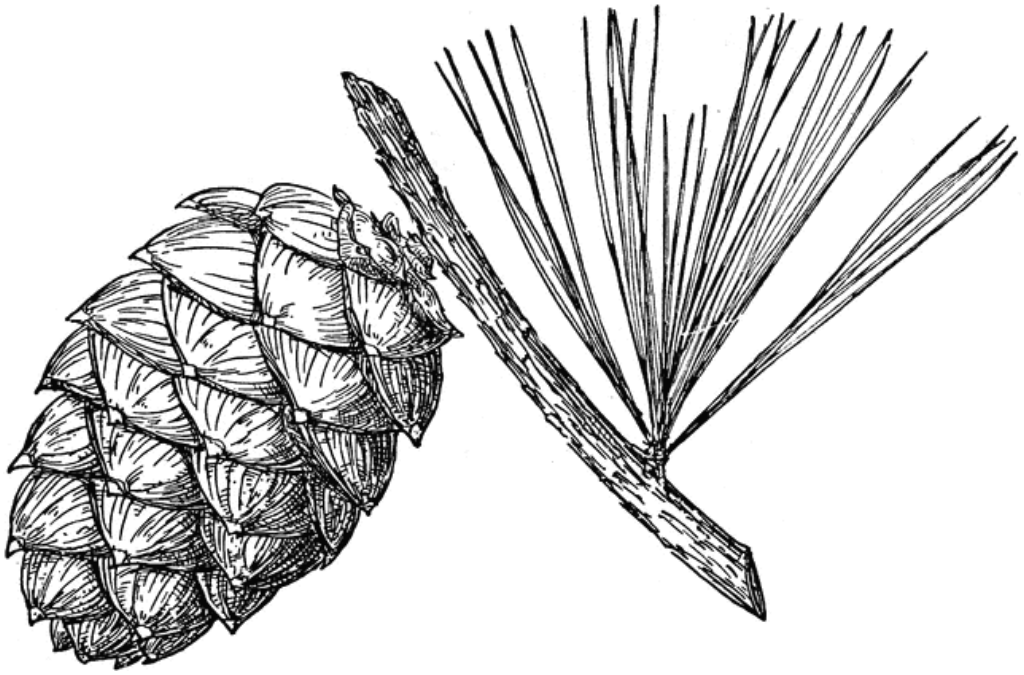
Proceedings

Tenth Montana Plant Conservation Conference

February 21-22, 2018

Montana Fish, Wildlife & Parks Montana Wild Center, Helena



MNPS

Montana Natural Heritage Program

USDA

Montana Fish, Wildlife & Parks

Proceedings
Tenth Montana Plant Conservation Conference

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Join us at the Montana Department of Fish, Wildlife & Parks' Montana Wild center in Helena for the tenth Montana Plant Conservation Conference. The first day of the conference is devoted to providing information on many of Montana's threatened and endangered plants. The morning will be a symposium on whether whitebark pine should be listed under the Federal Endangered Species Act (ESA). Presentations will be followed by a discussion and question period when members of the audience will be able to engage presenters. The status of Montana's three ESA-listed plant species, water howellia, Spalding's catchfly and Ute ladies'-tresses, will be discussed in the afternoon. The nomination of Lost Trail National Wildlife Refuge as an Important Plant Area will be presented and discussed at the end of the day. The second day will begin with a discussion on the possibility for a Montana plant conservation strategy. This will be followed by a workshop for botanists and resource managers to help update the threats information for the Montana Natural Heritage Program's Species of Concern (SOC) list. Amateur and professional botanists alike can contribute to both workshops and help protect our state's natural heritage.

Montana Native Plant Society
The mission of the Montana Native Plant Society is to preserve, conserve, and study the native plants and plant communities of Montana, and to educate the public about the value of our native flora.

U.S. Forest Service
The mission of the U.S. Forest Service is to sustain the health, diversity, and productivity of the Nation's forest and grasslands to meet the needs of present and future generations.

Montana Natural Heritage Program
The mission of the Montana Natural Heritage Program is to be Montana's source for reliable, objective information and expertise to support stewardship of our native species and habitats, emphasizing those of conservation concern.

Natural Resources Conservation Service
The United States Department of Agriculture, Natural Resources Conservation Service improves the health of our Nation's natural resources while sustaining and enhancing the productivity of American agriculture. We achieve this by providing voluntary assistance through strong partnerships with private landowners, managers, and communities to conserve, protect, restore, and enhance the lands and waters upon which people and the environment depend.

Montana Fish, Wildlife & Parks
Montana Fish, Wildlife & Parks, through its employees and citizen commission and board, provides for the stewardship of the fish, wildlife, parks, and recreational resources of Montana, while contributing to the quality of life for present and future generations.

Cover illustration of whitebark pine taken from: Sargent, C. S. 1905. *Manual of the Trees of North America*. Houghton Mifflin, Boston, MA.

