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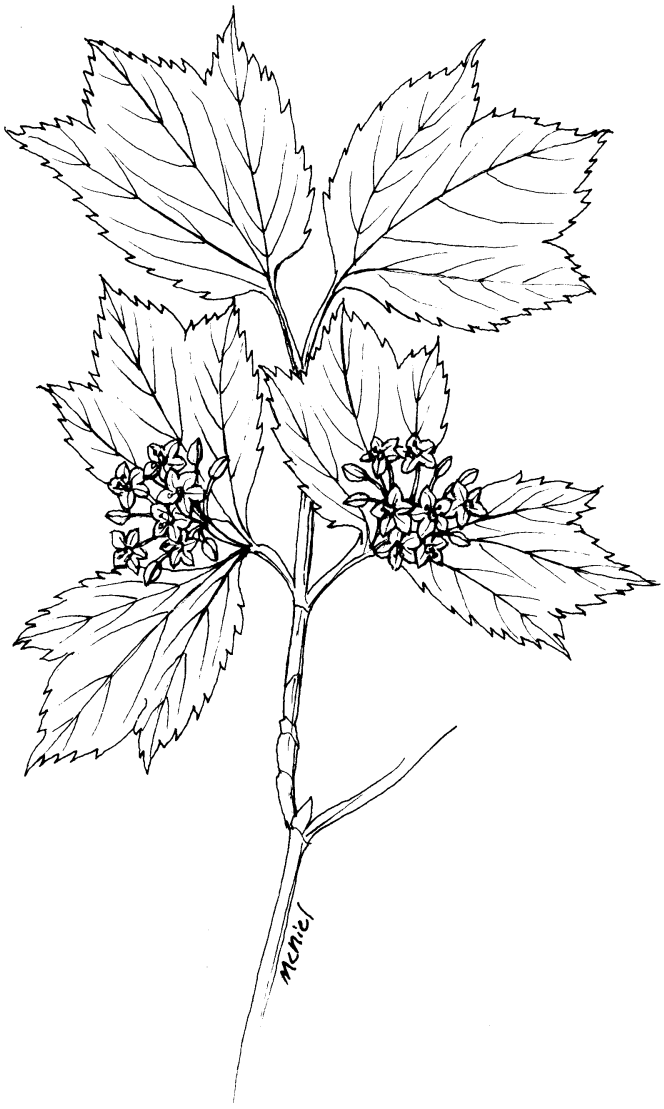
Proceedings

Seventh Montana Plant Conservation Conference

February 15 and 16, 2012

Montana Fish, Wildlife & Parks Montana Wild Center, Helena



MNPS

Montana Natural Heritage Program

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Forest Service US Department of Agriculture

Proceedings
Seventh Montana Plant Conservation Conference

February 15-16, 2012
Montana Fish, Wildlife & Parks Montana Wild Center, Helena

Welcome to the new Montana Department of Fish, Wildlife & Parks Montana Wild Center in Helena and the 2012 Montana Plant Conservation Conference. The first day of the conference is devoted to climate change, one of the most pressing conservation issues of our time. Presentations in the morning session will cover some of the many ways that a changing climate has affected plant communities in the past and appears to be affecting plants in the present. Climate change is a hot topic with land management agencies and NGOs. In the afternoon we will hear some of the directions these on-the-ground managers propose to mitigate the effects of a changing climate on natural resources. Presentations will be followed by a discussion and question period when members of the audience will be able to engage presenters. The second day of the conference will consist of two workshops. In the morning botanists and resource managers will review the Montana Natural Heritage Program Species of Concern (SOC) list, providing new information on distribution and threats and suggestions for rank changes. That afternoon the Important Plant Areas (IPA) Committee and others who wish to attend will review nominations for new IPAs.

MNPS

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.

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.

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Helping People Help the Land. The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

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.

Cover Illustration of *Viburnum edule* by Debbie McNiel.

