Volume 35 No. 2 | **Winter 2022**

Kelseya

Newsletter of the Montana Native Plant Society



Kelseya uniflora
ill. by Bonnie Heidel

What Does the Future Hold for Glacier's Alpine Plants?



Papaver pygmaeum a rare alpine-artic plant blooming on the distant edge of the Siyeh Pass study area. Andrew Smith photo.

By Andrew Smith, Flathead Chapter

Our changing climate does a funny thing to the relationship between time and space. It is no secret that high elevation areas are warming at a faster rate than the global average. These already extreme habitats are subject to another extreme: that of rapidly changing temperature and hydrology. So, while in a sense, alpine areas are in the future—on the vanguard of changes that will soon be observed everywhere, it can also be said that they are stuck in the past—refugia of Ice Age species that have disappeared elsewhere. This paradox—that the alpine is a space stuck between the past and the future—make it an especially rich place to observe climate change.

A new study, published this spring in the book *Mountain Landscapes in Transition, Effects of Land Use and Climate Change*, explores this unique time-space relationship in the alpine plants of Glacier National Park. Lead author, Martha Apple of Montana Tech, and her team, documented what plants and plant traits occur more often near or far from snowfields. This study gives us a baseline for current plant distribution in Glacier's alpine, and a hint as to what may come as snowfields continue to shrink, and the areas distant from snow grow.

Data for this study was collected, starting in 2014, from three snowfield sites (which may be familiar to Glacier hiking enthusiasts), the moraine of the former Clements Glacier, near Piegan Pass, and near Siyeh Pass. The study areas are each 50 meters long (except the Clements site, which is hemmed in by the moraine), and oriented perpendicular to the leading edge of the snowfields. The beauty of this design is that as you travel down the study area, and away from the snow, you can see the results of older and older snow retreat. As you move away from the snowfield in space, the snowfield retreated from that spot longer ago. That is, space can substitute for time. Of course, it's not a perfect substitution, but these data offer a powerful suggestion as to what the future of these places holds.

Apple et al. collected information as to the location and traits of plants in these three areas, allowing them to examine which species and traits were more prevalent near the snowfield or further away. Near the snow they commonly observed species like *Claytonia lanceolata* (spring beauty), *Epilobium anagallidifolium* (alpine willowherb) and *Oxyria digyna* (mountain sorrel). Plants near the snow generally have more water available but a shorter growing window, as the ground is covered by snow later into the spring or summer.

To continue to be successful, snowfield plants will also need to be able to effectively colonize new areas as the snowline continues to retreat. These conditions appeared to favor certain reproductive strategies. *C. lanceolata* reproduces from corms, and both *E. anagallidifoloium* and *O. digyna* are rhizomatous.

Distant from the snow, *Dryas octopetala* (mountain avens) and *Salix arctica* (arctic willow) were some of the most prevalent plants. These distant plants were frequently mat-forming, dwarf shrubs. Cloning was usually through adventitious roots, rather than the rhizomes of the near-snow plants.

(continued on page 4)

Chapter Events

Calypso Chapter

Info: Catherine Cain at 406-498-6198; nativeplants@montana.com or Karen Porter at 406-498-9728; karenwporter44@gmail.com.

Clark Fork Chapter

Info: Teagan Hayes at 920-979-9009; teagan.hayes@gmail.com or Paul Buck at 970-901-2418; paul7703@gmail.com.

Monday, January 10, 7:00 p.m. Want to learn how to attract more birds to your garden by growing native plants? Join Naomi Alhadeff, Montana's Education Coordinator for the National Wildlife Federation, who will inform us on **Native Plants for Birds: What Plants and Which Birds.** Joint meeting with Montana Audubon, Rm. 110 of the Interdisciplinary Science Bldg. at the southwest end of campus **(note the different day and place).** Masks are required in all University buildings.

Thursday, February 10, 7:00 p.m. Quaking aspen is one of Montana's most widespread trees, partly due to its ability to regenerate both sexually and asexually. Mark Kreider studied aspen regeneration and response to fire and will tell us about **The Natural History of Quaking Aspen**. Rm. L09 Gallagher Business Bldg., UM Campus. Masks are required in all University buildings.