Schedule

Wednesday, February 21

9:30 Welcome. Gretchen Rupp**,** *MNPS president*

Montana's Threatened Plants. Moderator: Chantelle Delay, *Flathead National Forest*

9:40- 10:05 A Primer on the Federal Endangered Species Act, What's Different with Plants? Jodi Bush, *U.S. Fish & Wildlife Service, Helena*

10:00-10:40 Why Whitebark Pine Might be Listed Under the ESA. Diana F. Tomback, *University of Colorado, Denver*

10:40-10:55 Break

10:55-11:15 Reasons to Refrain from Listing Whitebark Pine under the ESA. Ed Monnig, *retired U.S. Forest Service Supervisor*

11:15-12:00 Panel Discussion and Audience Questions

12:00-1:15 Lunch

1:15-1:45 Conservation Status of *Howellia aquatilis* in Montana. Steve Shelly, U*.S. Forest Service, Region 1* with Maria Mantas, Andrea Pipp, and Jamul Hahn

1:45-2:05 Rangewide Status of Water Howellia. James Boyd, *U.S. Fish & Wildlife Service, Helena*

2:05-2:25 A Snapshot View of Ute ladies'-tresses Across It's Range and In Montana. Andrea Pipp, *Montana Natural Heritage Program*

2:45-3:00 Break

3:00-3:20 Close Encounters with Threatened Plants, Montana Case Studies. Peter Lesica, *Conservation Biology Research*

3:20-3:45 Plant Information Resources at the Montana Natural Heritage Program. Bryce Maxell and Andrea Pipp, *Montana Natural Heritage Program*

3:45-4:00 Lost Trail National Wildlife Refuge IPA Nomination. Beverly Skinner, *U.S. Fish & Wildlife Service, Kalispell*

Thursday, February 22

8:30-8:50 Does Montana Need a Rare Plant Conservation Strategy? Andrea Pipp, *Montana Natural Heritage Program*

8:50-9:10 Discussion

9:10-9:30 A Review of the Montana Threat Rank System for Plant Species of Concern. Scott Mincemoyer, *Montana Natural Heritage Program (retired)*

9:30-12:00 Threats workshop with all present

12:00-1:00 Lunch

1:00-3:30 Threats workshop with all present

Abstracts

A Primer on the Federal Endangered Species Act and What's Different with Plants?

Jodi Bush, *U.S. Fish and Wildlife Service, Montana State Ecological Services*

Plant species are protected differently than animal species under the Endangered Species Act. The presentation is intended to be a general overview of the Endangered Species Act including its purpose, requirements for listing and how the regulation differs for plants compared to animals. The presentation will cover prohibitions and restrictions on possession, the Section 7 consultation process for federal agencies, conservation management, what scientific permits are and if you need them for plants and what the process is for achieving listed plant recovery.

Why Whitebark Pine Might be Listed under the ESA

Diana F. Tomback, *Department of Integrative Biology, University of Colorado Denver*

Whitebark pine (*Pinus albicaulis* Engelm.) occurs throughout most of the higher mountains of the western U.S. and Canada, ranging as far south as the southern Sierra Nevada to about 55° lat. N in British Columbia and Alberta, Canada. It occupies only in the upper subalpine and treeline forest zones. About 38% of its U.S. distribution occurs in multi-agency wilderness areas. Despite its narrow elevation range, whitebark pine is ecologically important to high mountain forests, tolerating cold, dry sites and poor soils. It functions as a foundation and keystone species, shaping community structure and enhancing biodiversity, as well as providing important ecosystem services including watershed protection and tree island formation. Because whitebark pine populations are declining throughout the majority of its range, the species is listed as Endangered in Canada under the Species at Risk Act and undergoing evaluation for listing under the Endangered Species Act (ESA). These declines result from four major threats: infection by the introduced pathogen *Cronartium ribicola,* which causes white pine blister rust; sustained outbreaks by the native mountain pine beetle (Dendroctonus ponderosae); altered fire regimes; and, both indirect and direct impacts of climate change. Whereas white pine blister rust damages the canopy and reduces cone production and photosynthetic biomass, stem cankers kill trees more rapidly; some forests have nearly 100% infection. The current mountain pine beetle outbreak has now killed cone-producing trees across 25% of whitebark pine's range, and the outbreak continues to be active in California, Oregon, and Nevada. Fire exclusion practices have resulted in declining basal area of whitebark pine in seral communities in the Rocky Mountains and other regions. Climate warming has been associated with drought stress and old growth mortality, the scale of the mountain pine beetle outbreak, the potential spread of Cronartium ribicola, west-wide changes in fire regimes towards more frequent, larger, and more severe; and, likely distributional shifts over the next century. Four geographic case histories illustrate why these combined threats represent an existential challenge to whitebark pine populations and may warrant whitebark pine's listing under the ESA: the northern U.S. Rocky Mountains, the Greater Yellowstone Area, treeline communities and the northernmost range limits, and the Sierra Nevada Range, CA.