Schedule

Wednesday, February 15

9:30-9:40 Welcome. *Dave Hanna, President, Montana Native Plant Society*

Morning - Effects of Climate Change on Plants ***Moderator: Tara Carolin, Glacier National Park, National Park Service***

9:40-10:10 Long-Term Vegetation Change as Revealed by the Fossil Pollen Record. *Heather Almquist, College of Arts and Science, University of Montana*

10:10-10:35 Radial Growth Responses Among Naturally Occurring Western U.S. Conifers under Changing Environmental Conditions: Responses from Western Montana Forests. *Steve Shelly, U.S. Forest Service, Region One; Paul Knapp, Department of Geography, University of North Carolina, Greensboro; Peter Soulé, Department of Geography, Appalachian State University*

10:35-10:50 Break

10:50-11:15 Wildflower Phenology on Mt Sentinel - A Harbinger of Global Change? *Paul Alaback, College of Forestry, University of Montana*

11:15-11:40 Glacier National Park GLORIA Project: An Evaluation of the Effects of Climate Change on Alpine Plant Species Composition and Distribution. *Lindsey Bengston, Glacier National Park, National Park Service*

11:40-12:00 Arctic and Boreal Plants Decline at the Southern Margin of Their Range in Montana. *Peter Lesica, Herbarium, University of Montana*

12:00-1:00 Lunch

Afternoon - Strategies for Mitigating Effects of Climate Change on Plants ***Moderator: David Cole Aldo Leopold Wilderness Institute, U.S. Forest Service***

1:15-1:35 Responding to Climate Change in Natural Areas: What Do We Hope to Accomplish? *David Cole, Aldo Leopold Wilderness Institute, U.S. Forest Service*

1:35-1:55 Plant Conservation in a Changing Climate: Adaptation Approaches in the Northern Region of the U.S. Forest Service. *Steve Shelly, U.S. Forest Service, Region One*

1:55-2:15 Preparing Biodiversity Conservation Projects for Climate Change: Taking Confident Steps into an Uncertain Future. *Jonathan Hoekstra, Senior Scientist The Nature Conservancy, Seattle*

2:15-2:30 Break

2:30-2:50 The BLM and Climate Change: Working Towards Organizational Efficiencies and Conservation Effectiveness. *Wendy Velman and David Wood, Montana State Office, Bureau of Land Management*

2:50-3:10 Working with National Park Service Partners to Mitigate the Effects of Climate Change. *Tom Olliff, Great Northern Landscape Conservation Cooperative, National Park Service*

3:10-4:00 Questions/Discussion

Thursday, February 16

8:30-12:00 Workshop: Threats and Ranks of Montana's Plant Species of Concern. *Moderator: Scott Mincemoyer, Montana Natural Heritage Program*

Participants will review the MT plant Species of Concern (SOC), contributing information on threats and related data that are used to assign threat ranks and state Heritage ranks. Please review the plant SOC list at http://mtnhp.org/SpeciesOfConcern/?AorP=p and the Montana Threat Ranks at http://www.mtnativeplants.org/Species%20of%20Concern%20Threat%20Assignment before the meeting and be prepared to contribute any new information or thoughts you may have during the discussion. This process helps to improve the SOC list, which agencies and NGOs use to direct conservation actions.

12:00-1:00 Lunch

1:00-3:30 Workshop: Montana's Important Plant Areas. *Moderator: Peter Lesica, Herbarium, University of Montana*

Peter will lead discussion of new IPA nominations.

Abstracts

Long-Term Vegetation Change as Revealed by the Fossil Pollen Record

Heather Almquist, College of Arts and Science, University of Montana

How vegetation will respond to future climate change is an issue of upmost importance to conservationists, economists, and the general public alike. Although uncertainty surrounds the exact nature of the climate changes to be expected at any given latitude, the Northern Hemisphere has already been subjected to relatively abrupt climate, including average temperature shifts of roughly 2°C during the mid-Holocene. Thus, changes in Holocene vegetation provide valuable insights into how vegetation may respond to climate change on the order of that expected during the next century.

Over the past 60 years or so, a vast number of late-Quaternary fossil pollen records have been developed for eastern and northern North America. These data are organized and made available through the NOAA Paleoclimatogy Program (http://www.ncdc.noaa.gov/paleo/paleo.html), along with many other types of paleoclimate records. The North American Pollen Database allows continental scale reconstructions of past vegetation, including changes in the abundance and distribution of individual taxa, significant plant associations, and entire biomes. Researchers have also used fossil pollen data to examine the nature of altitudinal migration of vegetation and relative rates of vegetation change.