Thursday, March 10, 7:00 p.m. Join ethnobotanist Rose Bear Don't Walk as she explores relationships between the Salish people and their traditional food and medicinal plants. **Recovering Our Roots: Salish Ethnobotany for Community Wellbeing.** The meeting will be virtual via Zoom; an email link will be sent to members prior to the event.

Thursday, April 14, 7:00 p.m. Jenny Tollefson spent two months in Chile and Argentina in 2020. Come and see **A Window into the Patagonian Flora** where she will share photos and some things she learned about the plants she encountered along the way. Rm. L09 Gallagher Business Bldg., UM Campus. Masks are required in all University buildings.

Eastern At-Large

Contact Jennifer Lyman for all field trips or information at 406-860-0223 or jenclyman@gmail.com.

Jennifer Lymann gave a slide presentation on **Alpine and Arctic Wildflowers** to the Red Lodge Garden Club in October. The presentation focused on alpine flowers of the Beartooths and the Gulkana Mountain Range in Alaska. The Arctic wildflowers highlighted were those that Jennifer encountered on her canoe trip of the Thompson River on Banks Island, Canada.

Flathead Chapter

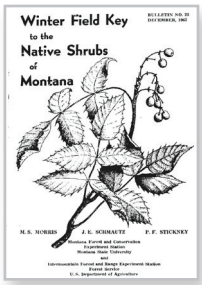
Info: Tara Carolin at 406-607-7670; mnps.flathead@gmail.com.

Chapter organizers are busy planning for the 2022 Annual Meeting. Watch your email for volunteer opportunities. We are also working on three events this winter and early spring but have not yet set dates. Watch your email for those dates also.

On Zoom. Date TBD. Flathead Conservation District Goes Native. The FCD will share their exciting programs to promote and protect native plants and habitats including riparian restoration and native gardening.

Date TBD. Conservation Gardening with Native Plants. Kathy Ross will give her delayed but anticipated program on gardening for birds and more with natives. This will be outside and as soon as the weather allows.

Date and location TBD. Identifying Woody Plants in Winter using the *Winter Field Key to the Native Shrubs of Montana*. Download a copy at: *https://mtnhp.org/Reports/BOT_Key_MT_WinterShrubs_Morris_1962.pdf*



Kelsey Chapter

Info: Mark Majerus (president) or Jane Fournier (secretary) at kelseychaptermnps@gmail.com.

Maka Flora Chapter

Info: Bob Srygley at 406-488-6086, robert.srygley@usda.gov.

Valley of Flowers Chapter

Info: Contact Gretchen Rupp for program details or to be added to the Valley of Flowers Chapter "Friends" e-mail list, at 406-586-8363, beesgrmt@gmail.com.

Tuesday, January 11, 7:00 p.m. Land Stewardship and Improvement. Join Plant Materials Specialist Larry Holzworth to learn how to care for your soil and its flora. This Zoom presentation is especially geared to those with land outside of town who have conservation concerns such as weed encroachment, erosion, or restoration of the native plant community. Program and Zoom details will be included in the January member/friends e-mail.

Tuesday, February 8, 7:00 p.m. Tour of the MSU Herbarium. MSU hosts an organized collection of plant specimens from throughout the state, dating back many decades. Who has collected these? Who uses them, and for what purposes? Join Herbarium Curator Matt Lavin to tour the Herbarium and learn how its collection might be of interest to the general citizen.

Tuesday, March 8, Program TBA.

Western At-Large

Info: Kris Boyd at 406-295-9414, boyd.kristina@yahoo.com.

MNPS Supports Student Registrations at "Five Needle Pine" Conference

On October 5-7, 2021, the Second Conference on the Research and Management of High Elevation Five Needle Pines in Western North America, nick-named the H5II Conference, was held virtually. Hosted by the Whitebark Pine Ecosystem Foundation based in Missoula, the conference included plenary sessions with prominent key-note speakers, focused virtual meeting rooms, and virtual exhibits. The Montana Native Plant Society (MNPS) supported the conference at the Limber Pine level ($1,000). Additionally, the Board saw an opportunity to support MNPS member attendance, for members "currently employed in the natural/environmental sciences," by offering a competitive application for registration fee support. An ad hoc committee was established to manage this award and it added a competitive student category for applications from students at Montana's universities and colleges.

Although we had no applications from MNPS members, we did have good student response. MNPS covered registration fees ($100/each) and a one-year MNPS membership for five students.