Reflections on Managing Species under the ESA: Implications for Listing of Whitebark Pine as a T&E species

Edward Monnig, *U.S. Forest Service (retired)*

Since the passage of the Endangered Species act in 1966 approximately 2280 species have been listed for protection and recovery under the act. Species listed range from extremely localized endemics such as the Yreka phlox found only Siskiyou County, California to wide-ranging species such as sage grouse found in many locations in the intermountain west. Critics charge that species management under the act has become extremely cumbersome and may in part account for the fact that only 1 percent of the species listed under ESA have been deemed recovered.

The criteria for listing a species under ESA have also been criticized. The decision to list wide ranging species that still exist in fairly large numbers but with declining localized populations can be controversial especially if listing can affect other land uses. Such appears to be the case with trends in whitebark pine populations.

This talk will discuss the challenges of managing listed species under ESA protocols and the implications for management of whitebark pine, if listed. Challenges include: conducting recovery actions designed to benefit the long-term viability of a species but with short-term and isolated impacts to individual species members (taking); managing for listed species on the edges of their ranges, and the

possible ecosystem effects of managing a listed species on other species in an ecosystem.

Conservation Status of *Howellia aquatilis* in Montana

Steve Shelly, *U.S. Forest Service, Region One* with Maria Mantas, Andrea Pipp, and Jamul Hahn

Howellia aquatilis (Campanulaceae) is a federally threatened aquatic plant species that occurs in 220 vernal wetlands in the Swan Valley of northwestern Montana. Of these occupied wetlands, 194 (88%) occur wholly or partially on lands managed by the Flathead National Forest and the U.S. Fish and Wildlife Service, and the remainder occur on state and private lands. To assess trends in this metapopulation, we monitored 62 to 68 populations over a ten-year period from 1998 to 2007, and 55 populations from 2010 to 2012, with presence/absence and abundance recorded annually for each population. Annual weather patterns, especially precipitation and temperature, directly affect population levels of *H. aquatilis* from year to year. In addition, the forested habitats within a 300-foot minimum management buffer around 76.4% of the 220 populations in Montana have experienced various land management activities and disturbances, including vegetation treatments, road construction, grazing, and fire since 1984. The monitoring results indicated a stable trend over the two monitoring periods in both disturbed and undisturbed sites, with short-term weather patterns having a dominant effect on population levels. Given the influence that annual weather conditions have on populations of this aquatic winter annual, the potential effects of climate change may vary depending on future trends in temperature and precipitation. Considering the uncertainty surrounding future trends, especially for precipitation, continued implementation of the minimum management buffer surrounding occupied and suitable unoccupied wetlands may be an appropriate adaptation strategy for maintaining suitable habitat conditions, and to allow for recovery of mid- to late-seral vegetation where it is currently absent. In addition, restoration treatments in surrounding forest stands may be appropriate for some populations.

Rangewide Status of Water Howellia

James Boyd, *U.S. Fish and Wildlife Service, Montana State Ecological Services*

Water howellia was recommended for delisting under the Endangered Species Act by the USFWS in 2013. As part of the delisting effort, a current rangewide status review was conducted to identify the presence and magnitude of stressors acting on howellia across its range. Here, I present the results of the status review, with a focus on how historical and current stressors have been eliminated or minimized, and conclude with a proposed path forward toward delisting water howellia.

A Snapshot View of Ute ladies'-tresses Across It's Range and In Montana

Andrea Pipp, *Montana Natural Heritage Program*

In 1992 Ute ladies'-tresses was listed as Threatened under the U.S. Endangered Species Act. At this time fewer than 6,000 plants growing in 10 extant and 7 historical populations in Nevada, Colorado, and Utah were known to occur. Habitat loss, small population sizes, and a low reproductive rate were the threats that were thought to make this plant vulnerable to extinction. By 2017 the known range of Ute ladies'-tresses has expanded to include Wyoming, Idaho, Montana, Washington, and has crept over the borders into Nebraska and British Columbia. Approximately 100 extant and 7 extinct populations are now known. This talk will show the current range-wide distribution, range-wide survey efforts to document presence and absence, and provide an update on projects and threats. The current Montana distribution, Predicted Suitable Habitat Model, and a summary of past studies will be discussed.

Spalding's catchfly (*Silene spaldingii*): How Recovery Planning and Conservation Partnerships are Guiding Recovery of this Threatened Plant Species

Karen Colson, *U.S. Fish and Wildlife Service, Idaho Fish and Wildlife Office*

Species conservation and recovery is the ultimate goal of the U.S. Fish and Wildlife Services' Ecological Services Program. To accomplish this, the Service works closely with a variety of partners to develop recovery plans for threatened and endangered species. Strong partnerships are critical to the implementation and success of these recovery plans. This presentation will provide an overview of the recovery goals and criteria for the threatened plant species Spalding's catchfly, give an update on its current status, and highlight specific examples of collaborative conservation successes for this species.

