. Experience has taught us that the only way to reliably obtain the quality images required for identification purposes is to photograph the plants ourselves (donated images rarely meet quality standards, are inadequate to supply a complete suite for a species account, or simply do not exist for many Minnesota plant species). Gathering technical images requires extensive field work throughout the state during the growing season, and intensive publishing through the winter months.

### **III. OVERALL PROJECT STATUS UPDATES:**

#### **Project Status as of October 13, 2017:**

The project is on track to meet all objectives. As of October 1, 1362 total species have been published on the website. During this status period, 7400 miles were traveled within Minnesota and approximately 265 species photographed in preparation for future publishing.

#### **Project Status as of April 23, 2018:**

Publishing is progressing on schedule with no unexpected slow downs or delays. As of March 31, 1464 total species have been published on the website. Little field work is done from October-March except to obtain a limited number of images and specimens for late season grasses and dormant trees and shrubs.

#### **Project Status as of October 15, 2018:**

All work on the project was temporarily halted from late August through mid September due to a sudden illness in the family. Because of the lateness of the season, this had a small impact on field work and mostly affected publishing tasks. We expect to make up that time. As of September 30, 1537 total species have been published on the website, approximately 72% of Minnesota's plants. During this status period, 7300 miles were traveled within Minnesota and approximately 145 species photographed. Due to field season successes since 2014, only about 200 species from the 2100+ known to be in Minnesota are left to locate. These are all uncommon or rare species and will affect future field work, traveling farther and taking longer to track down a handful of remaining species; approximately 100 of these are from historical collections and may no longer exist in the state. The law of diminishing returns means out of state travel or otherwise finding suitable images taken in other parts of the country will likely be required to adequately cover some of these species, though we have learned from experience that much of the imagery we deem suitable does not exist.

A draft MOU with the Bell Museum of Natural History, regarding turnover of the project should the MWI organization dissolve, has been prepared and is undergoing approvals at this time.

#### **Project Status as of April 9, 2019:**

Publishing is slightly behind schedule but we still expect to meet our goals. As of March 31, 1611 total species have been published on the website, 76% of all Minnesota's flora. Planning for future field work shows less travel in Minnesota and more out-of-state trips expected during the next two seasons to locate and photograph species difficult to find in-state; much of this will be in Wisconsin. Public donations have exceeded expectations and should be sufficient to cover those travel expenses.

The MOU with the Bell Museum of Natural History, regarding turnover of the project should the MWI organization dissolve, has been approved and signed by all parties.

**Project Status as of October 14, 2019:**

We are on track to meet our objectives. As of September 30, 1670 total species have been published on the website, 80% of Minnesota's plants. During this status period, 7100 miles were traveled within Minnesota and approximately 100 species photographed. We have complete image sets for over 150 species that can be published in the coming months, 115 species with incomplete sets, and ~150 species that have not yet been located. Next field season will concentrate on completing the 115, however, due to phenology much of the necessary field work will likely be after July 1.

**Project Status as of April 30, 2020:**

As of April 30, 1734 total species have been published on the website, 82% of Minnesota's flora. Of the final 350-400 species not yet published, some are in a state of taxonomic flux and we are waiting for some stability before going forward, to avoid duplication of effort. Others include groups that are some of the more difficult to distinguish from each other, such as members of the raspberry/blackberry/dewberry group (*Rubus* genus). These take extra study prior to publishing and additional assistance from experts in these species to identify the true diagnostic traits so they can be accurately profiled. As a result, the publishing rate slowed over the past few months.

On April 15, 2020, through no fault of her own, an incident resulted in severe damage to home of Katy Chayka. Her home office and desktop computer became unavailable while police investigate the incident; there is no estimated timeframe for return of her computer but it is expected to be several weeks. While backups of the website and all images are available in the cloud and on an external hard drive, access from a laptop and unreliable WiFi make publishing any additional species difficult at best. The remaining two months in this project will focus on planning and the field work that can be accomplished at this time of year. Peter Dziuk has also left the project and Chayka will assume his responsibilities.