Radial Growth Responses Among Naturally Occurring Western U.S. Conifers under Changing Environmental Conditions: Responses from Western Montana Forests

Peter T. Soule, Appalachian State University, Boone, North Carolina; Paul A. Knapp, The University of North Carolina at Greensboro; Steve Shelly, U.S. Forest Service, Region 1, Missoula, Montana

In a multi-year project funded by the National Science Foundation, we are examining radial growth rates of co-occurring Douglas-fir (DF -- *Pseudotsuga menziesii* var. *glauca*) and ponderosa pine (PP -- *Pinus ponderosa* var. *ponderosa*) trees growing on moisture-limited sites in national forests of the northern Rocky Mountains to determine if there are: 1) differential growth responses; 2) differential responses to climate and climate change; and 3) differential growth responses to changing atmospheric composition (i.e., increasing CO_2). We collected samples and developed standardized tree-ring chronologies from seven sites, with each site a matched pair of DF and PP. For each individual chronology we examined the climate response of radial growth by comparing the mean standardized ring widths to a suite of monthly, seasonal, and annual climatic variables. We examined temporal changes by comparing pre- (early) and post-1950 (late) growth rates and climatic conditions. We used matched pairs tests to determine if significant differences in growth rates occurred between species. We are using carbon isotope analyses to determine if intrinsic water-use efficiency has changed through time due to changing atmospheric composition. We found no significant difference in radial growth rates between species with any of the seven matched pairs. Radial growth rates were significantly greater in the "late" period at four of the seven study sites, with greater values in the "late" period at all sites. A combination of spring/summer moisture conditions related positively to radial growth and the primary climatic drivers were consistent both between species and within the region. None of the climate variables identified as the primary growth drivers displayed long-term trends or differences between the pre- and post-1950 period. We conclude that any changes in radial growth rates of DF and PP are not being driven by concurrent changes in climate. The carbon isotope analyses are currently incomplete, but our prior results from PP throughout the western United States suggest significant increases in water-use efficiency with time, with a strong theoretical link to these changes being driven by increasing levels of atmospheric CO_2.

Wildflower Phenology on Mt Sentinel - A Harbinger of Global Change?

Paul Alaback and Michael Krebs, College of Forestry, University of Montana

Naturalists and agriculturists have always been fascinated by and attentive to the variation in the timing of when flowers first bloom, leaves first unfold, or when birds first

arrive in the spring (the study of phenology). Most plants become active after there is sufficient daylight per day (a function of calendar date) and sufficient warmth or thermal energy. Observations of the timing of plant life stages are of great interest to ecologists today since they offer many potential insights into the local effects of global change and can promote a better understanding of how individual plant species or whole communities adapt to changes in weather or climate. Understanding the response of plant phenology to changing climatic conditions is of particular interest along ecotones and elevational gradients where you can directly compare responses of different species or ecological strategies.

Fourteen years ago we initiated a study on the phenology of over 100 species of forbs, grasses, trees and shrubs on Mt. Sentinel, using a 3 km section of trail which spans 410m of elevation near the University of Montana campus. We have local climatic data from stations distributed along our transect including soil and air temperature, net radiation and precipitation. The mean date of the first flowers of each species range from March 14 for *Ranunculus* to early September for *Artemisia* species. Emergence of the first flowers of many early spring species can be precisely predicted (+/- 2 days) by 12 day running means of air temperature. There is a wide range in climatic sensitivities of species, generally according to evolutionary history, flowering season, lifeform and structure. Species typically range from 12-27 days from the mean date of flower emergence, depending on weather conditions. Besides patterns in phenological changes, we have also noted disappearance and invasions of both native and exotic species over the 14 year period that appear to be related to changing climatic conditions. While it is not possible to definitively document the effects of climate change on plant phenology with only 14 years of data, our data is consistent with longer term studies which suggest that the phenology of plants in the Northern Rockies are particularly sensitive to changes in spring temperatures. Rapid changes in phenology have many implications for conservation and planning in our region. Of greatest concern are potential ecological "mis-matches" between species that are rapidly adapting to changing climatic conditions and those that are lagging in their response. Recent studies in other regions have shown ecological mis-matches between seed dispersers, pollinators, exotic species, and native plants of conservation interest. Careful monitoring of plant phenology provides a critical baseline for adaptive management and restoration, and may also be valuable in assessing the vulnerability of individual species or communities as climate change continues to progress.