Close Encounters with Threatened Plants, Montana Case Studies

Peter Lesica, *Conservation Biology Research*

Rare species are of conservation concern, but those that are threatened or endangered are in the top tier, so it is important to be able to recognize potential threats. I will present examples of rare plant populations that are threatened or have been damaged by human activity. Threats include development, recreation, herbicide and climate change. Several example are wetland plants. I hope that these examples will broaden our understanding of what can constitute a threat and help managers and biologists assign threat rankings during the workshop being held the second day of the conference.

Lost Trail National Wildlife Refuge IPA Nomination

Beverly Skinner, *U.S. Fish & Wildlife Service, Kalispell*

Historically, Palouse prairie grasslands and savannahs stretched across the intermountain western landscapes. These rich, deep soil grasslands are now mostly gone. Over 1000 acres of this bunchgrass prairie ecosystem can be found on LTNWR which protects habitat for four Montana plant species of concern including the federally-listed Spalding's catchfly (*Silene spaldingii*) as well as hutchinsia (*Hornungia procumbens*), scalepod (*Idahoa scapigera*) and Geyer's onion (*Allium geyeri* var. *geyeri).* The refuge encompasses wetlands (permanent, semi-permanent, seasonal and moist saline), riparian corridors, uplands dominated by Palouse Prairie and ponderosa pine and larch savannah and temperate forests dominated by lodgepole pine and Douglas-fir. The refuge staff is now in the process of reviewing and updating the management plan which will include the new information available on plant species of concern as well as newly designed plans for the monitoring, protection and habitat enhancement of these plant species.

Plant information resources at the Montana Natural Heritage Program

Bryce Maxell, *Montana Natural Heritage Program* and Andrea Pipp

The Montana Natural Heritage Program (MTNHP) houses Montana's central databases on plants, animals, and habitats and is a key source of information used in environmental reviews and permitting. We will provide an overview of MTNHP websites, including the Montana Field Guide http://fieldguide.mt.gov which has over 3,800 plant species accounts, Species Snapshot http://mtnhp.org/SpeciesSnapshot/ which allows users to download custom field guides for species documented in an area, and Map Viewer http://mtnhp.org/mapviewer which provides access to observations, predicted habitat suitability models, and a new environmental summary report that botanists and resource managers can use in their research, environmental reviews, and project planning efforts. MTNHP has recently developed range polygons and predicted habitat suitability models for a number of Montana Species of Concern and BLM and USFS Sensitive plant species. The development and suggested uses of these models will also be discussed. Finally, the MTNHP has recently developed a Survey123 smart phone application that can be used to submit plant and animal data and data submission via this application will be reviewed.

Does Montana Need A Rare Plant Conservation Strategy

Andrea Pipp, *Montana Natural Heritage Program*

A few states, such as Colorado and New Mexico, have developed Rare Plant Conservation Strategies. These state strategies look beyond internal land ownership boundaries to develop a coordinated effort to preserve and protect rare plants. In 2014, the Montana Natural Heritage Program wrote a draft *Montana Plant Conservation Strategy: Plants of Special Significance and Greatest Conservation Concern*. The purpose of the 2014 draft strategy was to raise awareness of Montana's globally rare plants. The draft strategy identified 91 Plants of Special Significance and Greatest Conservation Concern (PGCC) and analyzed the watersheds, counties, and habitats where found, the threats they face, and their vulnerability to expected changes in climate using NatureServe's Climate Change Vulnerability Index. Participants are asked to read the Colorado (http://www.cnhp.colostate.edu/download/documents/2009/CO_Plant_Conservation_Strategy_Report-links.pdf) and New Mexico (http://www.emnrd.state.nm.us/SFD/documents/NMRarePlantConsStrategy_Final_reduced.pdf) strategies and come prepared for an open dialogue. An overview will be provided on Colorado's and New Mexico's purpose and need for developing a strategy, process used, participants involved, and the objectives and actions to implement their strategies. A summary of Montana's draft strategy will be provided. This will be a time to ask questions, provide input, and discuss with the group about how Montana can best preserve, protect, and/or enhance native plants, particularly rare species. Does Montana need a rare plant conservation strategy?

A Review of the Montana Threat Rank System for Plant Species of Concern

Scott Mincemoyer, *Montana Natural Heritage Program (retired)*

The Montana Interagency Plant Threats Assessment Steering Committee was formed in 2006 at the Montana Plant Conference in Helena to assess threats and assign threat rankings to Montana Plant Species of Concern. Prior to and following this meeting, information on threats to individual species was collected from botanists, ecologists and natural resource professionals from around the state. Information gathered for each species included the severity, scope and immediacy of each listed threat. These data were summarized and analyzed by the Committee in several meetings in 2006 and 2007 and a proposed threat ranking system comprised of three classes was developed. Over ten years later, we will review the system adopted by the Threats Committee, how that information has been incorporated into Montana Natural Heritage Program ranking for Species of Concern and needs moving forward.