**Overall Project Outcomes and Results:**

Minnesota Wildflowers, an online field guide to the plants of Minnesota, was launched in 2007 by an amateur botanist who grew frustrated with the lack of information and quality imagery specific to Minnesota's flora. The task of systematically seeking out each species, photographing the identifying characteristics, describing each in non-technical terms, and publishing on the web was undertaken with the goal of becoming a comprehensive reference for all of Minnesota's 2100+ plants. The need for such a reference, especially targeted to non-botanists, has been evident by the number and type of users of the website, virtually anyone asking such questions as: *What is that plant? Is it native or a weed? How to distinguish it from similar plants?* These users include natural resource managers, restoration specialists, educators from elementary school through university level, citizen scientists, native plant advocates, gardeners and the general public. In 2014 when initial funding began, 799 species (mostly forbs) had been published and the average traffic during peak season was 2,000 visits and 10,000 web pages viewed per day. During the 6-year funding period ending June 2020, the 2-member team traveled 65,000 miles visiting locations in nearly every Minnesota county, photographing over 1500 plant species. This field work resulted in significantly increased coverage. As of June 30, 2020, 1734 species have been published, 82% of all Minnesota's vascular plants, including trees/shrubs, grass-like plants, ferns and aquatics. Traffic has more than tripled with average 8,000 visits and 33,600 pages viewed per day during 2020 peak

season, increases of 60% and 45% respectively over 2017 when the second round of funding began. This clearly shows the website is a valued resource and the more species covered, the more valuable it becomes.

**IV. PROJECT ACTIVITIES AND OUTCOMES:**

**ACTIVITY 1: Field Survey, Digital Photography and Publishing**

**Description:**

Precise, high resolution digital images of all key plant morphological characteristics that are necessary for accurate identification will be collected from locations across the state. Over 99% of images used in the Minnesota Wildflower identification resource are obtained directly in the field by staff through survey, using historical records available from the Herbarium at the Bell Museum of Natural History as a primary source of location information for specific species. Survey sites are selected based on age, habitat quality and site accessibility. Underwater cameras are utilized to photograph aquatic species in their natural habitat as much as possible. When appropriate and permitted, specimens may be collected for further study and photography in vitro. If species are located but not suitable for photography, for reasons such as poor weather or phenology, their locations are documented using GPS for return trips later that season or in subsequent seasons. Most images are reviewed post field season for quality and/or redundancy.

Species identification accounts are drafted addressing all key morphological structures (i.e. flowers, leaves, stems, etc.), using field notes cross-referenced with standard accepted botanical references (e.g. Flora of North America, etc.). County distribution maps are constructed using confirmed personal observations and Herbarium records for point locations, along with the DNR’s MNTaxa county level information. Technical terms are rephrased as needed to ensure understanding by users of all experience levels. Cross references are made to related and/or similar species, and a previously published species may be updated to include new information, additional or improved images, and/or a reciprocal link to the new species account. Cataloged field images are again reviewed for completeness, selected and edited as required to clearly show the desired traits, then optimized for web use and uploaded to the remote web site. The final text draft is typically reviewed by a collaborator before publishing and any errors, omissions or ambiguities corrected.

Taxonomy and the statewide vascular plant spreadsheet published by the Minnesota Department of Natural Resources (i.e. MNTaxa) are reviewed annually. Previously published species accounts are updated accordingly when appropriate.

**Summary Budget Information for Activity 1:**

**ENRTF Budget: \$270,000**  
**Amount Spent: \$210,557**  
**Balance: \$59,443**

<b>Outcome</b>	<b>Completion Date</b>
<b>1.</b> 33,000 miles traveled statewide, 40-50 sites visited/yr, complete image sets obtained for targeted 250-400 plant species - both native and exotic, including aquatics, forbs, trees, shrubs, ferns, grasses, sedges, rushes	June 30, 2020
<b>2.</b> Minimum 450 new plant species pages added to field guide, including aquatics, forbs, trees, shrubs, ferns, grasses, sedges, rushes	June 30, 2020