Glacier National Park GLORIA Project: An Evaluation of the Effects of Climate Change on Alpine Plant Species Composition and Distribution

Lindsey Bengtson and Daniel Fagre, U.S. Geological Survey, Northern Rocky Mountain Science Center; Jen Asebrook and Jen Hintz, Glacier National Park

High mountain systems, including alpine life zones, have been widely recognized as global indicators of climate change, partly because high elevations are characterized by low temperature conditions and minimal biotic interactions. These areas, especially in national parks, have nominal exposure to direct land use impacts, making them a great place to implement the Global Observation Research Initiative in Alpine environments (GLORIA) protocol for monitoring long-term changes to alpine vegetation. Recent global studies have revealed changes in species richness and species composition at high elevations over the past decade. Much of this change is being attributed to climate change, however relatively little is known in the alpine regarding natural species turnover rates, competitive interactions, cold air pooling effects on vegetation, and plant sensitivity to interannual climatic variability. For example, many parts of the northern hemisphere experienced a hot, dry summer during 2003, followed by wet, cool summers in 2008 and 2009, years of initial GLORIA surveys and re-surveys, respectively, on four mountain summits in Glacier National Park (GNP). Although species richness increased by 8-51% over the course of five years at the four GNP GLORIA sites, this is likely a predominant response to cyclical dry and wet years. What is missing is information regarding annual rates for colonization, establishment, and loss of species tied to annual climate conditions. However, presentations at the 10th annual GLORIA conference revealed many

similar stories with increases in species richness and composition. To address these questions we have created and conducted an improved sampling design. This study will provide information to better understand upward shifts and displacements of mountain plants by warming and determine plant sensitivity on a fine scale.

Arctic and Boreal Plants Decline at the Southern Margin of Their Range in Montana

Peter Lesica, Herbarium, University of Montana

Plant ecologists unanimously agree that climatic warming occurring now and predicted to continue will alter the distribution of plants. Biogeographic theory predicts that species will be most sensitive to environmental change at the periphery of their range. Warming should affect populations at the southern (warm) margin of a species' range before central populations. Numerous arctic and boreal species reach the southern margin of their range in alpine and peatland habitats of western Montana. I monitored the density of 20 peripheral populations of 12 arctic and boreal species in permanent plots in Glacier National Park and The Nature Conservancy's Pine Butte Preserve over the past two decades, a period of dramatic climate warming. Of the boreal peatland species, three declined, while two remained stable. Four species of arctic plants declined, two species were stable, and one species increased at one site but declined at the other. Overall, of the 20 populations of 12 species, ten populations showed a significant decline; nine were stable; and only one increased. Thirty-three percent (n=6) of monocots declined, but 83% of dicots (n=6) declined. These results support the hypothesis that northern species are declining at the southern margins of their geographic ranges.

Responding to Climate Change in Natural Areas: What Do We Hope to Accomplish?

David Cole, Aldo Leopold Wilderness Institute, U.S. Forest Service, Missoula, MT

To respond effectively to climate change, it is critical to understand what we are trying to accomplish and to articulate this in clear statements of goals and objectives. This is difficult enough when dealing with a single species or a small area. It becomes highly problematic when the concern is for the effects of climate change on ecosystems covering extensive landscapes. Stewardship goals for natural areas, including parks and wilderness are founded in the concept of naturalness. Unfortunately, natural is a vague concept that has at least three meanings. One meaning of natural is a **lack of human effect**. Places with little apparent human impact have sometimes been referred to as pristine. The goal here is to preserve places where the imprint of human activities is low to nonexistent. A related—but decidedly different meaning—is **freedom from intentional human control**. Where nature is not intentionally controlled it is self-willed, a concept that is often captured in the terms wildness and untrammeled. Managing for self-willed nature involves human restraint, in that it requires hands-off management and the absence of human manipulation of ecosystems. Finally, naturalness also implies **historical fidelity**—the idea that natural ecosystems should be preserved in states similar to those that existed in the past, with similar species composition and ecological processes. The goal here is to retain the basic ecosystem features valued when the area was designated as a protected area. For much of the 20th century, it was assumed that these three meanings were congruent, that ecosystems could be preserved in a pristine state without intentionally manipulating them (at least not much) and that maintaining the pristine was the same as maintaining historical fidelity. But now—given what we have learned about the dynamism of ecosystems and the prevalence of human impact and directional climate change—we know that these meanings are not congruent. We must choose between them. Three divergent goals—three different notions of what we are trying to accomplish—each suggestive of different ways to respond to climate change—are (1) to let things be, respecting nature's autonomy, (2) to try to maintain things much as have been in the past, seeking historical fidelity, and (3) to promote resilience, the ability of future ecosystems to absorb change and still persist without undergoing a fundamental loss of character.