Abbreviated Important Plant Area Nomination

(page 1)

Nominated Site Name: Lost Trail National Wildlife Refuge (LTNWR)

General Location: The Refuge is located in the Salish Mountains of Northwest Montana within Pleasant Valley approximately 20 miles west of Marion.

County: Flathead County

Elevation: Ranges from 3,488 to 4,600 feet

Size of Area: The Congressionally designated refuge boundary is 9,225 acres. LTNWR is currently 7,965 acres in size which does not include 1,440 acres of State land leases currently managed by the Refuge. Total acres currently managed – 9,405 acres

Property Ownership: U.S. Fish and Wildlife Service and State of Montana DNRC

Plant Species of Concern (SOC) Information:

Table 1. Vascular plant species of concern at Lost Trail NWR (LTNWR)

Species	MNHP rank	Population size	Trend	Source
Silene spaldingii	G2/S2 ESA-threatened	500+	Stable or declining	Lesica 2014a
Hornungia procumbens	G5/S2	Uncommon 1 location	Unknown	Lesica 2014b
Idahoa scapigera	G5/S1S2	Unknown 2 separate locations	Unknown	Lesica 2014b
Allium geyeri var geyeri	G4G5T4/S3	Abundant on Refuge grasslands	Unknown	Lesica 2014b

What Qualifies this Site as an IPA?

Palouse Prairie habitat

Silene spaldingii populations – 500+ plants

Allium geyeri var geyeri – abundant in grasslands

Currently designated as a Key Conservation Area for *Silene spaldingii*

Wetland and vernally moist wetland areas with Montana Species of Concern plant species *Hornungia procumbens, Allium geyeri* var. *geyeri* and *Idahoa scapigera*

Historically, Palouse prairie grasslands and savannahs stretched across the intermountain western landscapes. These rich, deep soil grasslands are now mostly gone. Over 1000 acres of this bunchgrass prairie ecosystem can be found on LTNWR which protects habitat for four Montana plant species of concern including the Federally Threatened Spalding's Catchfly (*Silene spaldingii*). LTNWR was purchased due to mitigation for habitat losses associated with Flathead Waterfowl Production Area on the northshore of Flathead Lake. The refuge can be described as a long valley crossed by Pleasant Valley Creek which also includes the approximately 1500+ acre glacial Dahl Lake. The refuge encompasses wetlands (permanent, semi-permanent, seasonal and moist saline), riparian corridors, uplands dominated by Palouse Prairie and ponderosa pine and larch savannah and temperate forests dominated by lodgepole pine and Douglas-fir. Pre-European fire frequency within what is now LTNWR (Frost 2016) shows a historic 1 – 6 year fire frequency within this Palouse Prairie valley. The valley was settled by Euro-American ranchers in the late 1800's, which brought an end to the natural, frequent fires due to heavy use of the native habitat by domestic cattle and human led protection of new home sites. During this same settlement time, most of the wet meadows were ditched, plowed and replanted to non-native hay grasses. Upland Palouse Prairie lands were heavily over-utilized by domestic cattle compounded by large resident deer and elk populations.

Abbreviated Important Plant Area Nomination

(page 2)

Threats:

Species	Threats	Level	Comments
Silene spaldingii	Lack of fire on the landscape to maintain Palouse Prairie ecosystem. Trespass cattle and native grazers; e.g., herbivory by deer, elk and small mammals (Skinner 2017, Cullen et al. 2011) Weeds Dependence on pollinators Genetically isolated population – inbreeding (Lesica et al. 2016	Moderate	First observed on LTNWR in 2002. LTNWR has been designated as a Key Conservation Area for this federally threatened plant. A refuge wide survey was completed between 2013 and 1016 and over 500 plants were located and mapped during this time. Refuge staff is currently monitoring this plant species. Twelve permanent plots were established in 2016. The second year of a three year trend study was completed in 2017 Population and Genetic enhancement is ongoing (Lesica 2017) in order to reduce the adverse effects of inbreeding depression. LTNWR staff is currently working on the refuge 15 year Comprehensive Conservation Plan (CCP) which will address threats to all documented plant species of concern. Management strategies for Silene spaldingii will include: prescribed burns in Palouse prairie uplands, continued plant genetic enhancement, weed management, and fencing issues to reduce trespass cattle.
Hornungia procumbens	Trespass cattle and native grazers. MNPS Threat Rank 3 (insignificant or Viability not threatened)	Low	Spring wet meadow flower dependent on calcareous or saline moist soil. LTNWR staff is currently working on the refuge 15-year Comprehensive Conservation Plan.
Idahoa scapigera	Trespass cattle and native grazers. MNPS Threat Rank 1 (Highly Threatened)	Low	Spring grassland flower dependent on shallow, moist soil. LTNWR staff is currently working on the refuge 15-year Comprehensive Conservation Plan.
Allium geyeri var *geyeri*	Unknown	Low	This plant was just recently designated as a Species of Concern by the MNHP. Found in moist grasslands and meadows. LTNWR staff is currently working on the refuge 15-year Comprehensive Conservation Plan.