**Activity 1 Status as of October 13, 2017:**

For the period of July 1-October 1, 7433 miles were traveled across the state, visiting destinations in 38 Minnesota counties. Over 8,500 images were captured covering 265 plant species, approximately 40 of which are aquatics, though complete sets were not obtained for all of these species. Approximately 25% were improvements or expansions upon previously published species. In photographing aquatics, we learned that later in the season the amount of algae in the water can significantly impact the photographic quality. Some species may have to be tracked down earlier in the season than previously anticipated, though waters may be too cold at that time for many *in situ* photos.

Publishing tasks are minimal during the field season. For the period of July 1 - October 1, 23 species were added and 6 updated with improved images, information and new or updated county distribution maps.

**Activity 1 Status as of April 23, 2018:**

For the period of October 1-March 31 travel was very limited, primarily to obtain late season grasses, and buds for dormant trees and shrubs.

127 species have been added to the website and 38 updated since the project began in July, 2017. For the period of October 1 - March 31, 104 species were added: 33 forbs (32%), 11 trees/shrubs, 58 grasses/sedges, 1 fern, 1 aquatic; 34 other species were updated. An updated MNTaxa plant list was downloaded in early January and county distributions updated for numerous previously published species; new distribution maps are in progress. Taxonomy updates to 33 previously published species are in progress.

**Activity 1 Status as of October 15, 2018:**

The late spring caused field season activities to be delayed 2-3 weeks over previous years and affected phenology for some target species. For the period of April 1-October 1, 7300 miles were traveled across the state, visiting destinations in 29 Minnesota counties. Over 10,000 images were captured covering 145 plant species, focusing on aquatics and the remaining grasses and sedges, though complete sets were not obtained for all of these species. Approximately 15% were improvements or expansions upon previously published species. 73 species were added to the website, over 50% of them grasses and sedges, and 26 species were updated.

**Activity 1 Status as of April 9, 2019:**

For the period of October 1-March 31 travel was very limited, only to obtain late season club mosses.

274 species have been added to the website and 85 updated since the project began in July, 2017. For the period of October 1 - March 31, 74 species were added: 17 forbs, 1 tree/shrub, 40 grasses/sedges, 9 ferns, 7 aquatics; 25 other species were updated with new taxonomy or other information, and many distribution maps were updated. A new section was added to the website for aquatic plants, starting with common pondweeds.

**Activity 1 Status as of October 14, 2019:**

The wet summer and high water were impediments to some field work, particularly for aquatics and those shoreline species that depend on receding water levels. The trend of wetter springs and summers means this will likely be the case in the future as well. For the period of April 1 to September 30, 7100 miles were traveled in-state, surveying sites in 26 counties, plus 800 miles in Wisconsin in pursuit of species difficult to find in Minnesota. 5500 images were captured of approximately 120 species. 59 species were added to the website, plus distribution map and image updates for ~45 species. We currently have complete images sets for more than 150 species that are scheduled to be published in the coming months and incomplete sets for 115 more. Of the remaining ~150 species that have not yet been located, 32 are Listed species (rare natives as designated by the DNR) and the rest uncommon natives and weeds which no longer exist at previous collection sites, some likely no longer in the state, and many of which are transitory.

**Activity 1 Status as of April 30, 2020:**

For the period of October 1-April 30, 1500 miles were traveled to obtain late season forbs and grasses in 6 Minnesota counties. A total of 397 species have been added to the website and 112 updated since the project began in July, 2017. For the period of October 1 - April 30, 68 species were added: 18 forbs, 1 tree/shrub, 31 grasses/sedges, 3 ferns, 15 aquatics; 25 other species were updated with new taxonomy or other information, and numerous distribution maps were updated.

**Final Report Summary:**

Since this second round of funding began in July, 2017, 397 species were added to the website, for a total of 1734, 82% of all Minnesota's flora including forbs, trees/shrubs, grass-like plants, ferns and aquatics. Partial image sets have been obtained for over 150 species and fewer than 200 species have not yet been photographed. Field and publishing work will continue as time and resources allow, with the eventual goal to complete the online catalog.