Plant Conservation in a Changing Climate: Adaptation Approaches in the Northern Region of the U.S. Forest Service

Steve Shelly, U.S. Forest Service, Region One, Missoula, MT

In the face of changing climatic conditions, conservation of plant diversity on national forest lands in Montana will likely involve a number of approaches. The geographic ranges and habitat affiliations of sensitive plant species will be important considerations in developing conservation strategies. Monitoring of priority species and habitats, coupled with adaptive management, will form the basis for management responses. Ongoing and potential approaches include: control of invasive species to promote vegetation resilience, especially in high-priority habitats; implementation of mitigation measures for land management projects occurring in sensitive areas; ecological restoration (e.g., for whitebark pine [*Pinus albicaulis*]); conservation of critical habitats (such as peatlands, which are also important carbon sinks); *ex situ* seed conservation (especially for globally rare species with narrow geographic ranges or habitat affinities); and continued establishment of protected areas (such as Research Natural Areas and Botanical Special Areas). Long-term monitoring for some sensitive plant species has indicated population resiliency or stability during the fluctuating climatic conditions that have occurred during the last two decades in the northern Rockies. Where such results are available, management responses will be integrated with available ecological and life history information.

Preparing Biodiversity Conservation Projects for Climate Change: Taking Confident Steps into an Uncertain Future

Jonathan Hoekstra, Senior Scientist The Nature Conservancy, Seattle

Climate change is no longer an abstract future threat. Early impacts are already being observed around the world. To help conservationists prepare biodiversity conservation projects for expected climate changes, we developed a step-by-step approach to developing appropriate climate adaptation strategies. Application of our approach to 20 projects from diverse geographies around the world yielded important insights into how climate change is likely to impact biodiversity conservation, and how conservationists can prepare their projects. Twenty project teams identified 176 likely climate impacts and developed adaptation strategies to address 42 of these impacts. The most common expected impacts of climate change were to habitat quantity or quality, and to hydrologic regimes. For twelve projects, the focal species or project boundaries will need to change in anticipation of climate impacts. More than half of the adaptation strategies aim to resist climate change and preserve the status quo for biodiversity. The rest aim to make ecosystems and species more resilient in the face of expected changes. All projects altered strategies in some way in anticipation of climate change, either by adding new actions or by adjusting existing actions. Habitat restoration and enactment of policies and regulations were the most frequently prescribed actions. While the effectiveness of new adaptation strategies is not yet known, the application of a methodical approach for preparing for climate change gives conservationists a way to take more confident steps into an uncertain future.

The BLM and Climate Change: Working Towards Organizational Efficiencies and Conservation Effectiveness

Wendy Velman and David Wood, Bureau of Land Management, Billings, MT

The BLM manages about 245 million surface acres and 700 million subsurface acres across the United States, with Montana, North Dakota and South Dakota covering 8.3 million acres of public land as well as a 47-million acre mineral estate. Our response to climate change covers multiple scales from engagement with partners to coordinate across large scales down to site level planning incorporating the dynamic nature of our systems. Our response also emphasizes on the ground adaptation actions we can do now to build resilience into systems as well as supporting the science needed to further our understanding of the management challenges in the future. We are working on

the challenge with other regional entities and partnerships such as with Landscape Conservation Cooperatives. By establishing trust and cooperation, the LCC partnership can enable our collective capacity to be more efficient and effective in addressing multijurisdictional, transboundary conservation issues. At the local level our Native Plant Materials Program is working to ensure we have adequate seed available for restoration actions. The use of locally collected seed for restoration and rehabilitation projects provide genetics that are adapted to this environment and have that best chances of maintaining viable populations into the future. Seed used from other location is very limited and usually only in situations of emergency rehabilitation due to erosion; the non-native species are used as placeholders to stabilize soils and give the soils a chance to develop into suitable habitat for a more native vegetation cover in the future. Overall adaptation to climate change involves the BLM working at scales and time frames not traditional to the agency, but the transition to a landscape approach is positioning us to better respond to large scale pressures such as climate change.

Working with National Park Service Partners to Mitigate the Effects of Climate Change

Tom Olliff, Co-Coordinator, Great Northern Landscape Conservation Cooperative, National Park Service, Bozeman, MT

In an effort to preserve our natural and cultural heritage, the NPS is responding to climate change and its effects on our nation's most treasured resources, guided by the NPS Climate Change Response Strategy. The Strategy describes goals and objectives to guide our actions under four integrated components: science, adaptation, mitigation, and communication. These actions will require an unprecedented level of cooperation and transcend park boundaries. To achieve this coordination in the northern rockies, the NPS is co-leading the Great Northern Landscape Conservation Cooperative, a new level of organization that involves federal, state, tribal, Canadian, and NGO partners across almost 260 million acres. This talk will describe coordinated efforts to apply the tools of climate change monitoring and analyses to parks in the northern rockies, such as Scenario Planning in the Crown of the Continent, developing usable climate projection data in the Greater Yellowstone area, conducting a whitebark pine vulnerability assessment across the northern rockies, and monitoring the effects of climate change on alpine vegetation and sage habitat across three NPS I&M networks.