References:

Cullen, Stephanie, Robert V Taylor and Heidi Schmalz 2011. Do Cattle Eat Spalding's Catchfly? An Examination of Browse Rates in Grazed and Un-grazed Areas of the Zumwalt Prairie Preserve. The Nature Conservancy of Montana

Frost, Cecil 2016. Elk, Quaking Aspen and Fire in the Lost Trail National Wildlife Refuge Region, Northwest Montana. A portion of the report to the Rocky Mountain Elk Foundation RMEF Grant #MT150076 - Lost Trail NWR Habitat Improvement

Lesica, P. 2014a. Low recruitment not mortality limits growth of peripheral populations of Silene spaldingii. Botany 92: 340–347.

Lesica, Peter 2014b. The Flora of Lost Trail National Wildlife Refuge 2014 Final Report

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Lesica, P., B. Adams and C. T. Smith. 2016. Can physiographic regions substitute for genetically-determined conservation units? A case study with the threatened plant, *Silene spaldingii*. Conservation Genetics 17:1041–1054.

Skinner, Beverly 2017. 2016 and 2017 Spalding's Catchfly field data. Lost Trail NWR internal files

Form Submittal:

Beverly Skinner (beverly_skinner@fws.gov)
US Fish and Wildlife Service – Lost Trail National Wildlife Refuge
Lost Trail NWR 6295 Pleasant Valley Rd, Marion, MT 59925
406-858-2286
Submitted December 1, 2017

Threatened Plants Workshop

At the 2006 plant conservation conference, a process was initiated to assess threats and assign threat ranks to Plant Species of Concern (SOC) with a goal of highlighting those plant species that are most at risk in the state. A threat classification and methodology were developed and data and input gathered from biologists, which resulted in the assignment of initial threat ranks for 70% of the plant SOC in the state. Minor updates have occurred to the list since the initial assignments. Methodology, initial threat ranks and associated data may be found on the MNPS website (http://www.mtnativeplants.org/Montana_Species_of_Concern_Threat_Assignment)

These have been incorporated into the Montana Natural Heritage Program's Plant Species of Concern Report (http://mtnhp.org/SpeciesOfConcern/?AorP=p). During the workshop, we will: 1) review methodology and criteria, 2) attempt to assign threat ranks to SOC species that are currently unranked, and 3) gather input and feedback and update threat rankings for species that were ranked previously.

Threat ranks

Category 1 (Highly Threatened) Associated threat(s) has caused or could cause a major reduction of the state population or habitat that will require 50 years or more for recovery, and 20% or more of the state population has been or will be affected, and the threat is likely to occur within 5 years or less.

Category 2 (Threatened) Associated threat(s) exist but are not as severe, wide-ranging or immediate as for Category 1.

Category 3 (Insignificant Threats or No Threats Known) Either, no known threats, or "Severity" or "Scope" is rated as insignificant.

Not Ranked was assigned to those species that have not yet been ranked due to lack of information or conflicting information.

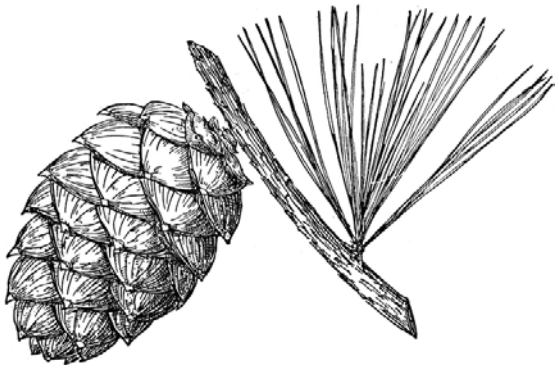
Threats

(1) Agricultural practices, (2) Domestic livestock foraging, (3) Domestic livestock trampling, (4) Facilities development, (5) Habitat conversion/loss/development, (6) Hydrologic alteration, (7) Hydrologic development, (8) Invasive species, (9) Fire suppression, (10) Lack of natural flooding, (11) Lack of soil disturbance, (12) ATV/ORV use, (13) Human trampling, (14) Motor boats, (15) Other motorized, (16) Ore mining, (17) Oil and gas, (18) Coal Bed Methane, (19) Timber management, (20) Rock quarry, (21) Peat mining, (22) Road construction and maintenance, (23) Ski area development, (24) Soil compaction, (25) Trail construction, (26) Biological weed treatment, (27) Herbicide application, (28) Other. Impacts or potential effects associated with global climate change or global warming were not considered in this assessment.