Congratulations to each of you, and we look forward to having you join us!

Ad Hoc Committee: Karen Porter, Laurie Kurth, Patrick Plantenberg



Solomon Ziegert:
Undergraduate, University of Montana; pursuing research opportunities in five-needle pine management. Solomon joins the Clark Fork Chapter.



Emma Heydenberk:
Undergraduate, Montana State University; focused on understanding high-elevation habitats. Emma joins the Valley of Flowers Chapter.



Owen Comes:
Undergraduate, Montana State University; hopes to work on conservation and rehabilitation of native species. Owen joins the Valley of Flowers Chapter.



Natasha Chadwell:
Graduate student, Montana Tech; research focused on mycorrhizal fungi interactions and relationships with native Montana flora. Natasha joins the Calypso Chapter.



Chloe Wasteneys:
Graduate student, Montana State University; studying physiological traits and stress tolerances of high-elevation pine species. Chloe joins the Valley of Flowers Chapter. Photo taken in the MSU greenhouse with her seedlings.

WHITEBARK PINE
ECOSYSTEM FOUNDATION

"Being able to attend the "H5II" 5-needle pine conference has been one of the most valuable experiences that I have had in my progression towards my future career. It was amazing to see people from all over working towards a common goal with so much passion. Getting to take a peek at how the research community interacts with each other and presents research makes me wish I was already getting out into the field doing research of my own. That being said, I want to thank the Montana Native Plant Society for supporting my registration to attend the "H5II" 5-needle pine conference."
-Owen Comes

Conservation Corner

Save the Dates: The Montana Native Plant Society will host the 11th Plant Conservation Conference on March 30-31, via Zoom

Presentation titles and presenters are provided below.
The full proceedings will be emailed to members prior to the conference.
Conference is free of charge.

The Future Climate and Distribution of Plant Species in Montana, Bryce Maxwell
Climate Change Monitoring Above Treeline: Baby Steps in the Anaconda Range, Jessie Salix
Monitoring Changing Ecotones in Wetlands, Dave Hanna
Southern Margin Populations: Looking for Early Signs of Global Warming, Peter Lesica
Western Bumblebee Sampling Initiative, Tabitha Graves
Monitoring for the Effects of Climate Change on Plants and Pollinators, Laura Burkle
Insights on GLORIA Sites, Martha Apple
Challenges and Strategies for Long-term Plant Monitoring, Brian Smithers
Hager Lake Fen Monitoring; Sixty Years of Change, Derek Antonelli
The USA-NPN: A National Network for Collecting, Storing, and Sharing Phenology Information, Erin Posthumus
Challenges and Strategies for Implementing Volunteer-based Rare Plant Monitoring, Wendy Gibble & Walter Fertig
Montana's New Threat Tracking System, Andrea Pipp

GLACIER ALPINE

(continued from page 1)

Generally, plants further away from the snow needed to have more drought-tolerant characteristics because melting snow is the main source of water in this environment. This not only affected species composition, but also the traits of plants within a single species. Many of these drought adaptations can be observed in the leaves. Plants of the same species might grow denser leaves the further they are from the snowfield. Further from the snow, you are more likely to observe succulent leaves, evergreen leaves, and leaves that are small or divided. Plants that have little access to water frequently take on the shape of a shrub or cushion, and can have thick bark.

This study provides a snapshot in time, a baseline for what these liminal habitats looked like in 2014, and it transforms these spots into snowfield observatories, that can be returned to for monitoring trends. By moving 50 meters from the snow, and thus years into the snowfield's past, it also suggests a model for the future of this habitat. The plants and traits that are today distant are likely to move up in the future as snowfields shrink. This information allows us to predict, and adapt to, what is coming. What we do know is that drought-tolerant, adventitious plants are likely to be the future of Glacier's alpine. But will there still be a space for those water-loving, wide-leaved plants of today's alpine? Only if we act now.



photo by Andrew Smith

Oxyria digyna, a species found commonly near the study's snowfields

Upcoming Zoom Programs:

https://www.mtnativeplants.org / mnps-presents-online-programs/

January 26, 7 p.m. Montana Citizen Botany, with Andrea Pipp

February 23, 7 p.m. Recovering our Roots: Salish Ethnobotany for Community Wellbeing, with Rose Bear Don't Walk

March 23, 7 p.m. Mycorrhizae and Plant Communication Networks, with Cathy Cripps

WELCOME NEW MEMBERS!