Workshop: Montana Plant Species of Concern and Threat Ranks

Moderator: Scott Mincemoyer, Montana Natural Heritage Program

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/Species%20of%20Concern%20Threat%20Assignment), and the assigned threat ranks have been incorporated into the Montana Natural Heritage Program's on-line Field Guide and Plant Species of Concern Report, both available at http://mtnhp.org/. The goal of this workshop is to solicit additional input on threats to plant Species of Concern, review the assigned threat ranks, and to review/solicit input on all aspects of the plant Species of Concern List. Participants will have the opportunity to submit threats information and recommend changes to the ranks for particular species prior to the conference, during the workshop, and after the conference. During the workshop, we will: 1) review methodology and criteria, 2) review individual species' threat ranks and Heritage ranks, and 3) gather input and feedback on the assigned ranks. Please review the plant SOC list and threat ranks before you come at http://mtnhp.org/SpeciesOfConcern/?AorP=p.

Additions and Deletions to the SOC List Since 2010

Additions:

Botrychium lanceolatum: Rare in the state. Very few observation records and population levels are poorly documented.

Botrychium lunaria: Rare in the state. Few observation records and population levels are poorly documented.

Botrychium pinnatum: Rare in the state. Very few observation records and population levels are poorly documented.

Botrychium simplex: Rare in the state. Very few observation records and population levels are poorly documented.

Douglasia conservatorum: Described as a new species in 2010 based on a single location along the Idaho/Montana border.

Erigeron grandiflorus: Known in Montana from only a couple of collections.

Mimulus clivicola: Recently documented in Montana from 1 collection from 2010.

Mimulus floribundus: Known in Montana from two historical collections.

Mimulus hymenophyllus: Known in Montana from only 1 locality.

Penstemon humilis: Known in Montana from 1 collection from Beaverhead County.

Pinus albicaulis: Large declines in population levels and continued threats from white pine blister rust and mountain pine beetle attacks threaten the long-term viability of the species. Species is a Candidate for listing under the U.S. Endangered Species Act.

Symphyotrichum molle: Known in Montana from 1 collection from the Bighorn Mtns. Though its exact status in Montana is uncertain, its rarity warrants its inclusion as a Species of Concern.

Deletions:

Castilleja crista-galli: Though uncommon in the state, it is more abundant and widespread in southwest Montana than previously reported by MTNHP. Its habitat and viability generally do not appear to be at risk in Montana.

Eustoma grandiflorum: Removed from SOC status due to insufficient information on the habitat and locality of the single Montana collection. May have been an isolated introduction into the state.

Kalmia polifolia: The Montana material of *Kalmia*, which has been treated as *K. polifolia* based on size characters appears to all be properly treated within *K. microphylla*. *Kalmia polifolia* in the strict sense is a species of the northeastern U.S, upper midwest and across portions of Canada.

Penstemon attenuatus var. ***militaris***: Reports of this variety in Montana were based on a mis-identified specimen at the MONTU Herbarium. Specimen was re-determined to *Penstemon attenuatus* var. *pseudoprocerus* by Craig Freeman in 2010.

Penstemon globosus: Though rare in the state, it is more common and widespread in southwest Montana than previously reported by MTNHP. Its habitat and viability generally do not appear to be at risk in Montana.

Poa arnowiae: Moved to Status Under Review pending further taxonomic clarification of *Poa anowiae* in relation to *Poa wheeleri* and the previously used name *Poa curta*. Additional review of Montana specimens is needed.

Potentilla uniflora: Though rare in the state, the species does not appear to be at any significant risk of extirpation as a result of relatively healthy population levels and lack of threats to those populations and the species' habitat.

Symphyotrichum frondosum: Previous reports of this species in Montana are referable to *S. ciliatum*.

Taraxacum eriophorum: Species was removed from SOC status due to a taxonomic change. It is now treated as part of the more common *Taraxacum ceratophorum*.

Instructions for Completing the Montana Important Plant Area Nomination Form Based on Plant Species of Concern

Criteria: A site in Montana may be nominated as an "Important Plant Area (IPA)" if it meets one of the following criteria (a or b):

a. Site contains at least one plant species of concern that is globally ranked as a G1, G2, or G3.

b. Site contains an assemblage of at least three plant species of concern that are state ranked by the Montana Natural Heritage Program (MTNHP) as an S1 or S2.