## **V. DISSEMINATION:**

### **Description:**

Individual species additions and updates are announced on the web site's home page (<https://www.minnesotawildflowers.info>) as they are made, and announcements of important project updates and discoveries are made to social networking sites and/or the web site's blog. We seek out public outreach opportunities at relevant expositions and conferences, as well as presentations to Master Gardeners, Master Naturalists, and other groups and organizations interested in the wild plants of Minnesota.

### **Status as of October 13, 2017:**

No specific public outreach activities were performed during the field season but arrangements have been made for events during the off-season. During field season travels we continue to promote the project to staff at State Parks and nature centers, and to other visitors encountered in parks and natural areas. As of October 1, over 600,000 unique users have visited the website in 2017, viewing 4.2 million web pages. This is more than a 40% increase over the same period last year.

### **Status as of April 23, 2018:**

Public outreach activities included presentations to 5 organizations and garden clubs, and manning a table at the annual Wild Ones convention. Website traffic continues to grow, reaching 736,000 unique users viewing over 5 million web pages in all of 2017, with the first three months of 2018 showing a 25% increase in users and 45% increase in page views over the same period in 2017, which also indicates a rise in repeat users.

### **Status as of October 15, 2018:**

Public outreach activities included manning a table at the annual Minnesota Native Plant Society Symposium, and a booth at the annual Botanical Society of America Conference, an international event held in Rochester in July. We continue to promote the website when visiting State Parks and Nature Centers, as well as encounters with others while in the field. As of October 1, nearly 700,000 unique users have visited the website, viewing 4.4 million web pages. Seasonal changes do affect usage and the very late spring then wet weather in late summer into fall brought fewer users than expected, but still a 10% increase over the first 9 months of 2017.

### **Status as of April 9, 2019:**

We attended two networking opportunities—the annual Wild Ones conference and the Minnesota Native Plant Society Symposium—and have engaged in a collaboration with the Minnesota Landscape Arboretum and their native plant programs. 2018 had 784,000 visitors to the website viewing 5.2 million web pages. After 10 years of 25% or more annual increase in web traffic, it has started to plateau; spring traffic is on par with a year ago. The State of Minnesota, including the University and multiple agencies, continues to be our biggest user after search engines.

### **Status as of October 14, 2019:**

There were no specific outreach activities during the field season, other than our usual promotion while visiting parks and natural areas and periodic posts on social media; presentations are currently scheduled for the off-season. Website traffic is on par with a year ago, with over 670,000 users in the first nine months of 2019, viewing 4.6 million web pages.

### **Status as of April 30, 2020:**

Public outreach activities included presentations at the Twin Cities chapter of Audubon, the annual Wild Ones conference and, and on cable access CCTV during their Non-profit Showcase. We developed a postcard promotion, distributing both printed and digital versions to the Minnesota Science Teachers Association, Bell Museum of Natural History, the Minnesota Landscape Arboretum, Minnesota Master Naturalists, the Minnesota Nursery and Landscape Association, as well as nature centers, coffee shops and other businesses and organizations. Plans to distribute the postcards at events such as the Shade Tree Short Course were cancelled or postponed due to the COVID-19 quarantine. We are in discussions with the Minnesota Nursery and Landscape Association on a collaborative effort to engage schools in botany-related curriculum, using our website as a resource. 2019 had over 796,000 visitors to the website viewing 5.5 million web pages. The first 4 months of 2020 show a 25% increase in web traffic over the same time last year.

