

**Environment and Natural Resources Trust Fund
2014 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 020-A

Expand the Minnesota Wildflowers Online Botanical Reference

Category: A. Foundational Natural Resource Data and Information

Total Project Budget: \$ 222,450

Proposed Project Time Period for the Funding Requested: 3 Years, July 2014 - July 2017

Summary:

It's hard to protect what you can't identify. Field work to expand technical image library and accelerate publication of species accounts to increase website utility/usage by public and land managers.

Name: Katy Chayka

Sponsoring Organization: MN Wildflowers Information

Address: 1590 Long Lake Rd

New Brighton MN 55112

Telephone Number: (651) 399-4064

Email kchayka@c-net.us

Web Address <http://www.minnesotawildflowers.info/>

Location

Region: Statewide

County Name: Statewide

City / Township:

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ Employment	_____ TOTAL _____%



PROJECT TITLE: Expand the Minnesota Wildflowers Online Botanical Reference

I. PROJECT STATEMENT

The mission of Minnesota Wildflower Information (MWI) is to educate Minnesotans on our native plants, raise awareness on threats like *invasive species*, and inspire people to explore our great state, appreciate its natural heritage, and become involved in preserving it. Our main education tool is an online field guide that **currently profiles over 700 plant species** with more than 5000 high quality photos. Our web site is already used as a reference by the public and land managers alike. Our users include state park visitors wanting to identify the plants they see, county park volunteers who inform the paid staff of a new invasive species, citizen scientists doing plant surveys at scientific and natural areas, SWCD biologists assessing rock outcrop easements along the Minnesota River, wetland delineators submitting projects to BOWSR, young MDA staff assigned to monitor for invasive species, teachers and students at universities and K-12 science programs to aid in plant identification, gardeners seeking information on native plants and weeds, and many others. The web site is already a widely used resource, on target to serve over 250,000 unique users with over 2 million page views in 2013.

Apart from a handful of professionals, the average Minnesotan and even most professional natural resource managers are not skilled in plant identification—with few exceptions it is not a course taught in schools or universities. Yet the ability to 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 (is this invasive wild parsnip or native golden alexander?). As basic as the information is that we provide to the public, it is *innovative* as nothing like it has been done before on such a scale by any public or private agency or book, in a way that is accessible to non-botanists, both the common Minnesotan and the engaged land manager, with a simple, easy to use web interface. DNR State Botanist Welby Smith has called it the best reference of its kind. MWI is and can be a one-stop shop for learning about both native and invasive plants and has received numerous requests from its users to expand the resource with additional species and information. Our objective is to fulfill those requests.

Quality control is paramount to producing a quality reference. We use only credible botanical sources, the same as used by the DNR and Bell Museum Herbarium, as well as our extensive personal experience in drafting species accounts. We do not publish a species until a positive ID is certain and enlist the aid of Herbarium staff when in doubt. 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 April through October, and intensive publishing through the winter months. Since the project's inception in 2007, these tasks have been funded largely by the creator and collaborators involved, but this is not sustainable. A 3-year funding commitment will allow us to pick up the pace of publishing and expand the image catalog by another 1000 species, meeting user-demand, and working towards documenting all 2100+ plant species in MN.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Field survey work for plant image and information collection

Budget: \$28,750

Based on recent historical information gathered from Bell Museum Herbarium records and other confirmed accounts, hundreds of locations across Minnesota have already been identified and targeted for survey, in the goal to increase the image catalog by 800-1000 species. 15,000 miles per year could be traveled, with 50 overnight stays each year, in the effort to capture specific plants at a specific point of development useful in identification.



Outcome	Completion Date
1. Images and information collected for targeted 800-1000 species	July, 2017

Activity 2: Publish an additional 700-800 species in the online field guide

Budget: \$192,300

It takes an average 6-8 hours to publish a single species. Tasks involve: researching identification information from multiple credible botanical sources (Gleason and Cronquist, Flora of North America, etc.), using the most up-to-date nomenclature as used by the Bell Museum Herbarium, choosing and preparing appropriate technical images, writing species accounts using non-technical language, drawing county distribution maps based on herbarium records as well as personal and other confirmed observations, then publishing to the web site.

Outcome	Completion Date
1. Publish a minimum 700 species	July, 2017

III. PROJECT STRATEGY

A. Project Team/Partners

Team: K. Chayka, Minnesota Master Naturalist citizen-scientist and creator of the project, has managed it since its inception in 2007. As a former novice herself, she created the website she wished she had when she was starting out identifying Minnesota plants. A self-employed small business web programmer by profession, she has 10 years of experience managing limited-budget projects for clients. P. Dziuk, field coordinator and lead photographer, has degrees in both Biology and Horticulture and over 18 years experience with the Minnesota Department of Agriculture as state program and field coordinator for gypsy moth, invasive species and other programs, and working with large program budgets. The bulk of the project work is done by these two individuals, with subordinate work done by a select group of volunteers who have the necessary skills to contribute to the project.