For each G1, G2, and G3 species the committee will pick the best five sites if more than 50% of the global population occurs in Montana or the best three sites if less than 50% of the global population occurs in Montana.

Nominated Site Name: Provide a name for the nominated site.

General Location: State the closest geographical landmarks, such as a road, town, river, and/or mountain.

Site Coordinates: Provide the coordinates of the site's center or four corner boundaries. Provide the Township, Range, Section (TRS); Universal Transverse Mercator (UTM); or Latitude/Longitude. Be sure to include the datum used for determining the UTM or Latitude/Longitude.

Maps / Photographs: Provide in either hardcopy or electronic format a map(s) that: a) clearly shows the site's boundaries; b) approximate location within Montana; and c) the site's location. Photographs of the site are optional. NOTE: If submitted electronically, map(s) and photograph(s) must be provided as separate files from this form.

County: Name the county that contains the site.

Elevation: Write the elevational range of the site and indicate the unit of measure (feet or meters).

Size of Area: Write the approximate size of the site and provide the unit, such as acre, hectare, or square mile. There is no size requirement for nomination as an IPA.

Property Ownership: Provide the name of the landowner, if under private ownership, or the land management agency. Be as specific as possible, for example, USFS, Helena National Forest, Lincoln Ranger District. List any other designations the site may have. Examples include, but are not limited to, Wilderness Area, Research Natural Area, Conservation Easement, or Montana Department of Transportation Wetland Mitigation Site.

Plant Species of Concern (SOC) Information: Complete Table 1 for each SOC plant present at the site. Use page 4 if more space is needed. For each plant SOC: a) provide the most current global and state ranks (website: www.mtnhp.org), and enter the b) date, c) approximate population size, and d) population trend based on the last observation of the plant population. In the section below Table 1 state if this information was observed by you or based on a particular report and provide any supporting data, information, and sources.

Threats: Based on the last observation, list relevant real or potential threats for each SOC plant. Use the corresponding number of 1-11 in Table 1 to identify the plant in Table 2. In 35 spaces or less name the threat or threats that affect or may affect the population. Examples include, but are not limited to: road maintenance, herbicides, trampling, climate change, development, fire, or lack of fire. If a threat is absent or unknown then state none or unknown. Use page 4 if more space is needed. State whether the threat is high, moderate, low, very low, or not assessed using these definitions:

High = A significant likelihood of impacts, activities, or events that will result in a severe (>60%) reduction in population numbers or habitat in the near future (usually 0-5 years).

Moderate = A significant likelihood of impacts, activities, or events that will result in a severe (20-60%) reduction in population numbers or habitat in the near future (usually 1-5 years).

Low = A significant likelihood of impacts, activities, or events that will result in a small though significant (5-20%) reduction in population numbers or habitat in the future (usually 5-20 years).

Very Low = No significant likelihood of impacts, activities, or events that will result in a reduction in population numbers or habitat for the species in Montana.

NA = Not Assessed

Provide additional comments in 67 spaces or less.

What qualifies this site as an IPA? Provide the reasons why the nominated site deserves recognition and conservation. Your answer should address several aspects of the site, such as plant assemblage; population viability, size, health, and/or genetics; quality of the site in terms of weeds, land-use issues, and/or other threats; uniqueness of the site; biogoegraphical considerations (population widely disjunct, geology, etc.); and/or other attributes. In addition, provide a rationale for placement of the boundaries.

Form Submittal: Provide your name (first and last), date you submitted this form; organization affiliation (if any); complete mailing address; electronic mailing address (optional); and the best phone number for contacting you.

Please submit hard copy forms to:

Montana Native Plant Society
Attention: Conservation Committee
P.O. Box 8783
Missoula, MT 59807-8783

Please submit electronic forms and maps to:

Peter Lesica at peter.lesica@mso.umt.edu

Your nomination will be reviewed by the IPA Committee which meets once a year. The Committee will contact you if there are questions. Updates regarding Important Plant Areas in Montana will be presented at the Montana Plant Conservation meeting held during the winter of even-numbered years.

Thank you for taking the time to nominate a potential IPA!

Important Plant Area Nomination Form - Montana

(for sites containing one or more plant species of concern)

Nominated Site Name:_____

General Location (nearest town; river; topographical feature; etc.):_____

Site Coordinates: ☐ map(s) attached. Notes: _____

☐ photograph(s) attached. Notes: _____

Township_____, Range_____, Section(s)_____; _____

Datum:_____; UTM Zone___, N_____, E_____; N_____, E_____;

N_____, E_____; N_____, E_____.