Montana plant species of concern (SOC) that have not previously been assigned a threat rank are listed below organized geographically. Please review your area of the state and come help assign ranks.

Northwest Montana

Asplenium trichomanes-ramosum
Botrychium lanceolatum
Botrychium simplex
Cryptogramma cascadensis
Equisetum pratense
Marsilea oligospora
Polystichum kruckebergii
Polystichum scopulinum
Ageratina occidentalis
Berberis nervosa
Castilleja kerryana
Delphinium burkei
Delphinium depauperatum
Delphinium glaucum
Douglasia conservatorum
Erigeron evermannii
Eriogonum crosbyae
Ipomopsis minutiflora
Kelloggia galioides
Lathyrus bijugatus
Ligusticum verticillatum
Lobelia kalmii
Mimulus ampliatus
Mimulus clivicola
Mimulus floribundus
Mimulus hymenophyllus
Physaria saximontana var. dentata
Ribes laxiflorum
Rubus arcticus
Satureja douglasii
Senecio elmeri
Senecio eremophilus
Viola selkirkii
Acorus americanus
Allium acuminatum
Allium columbianum
Allium geyeri var. geyeri
Amerorchis rotundifolia
Calamagrostis tweedyi
Carex glacialis
Carex stenoptila
Carex vaginata
Cyperus acuminatus
Dichanthelium oligosanthes var. scribnerianum
Juncus covillei
Lilaea scilloides
Lilium columbianum
Lilium philadelphicum
Najas guadalupensis
Scolochloa festucacea
Wolffia columbiana



Montana plant species of concern (SOC) that have not previously been assigned a threat rank are listed below organized geographically. Please review your area of the state and come help assign ranks.

Southwest Montana

Botrychium lanceolatum
Botrychium simplex
Cryptogramma cascadensis
Equisetum pratense
Polystichum kruckebergii
Adoxa moschatellina
Agastache cusickii
Antennaria densifolia
Aquilegia formosa
Castilleja gracillima
Castilleja nivea
Collomia debilis var. camporum
Cryptantha humilis
Delphinium burkei
Delphinium depauperatum
Descurainia torulosa
Draba globosa
Erigeron formosissimus
Ipomopsis minutiflora
Mentzelia stricta
Mimulus ampliatus
Mimulus floribundus
Mimulus hymenophyllus
Oenothera pallida ssp. pallida
Pedicularis contorta var. rubicunda
Pedicularis pulchella
Penstemon humilis
Penstemon whippleanus
Physaria saximontana var. dentata
Ribes triste
Rubus arcticus
Satureja douglasii
Senecio eremophilus
Senecio hydrophilus
Stellaria crassifolia
Thelypodium paniculatum
Trifolium cyathiferum
Trifolium microcephalum
Utricularia ochroleuca
Waldsteinia idahoensis
Allium acuminatum
Allium columbianum
Allium parvum
Allium simillimum
Calamagrostis tweedyi
Calochortus bruneaunis
Carex occidentalis
Carex scoparia
Carex stenoptila
Carex stevenii
Cyperus bipartitus
Juncus covillei
Najas guadalupensis
Sporobolus neglectus
Stipa lettermanii
Veratrum californicum
Wolffia columbiana

North-central Montana

Aquilegia brevistyla
Lobelia kalmii
Mimulus ringens
Phacelia thermalis
Rorippa calycina
Senecio eremophilus
Senecio integerrimus var. scribneri
Utricularia ochroleuca
Amerorchis rotundifolia
Cyperus acuminatus
Najas guadalupensis

Northeast Montana

Almutaster pauciflorus
Ammannia robusta
Asclepias ovalifolia
Dalea villosa
Lobelia kalmii
Lobelia spicata
Plagiobothrys leptocladus
Rorippa calycina
Solidago ptarmicoides
Bolboschoenus fluviatilis
Lilaea scilloides
Schoenoplectus heterochaetus

Southeast Montana

Ammannia robusta
Amorpha canescens
Asclepias incarnata
Asclepias ovalifolia
Asclepias stenophylla
Astragalus grayi
Cercocarpus montanus
Cirsium pulcherrimum
Dalea villosa
Ipomoea leptophylla
Penstemon grandiflorus
Physaria pachyphylla
Rorippa calycina
Solidago ptarmicoides
Symphyotrichum molle
Cyperus erythrorhizos
Dichanthelium oligosanthes var. scribnerianum
Lilium philadelphicum

REGISTRATION FORM

2018 Montana Plant Conservation Conference

MONTANA WILD, Fish, Wildlife & Parks, Helena

Return your registration form and check, or register on-line, by February 12, or register at the door.

Name(s):_____
Organization:_____
Address:_____
City, State, Zip:_____
Telephone:_____
E-mail:_____

Registration Fee:

$30 per person; $25 MNPS member; $5 student

____people @ above rates = $_____

Total Payment Enclosed $_____

On-line Registration

You may also register on-line by visiting the Montana Native Plant Society website at: **www.mtnativeplants.org**
You can use our secure PayPal feature to register and pay on-line. You can also download extra copies of the registration form for friends and colleagues that can be mailed to Marirose (address below) with a check.