**Final Report Summary:**

Usage of the website continues to grow; expectations are we will reach 1 million users in 2020. While word-of-mouth and Google searches are the source of much traffic, our web statistics show the single highest usage continues to come from the State of Minnesota, which includes multiple state agencies as well as the University of Minnesota. Our plant images are in high demand for other educational and outreach purposes, including interpretive signs, PowerPoint presentations and invasive species fact sheets, all of which promote the project via photo credits. Our field work puts us in contact with many state parks, nature centers and educational institutions across the state where we promote the project to their staff and visitors. During the past 3 years we collaborated with the Minnesota Landscape Arboretum on their native plant program, began discussions with the Minnesota Nursery and Landscape Association Foundation on contributing to their botany-related educational curriculum, manned a booth at the international Botany Conference in Rochester, had an interview on CCTV, and gave presentations about the project to Audubon, Wild Ones, and several other clubs and organizations. A marketing postcard was also developed and distributed to nature centers, educators, organizations and businesses across Minnesota.

**VI. PROJECT BUDGET SUMMARY:**

**A. Preliminary ENRTF Budget Overview:**

**\*This section represents an overview of the preliminary budget at the start of the project. It will be reconciled with actual expenditures at the time of the final report.**

<b>Budget Category</b>	<b>\$ Amount</b>	<b>Overview Explanation</b>
Personnel:	\$243,925	.75FTE for 3yrs - P. Dziuk .75FTE for 3yrs - K. Chayka (base salary for each \$54205/yr, no benefits)
Professional/Technical/Service Contracts:	\$	N/A
Equipment/Tools/Supplies:	\$ 2,000	safety GPS beacon, wet suit, camping gear, batteries, maps, miscellaneous field and photography supplies, graphics software
Capital Expenditures over \$5,000:	\$	N/A
Fee Title Acquisition:	\$	N/A
Easement Acquisition:	\$	N/A
Professional Services for Acquisition:	\$	N/A
Printing:	\$	N/A
Travel Expenses in MN:	\$24,075	Field work mileage (11,000/yr, statewide), parking, permits, lodging for 40-50 nights/yr, food for overnight trips plus 10-15 day trips/yr (the preferred and least expensive lodging option is tent camping at state parks and other public lands)
<b>TOTAL ENRTF BUDGET:</b>	<b>\$270,000</b>	

**Explanation of Use of Classified Staff:** N/A

**Explanation of Capital Expenditures Greater Than \$5,000:** N/A

**Total Number of Full-time Equivalent (FTE) Directly Funded with this ENRTF Appropriation:** 4.5 (1.5 FTE x 3 years)

**Total Number of Full-time Equivalent (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation:** N/A

**B. Other Funds:**

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
<b>Non-state</b>			
Public donations (~\$7,000/yr)	\$21,000	\$21,000	Out of state travel, accounting services, taxes, general operating expenses
<b>TOTAL OTHER FUNDS:</b>	<b>\$21,000</b>	<b>\$21,000</b>	

**VII. PROJECT STRATEGY:**

**A. Project Partners:**

**Partners receiving ENRTF funding**

- None

**Partners NOT receiving ENRTF funding**

- Steve Eggers, US Army Corps of Engineers ecologist: additional images
- Jason Husveth, botanist/ecologist: expert peer review and consultation
- The Biota of North America Program (BONAP): national species distribution range maps

**B. Project Impact and Long-term Strategy:**

Of two factors that drive usage (presence on internet over time and volume of content), this project's greatest contribution is towards the latter. Increases in online usage of just the past two years demonstrates the impact of the online field guide: usage has nearly doubled since 2014, approaching .5M users in 2016. Public donations are sufficient to keep this resource operational on an annual basis when ENRTF funding ends in 2020, at which time field work and publishing will continue on a volunteer basis. Discussions are in progress to turn control over to the University of Minnesota Bell Museum of Natural History should the MWI organization dissolve. Public donations may serve to build a reserve to keep it funded and online should the Bell take control.

**C. Funding History:**

Funding Source and Use of Funds	Funding Timeframe	\$ Amount
ENRTF - field work and publishing	7/1/14 - 6/30/17	\$150,000
From 2007 to 7/1/14 the project was funded by volunteers		

**VIII. REPORTING REQUIREMENTS:**

- The project is for 3 years, will begin on 7/1/17, and end on 6/30/20.
- Periodic project status update reports will be submitted 4/30 and 10/31 of each year.
- A final report and associated products will be submitted between June 30 and August 15, 2020.