Lat.___° _____ Long.___° _____; Lat.___° _____ Long.___° _____;

Lat.___° _____ Long.___° _____; Lat.___° _____ Long.___° _____.

County:_____ Elevation:_____ to ____ ____ Size of Area:_____

Property Ownership:_____ Other Site Designations:_____

Table 1: Plant Species of Concern Information.

Plant Species (scientific name)	MTNHP Rank		Date Last Observed?	Population Size	Trend (increasing, decreasing, stable, fluctuates, unknown)
	Global	State			
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					

Provide the source for trend information, citations, and other pertinent SOC data:

_____

_____

_____

_____

Table 2: Type and Severity of Threats for each listed SOC plant.

Plant Species #	Threat	Level	Comment

Form updated on January 10, 2012

Explain why the nominated site deserves recognition as an Important Plant Area:

Form Submitted By:_____

Date Submitted:_____

Affiliation:_____

Mailing Address:_____

E-Mail Address:_____

Phone Number(s): (____) ____-_____ ext._____: (____) ____-_____ ext._____

If needed, use this space to provide additional species and information.

Accommodations

Budget Inn Express (downtown)	800-862-1334
Holiday Inn (downtown)	443-2200
Howard Johnson (east side)	443-2300
Knight's Extended Stay (west side)	594-0625
Sanders Bed & Breakfast (central)	442-3309
Super 8 (east side)	443-2450

On-Your-Own Lunch Options

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

Turn left 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 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, 1 West 15th Ave., 449-7032

Turn left onto Euclid Ave. (Highway 12). Travel 2.2 miles. Turn right onto North Last Chance Gulch. In 0.1 mile take the second right onto West 15th. The Café is on the corner. Cajun and Creole offerings, including jambalaya, gumbo, po boy sandwiches, specialty sandwiches, and salads.

Emiliano's, 632 Euclid, 443-5478

Turn left onto Euclid Ave. (Highway 12). Travel 1.5 miles. Make a U-turn and head back west on Euclid. Emiliano's will then be on the right. Offering a selection of typical Mexican food.

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

Turn left 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 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

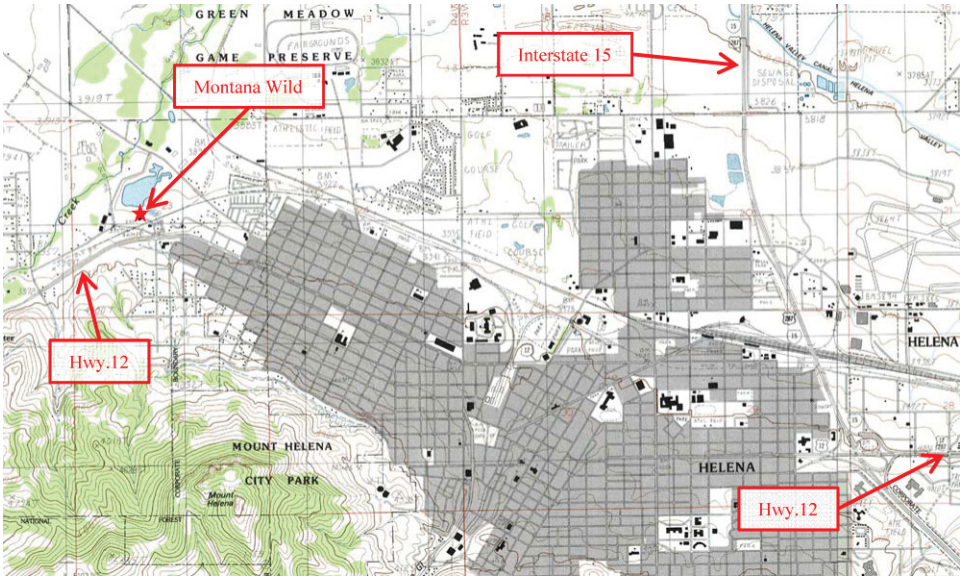
Turn left onto Euclid Ave. (Highway 12). Travel 1.7 miles. Make a U-turn and head back west on Euclid. The Staggering Ox will then be on the right in the Lundy Shopping Center. Featuring hot and cold sandwiches, salads, quesadillas, hot dishes, and a wide selection of vegetarian options.

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.

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 the Montana Wild facility.



Notes