Send completed form and check made out to Montana Native Plant Society to:

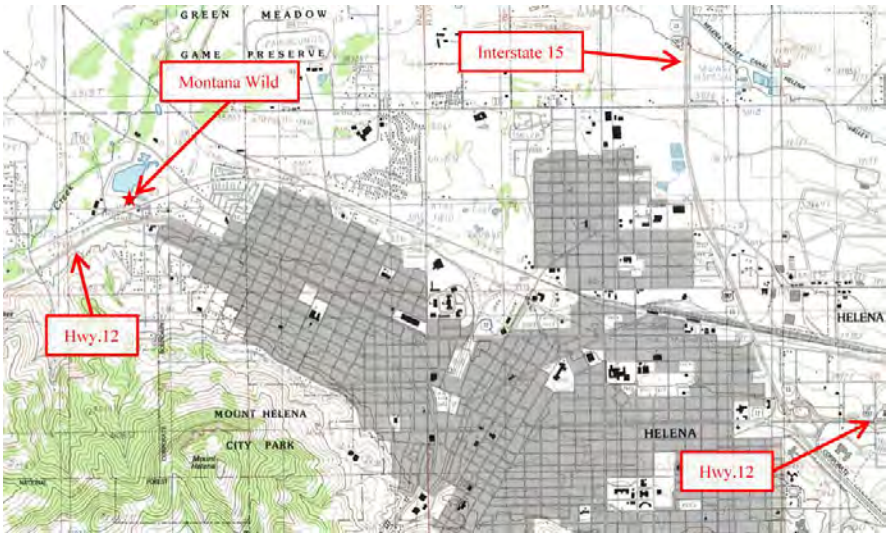
Marirose Kuhlman
MNPS Conference
P.O. Box 692
Florence, MT 59833

Accommodations

Days Inn	442-3280
Helena Hotel (formerly Holiday Inn; downtown)	443-2200
Radisson Colonial Hotel	443-2100
Holiday Inn Express & Suites	442-7500
Sanders Bed & Breakfast (central)	442-3309
La Quinta Inn & Suites	449-4000
Best Western Premier –Helena Great Northern	457-5500
Super 8 (east side)	443-2450

Parking

We encourage you to carpool to Helena. Parking is free at the Montana Wild center. Please thank Montana Fish, Wildlife & Parks for use of Montana Wild.



On-Your-Own Lunch Options

Bagel Company, 735 N. Last Chance Gulch, 449-6000

Turn left (east) onto Euclid Ave. (Highway 12). Travel 2.2 miles. Turn right onto North Last Chance Gulch. In 0.2 mile the Bagel Company is on the left. Serving up great bagels (of course), sandwiches, soups, and salads.

Brewhouse Pub & Grill, 939 Getchell, 457-9390

Turn left (east) onto Euclid Ave. (Highway 12). Travel 1.9 miles. Turn right onto Getchell. The Pub is on the corner. Selections include a wide array of appetizers, salads, wraps, soups, burgers, chicken, pizza, pasta, and of course, home-brewed beer!

Café Zydeco, 625 Euclid Avenue, 449-7032

Turn left (east) onto Euclid Ave. (Highway 12). Travel about 1.5 miles. Café is on your right, immediately after Garfield Street. The Café is on the corner. Cajun and Creole offerings, including jambalaya, gumbo, po boy sandwiches, specialty sandwiches, and salads.

Mediterranean Grill, 42 S Park Ave., 495-1212

Turn left (east) onto Euclid Ave. (Highway 12). Travel 1.7 miles and turn right onto Benton Ave. Continue straight as the road becomes Park Ave. The Grill is on the right. A wide array of Mediterranean food is featured. Salads, pizza, appetizers, pasta, chicken, lamb, seafood, and more.

Real Food Deli, 1096 Helena Ave., 443-5150

Turn left (east) onto Euclid Ave. (Highway 12). Travel 2.6 miles and turn right onto National. The Deli is on the right. An organic deli featuring a fresh salad bar, sandwiches, pizza, and a daily selection of hot entrees.

Staggering Ox, Lundy Shopping Center, 443-1729

Turn left (east) onto Euclid Ave. (Highway 12). Travel 1.7 miles. Make a U-turn and head back west on Euclid. The Staggering Ox will then be on the right in the Lundy Shopping Center. Featuring hot and cold sandwiches, salads, quesadillas, hot dishes, and a wide selection of vegetarian options.

Montana Wild

Montana Wild, operated by Montana Fish, Wildlife & Parks, is located on the west side of Helena, just off Highway 12, near Spring Meadow Lake. Coming from the west, turn left onto Broadwater Ave., then take the first right. Coming from the east, turn right onto Broadwater Ave., then take the first right.