**IX. VISUAL COMPONENT or MAP(S):**

**What We Do** →

Loc	Pinacete	balam fir	Abies balsamea	262N	121W	about 1.5 mi W of Spina	1.5 mi W of Spina
21	Cook Co., N Shore of Lake Superior, 1/2 mi S of outlet of Tail Lake (SE-most end).			062N	079W		Cook Co., North Shore of Lake Superior, 1/2 mi S of outlet of Tail Lake (SE-most end). T82N, R3W, Sec. 34.
22	Cook	Pinacete	balam fir	Abies balsamea	062N	079W	
23	Cook	Pinacete	balam fir	Abies balsamea	062N	08E	
24	Cook	Pinacete	balam fir	Abies balsamea	063N	08E	
25	Cook	Pinacete	balam fir	Abies balsamea	063N	08E	
26	Cook	Pinacete	balam fir	Abies balsamea	063N	08E	
27	Cook	Pinacete	balam fir	Abies balsamea	063N	07E	
28	Cook	Pinacete	balam fir	Abies balsamea	063N	07E	
29	Cook	Pinacete	balam fir	Abies balsamea	063N	07E	

**Map out itinerary**

**Research species identification information**

**Write species account**

**Drive, drive, drive, take photos**

**Choose & prepare images**

**Draw map**

**Publish!**

X. FEE TITLE ACQUISITION/CONSERVATION EASEMENT/RESTORATION REQUIREMENTS:  
N/A

**Environment and Natural Resources Trust Fund  
M.L. 2017 Project Budget**



**Project Title:** Minnesota Wildflowers Online Botanical Reference – Phase II

**Legal Citation:** M.L. 2017, Chp. 96, Sec. 2, Subd. 03e

**Project Manager:** Catherine Chayka

**Organization:** Minnesota Wildflowers Information

**M.L. 2017 ENRTF Appropriation:** \$270,000

**Project Length and Completion Date:** 3 Years, June 30, 2020

**Date of Report:** July 30, 2020

<b>ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET</b>	<b>Activity 1 Budget</b>	<b>Amount Spent</b>	<b>Activity 1 Balance</b>	<b>TOTAL BUDGET</b>	<b>TOTAL BALANCE</b>
<b>BUDGET ITEM</b>	<b><i>Field survey, Photography &amp; Publishing</i></b>				
<b>Personnel (Wages and Benefits)</b>	\$243,925	\$192,779	\$51,146	\$243,925	\$51,146
Catherine Chayka: Project manager, managing editor, field surveyor, photographer: \$121,962.5 (100% salary); 75% FTE for 3 yrs.					
Peter Dziuk: Field Survey Coord., chief photographer, publishing assistant: \$121,962.5 (100% salary); 75% FTE for 3 yrs					
<b>Equipment/Tools/Supplies</b>	\$2,000	\$1,849	\$151	\$2,000	\$151
Safety GPS beacon					
Wet suit, snorkle					
Photographic supplies, batteries, software					
Camping & miscellaneous field supplies					
<b>Travel expenses in Minnesota</b>	\$24,075	\$15,928	\$8,147	\$24,075	\$8,147
Mileage, throughout MN: ~11000/yr					
Lodging: 40-50 nights/yr					
Food: overnight plus 10-15 day trips/yr					
Parking and permits					
<b>COLUMN TOTAL</b>	<b>\$270,000</b>	<b>\$210,557</b>	<b>\$59,443</b>	<b>\$270,000</b>	<b>\$59,443</b>

# Minnesota Wildflowers



[www.MinnesotaWildflowers.info](http://www.MinnesotaWildflowers.info)

Funding provided in part by:



## The Premier botanical reference for Minnesota

- Comprehensive species lists
- Clear images and concise descriptions
- User friendly for all age groups and identification skill levels
- **Free online**

# Learn your plants!

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High resolution photos show important diagnostic traits.



## Our Mission:

Appreciate our natural heritage and help preserve it



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