Volunteer contributors to the project include: A. Cholewa (Bell Museum Herbarium) consultant on plant IDs, Minnesota Rovers Outdoors Club, C. Hoffman (USDA/NRCS conservationist) with fern and fern allies, and The Biota of North America Program (BONAP) for national species distribution range maps. We work closely with the Bell Museum Herbarium, whose records provide crucial location data in planning field visits. MWI submits voucher specimens of new county records, contributing nearly 150 specimens in the past 4 years. Our photos have been requested by and issued to dozens of agencies and organizations involved in invasive species outreach and native species promotion, including a recent publication by Pottsdam University on invasive species in Switzerland (Invasive Pflanzen der Schweiz) where more than a dozen species native to Minnesota have become introduced invasive plants.

B. Timeline Requirements

Activity 1 is a seasonal activity, taking place during the growing season from April through October each year. Activity 2 is a year-round activity that is supplied with the output of Activity 1, and the majority of Activity 2 takes place from October through April.

C. Long-Term Strategy and Future Funding Needs

This proposal builds on a well-established and much used botanical resource, at least doubling the number of species currently profiled. Minnesota Wildflowers Information is committed to providing this free, quality botanical reference to the general public in perpetuity, but without additional funding only 100 species are added per year. We are applying to other potential funders, including the Laura Jane Musser Foundation, for short-term funding. Donations from the general public are sufficient to pay for general operating expenses.

2014 Detailed Project Budget

Project Title: *Expand the Minnesota Wildflowers Online Botanical Reference*

IV. TOTAL ENRTF REQUEST BUDGET 3 years

BUDGET ITEM	AMOUNT
Personnel: 1.3 FTE Field Surveyor / Botanist / Web Publisher (80% salary / 20% benefits) (36 months employment) (2 people)	\$ 192,300
Equipment/Tools/Supplies: Camera.	\$ 1,000
Equipment/Tools/Supplies: Handheld GPS.	\$ 400
Travel: Field visits: 45,000 miles (15,000 annually x \$0.565 x 3 years)	\$ 25,000
Travel: Field visits: 50 overnight stays annually x 3 years (\$25/night)	\$ 3,750
Additional Budget Items:	NA
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 222,450

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period: Laura Jane Musser Fund	\$ 15,000	Pending
Other State \$ Being Applied to Project During Project Period:	NA	
In-kind Services During Project Period: Volunteer collaborators: C. Hoffmann (field surveys, species write-ups, photos, 3 years x 300 hrs annually x \$22/hr standard volunteer rate per Independent Sector), Minnesota Rovers (field surveys, photos, 3 years x 100 hrs annually x \$22/hr), Biota of North America Program (use of national distribution maps, value \$5000)	\$ 31,400	Secured
Funding History: Public donations, annual receipts prior to project period	\$ 3,000	

Expand the Minnesota Wildflowers Online Botanical Reference



user finds an unknown plant in their woods, garden, or restoration area, comes to Minnesota Wildflowers web site and searches for a match

Plant description

Flower description

Flower color: any

Flower shape: any

Cluster shape: any

Leaf description

Leaf attachment: any

Leaf type: any

Characteristics: any

Location

General habitat: any

MN County*: any

(may choose multiples)

Aitkin

Anoka

Becker

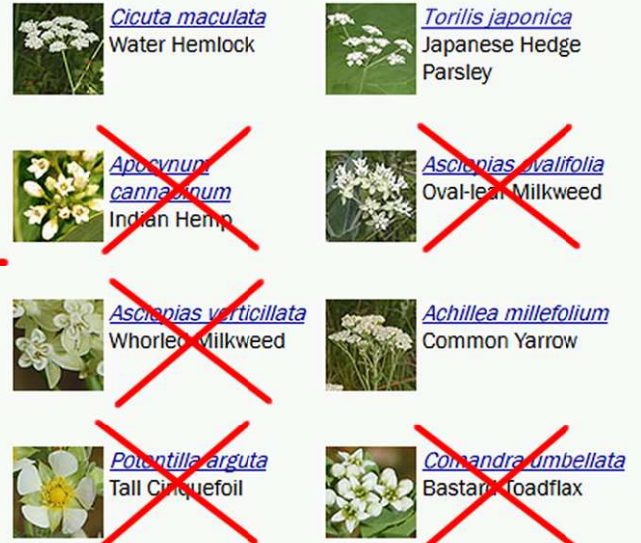
* Note: some counties are underreported so a sp. recorded there.

Miscellaneous

Search Results

Criteria: flower attributes=white,5-petals,flat; habitat=woods/thicket blooms=July; county=Ramsey;

Number of results: 8



eliminates obvious non-matches from search results and finds their plant in the short list, matching on leaf images

Torilis japonica (Japanese Hedge Parsley)

Pick an image for a larger view. Most image enlargements are 50-100KB, though some may be larger. See the [glossary](#) for icon descriptions.

Detailed Information

Flower: Flowers are in flat clusters (umbels) 1½ to 2 inches across, in groups (umbellets) of about 10 to 20 flowers each. Clusters are at the top of the plant and at the end of stems that arise opposite the leaves. Individual flowers are white, about 1/8 inch across with 5 notched petals of unequal size, a creamy white center and 5 white to pink stamens. The flowers on the outer edge of an umbellet open first; the unopened flowers may have a pinkish tinge.

At the base of an umbel are 2 or more very narrow bracts that may be slightly spreading. Up to 8 bracts are at the base of each umbellet, though they are very small and hard to see.

Leaves and stem: Leaves are compound in groups of 3 to 5, up to 5 inches long, 4 inches wide, alternately attached with a small sheath where the leaf stem joins the main stem. In the lower part of the plant, leaflets are feathery and fern-like. Leaves near the flowers at the top of the plant are smaller and less deeply divided. The main stem is covered in stiff hairs that are pressed close to the stem, giving it a rough, almost bumpy, texture.

Plant Info

Also known as: Erect Hedge Parsley

Genus: *Torilis*

Family: *Apiaceae* (Carrot)

Life cycle: annual

Origin: Asia

Status: **Invasive - ERADICATE!**

Habitat: part shade, sun; disturbed soil, edges of woods, thickets, along roads

Bloom season: June - August

Plant height: 2 to 6 feet

MN county distribution (click map to enlarge):

National distribution (click map to enlarge):

learns it is invasive

takes appropriate action



citizen scientist wanting to know how to tell Oriental bittersweet from American bittersweet

Wildflower List

If you are looking for something specific, use the search browser (usually CTRL+F) or the [advanced plant search](#)

Plant name: Search

or try: [advanced plant search](#)

Number of results: 684

A B C D E F G H I J K L M N O P Q R S

T U V W X Y Z

Scientific Name	Common Name
Abutilon theophrasti	Velvet Leaf, Indian Mallow, P
Acalypha rhomboides	Three-seeded Mercury, Rhombic Cop
Achillea millefolium	
Actaea pachyphloea	
Actaea rubra	
Adoxa moschatellina	
Agalinis purpurea	
Agalinis tenuifolia	

go directly to species page for info & images

Celastrus scandens

Celastrus orbiculatus

curling edge

not curling edge

BACKGROUND

Served as Project Manager on numerous projects, including acquisitions, mergers and new system implementations, while employed at various banks in Florida and Minnesota, specializing in check processing, accounting, and reconciliation applications. Held a short-term supervisory position overseeing eight employees.

A computer programmer by trade since 1980 and a web programmer for over 10 years, my interest in plants developed in 2006 when a spot of color caught my eye while walking in a local park. Disappointed and frustrated with the lack of quality identification resources for the novice, I developed an online field guide to fill that void, launched in 2007 with a mere 15 species and now profiles over 700 species. The interest turned into a passion as I grew aware of the prevalence of non-native plants in our natural areas and the destruction caused by invasive species. Through the work on this project and the Minnesota Master Naturalist program, I have connected with many people working to save our native habitats, and learned just how important native species are to our future. An important lesson learned: If people can't identify the plants they see, they can't do something positive to protect them.

ACADEMIC BACKGROUND

- Miami-Dade Community College, Miami, Florida, A.A. Business Data Processing, 1982
- Relevant coursework: Computer programming, systems analysis and design

RELEVANT WORK EXPERIENCES

C-net.us, New Brighton, MN, Owner, 2002-present

- Website design and programming for small businesses and non-profit organizations
- Specialized in working with organizations with tight budgets

Independent Contractor, 1995-2002

- Project Management and contract programming for financial institutions across the country

Banking Industry, 1978-1995

- First Bank (now US Bank), St. Paul, MN, 1993-1995: Systems Analyst and Programmer
- Florida Banks (all since acquired by other institutions), Jacksonville and Miami, FL, 1978-1993: Began as an entry level computer operator and advanced to programmer, programmer/analyst, systems analyst, project manager, with an 18-month supervisory position overseeing eight programmers.

RELEVANT VOLUNTEER EXPERIENCES

Minnesota Wildflowers Information, New Brighton, MN, Creator/President, 2007-present

- Create a web-based field guide of Minnesota vascular plants that even a novice can use
- Digital photography of Minnesota plants for high-quality images needed for identification
- Write accurate non-technical species accounts for Minnesota plants using credible botanical sources
- Create maps based on Bell Museum Herbarium records and personal GPS records
- Manage our busy Facebook page, where we encourage outdoor exploration, gardening with natives, and help people identify plants
- Manage project funds

Minnesota Master Naturalist Volunteer

- Big Woods Big Rivers course completed November, 2007
- Wild River State Park, Prairie Care program: species monitoring and seed collection, 2007-2010
- Ramsey County Parks: lead for county park plant surveys and voucher specimen collections, 2008-2012
- Ramsey County Cooperative Weed Management Area: weed surveys, monitoring, removal, 2009-present

AFFILIATIONS/MEMBERSHIPS

- Minnesota Master Naturalist
- Minnesota Native Plant Society