The Montana Native Plant Society would like to welcome and thank new members from the following chapters:

Calypso Chapter

Natasha Chadwell

Clark Fork Chapter

Karen Dawson, Tabitha Espinoza, Jennifer Kruger, Bird Meile, Susan Misgen, Estelle Shuttleworth, Allie Smith, Clint Whittle-Frazier, Solomon Ziegert

Flathead Chapter

Chris Holdhusen, joining as a lifetime member

Kelsey Chapter

Karol Lee, Michael Marsh

Maka Flora Chapter:

David Branson, David Wheeler

Valley of Flowers Chapter

Heidi Anderson, Suzanne Held and Michael Herring, Emma Heydenberk, Owen Comes, Chloe Wasteneys

Eastern Montana at Large

Maura and Stephen Cornell, Katherine Richards, and Wendy Velman joining as a lifetime member

Society Presents Outstanding Service Award

At its Annual Meeting on October 10, 2021, the Montana Native Plant Society presented its Outstanding Service Award to Gretchen Rupp. The Society says …



If an organization is in transition and looking for a leader - someone who exemplifies order and process, detail, and follow-through - ask an engineer.

If the organization hopes for maximum productivity and minimum anxiety - ask a specific engineer.

And if, finally, the organization would thrive best if enveloped by calm and humor and goodwill - then ask engineer Gretchen Rupp.

The organization did ask - and she said yes.

Gretchen served two 2-year terms as President of the Montana Native Plant Society, from July 2017 through June 2021.

But way before her presidency of MNPS, Gretchen was fully engaged with the Montana Native Plant Society. She has been a member since 1987, firmly planted in the Valley of Flowers Chapter. Within that chapter she chaired committees, participated in and sponsored events, and over time assumed informal chapter leadership including Valley of Flowers' production of the 2014 Annual Meeting, "Fire and Ice." In 2015, Gretchen undertook the role of Chapter Representative to the MNPS Board of Directors, while continuing as that chapter's informal leader. Gretchen deftly balanced those dual roles until a change in chapter leadership allowed her to assume the Society Presidency in June 2017, as the society entered a time of transition.



Gretchen's thank you gift: painting by Sharon Lamar of Gentiana algida

MNPS members at both the chapter and state level who have worked with Gretchen know why this award is so appropriate and deserved. It recognizes Gretchen's consummate dedication to the organization and her ability to lead and bring others along, no matter the size of the task.

In recognition of Gretchen's years of extraordinary service, and most recently her superb leadership in a transitional time for the organization, the Montana Native Plant Society awards Gretchen Rupp its 2021 Outstanding Service Award - with our thanks and best wishes.

Our Growing Society

by Maria Mantas – Membership Chair

MNPS has some good news to report. Our membership has steadily increased over the last few years, bringing us to more than 900 members! The MNPS Board is delighted that so many people find conservation of native plants and imparting knowledge of our native flora relevant to so many people. This rise in membership has allowed the Society to provide more funds for small grants, improve the quality and frequency of our educational outreach, and support students in botany programs.

These stepped-up efforts, however, come at a cost. As you may already know, except for producing the *Kelseya*, MNPS is an all-volunteer organization. This increase in work places more demand on our volunteers. Over the last year, the Board discussed options for best ways to move forward, considering many scenarios for how to continue our important work sustainably.

The outcome was "Go Big or Go Home!" Rather than scale back efforts to accommodate our small volunteer workforce, the Board decided to increase revenue which would allow us to employ the part-time help we need to grow our organization. Our first step was to increase membership dues, which haven't been raised in more than 15 years, and to encourage donations from our membership. We don't know what effect this change will have on membership numbers and revenue, but all indicators point to a generous membership that wishes to support our work. After the renewal season, the Board will assess our financial position and make a decision about hiring staff (either employed or contracted).

This renewal season please consider how much your contributions mean to the important work accomplished by your native plant society! Thank you for your membership and support.

January 31 Small Grants Deadline is Rapidly Approaching:

If you or someone you know has a project or research idea that promotes native plant conservation or education, now is the time to apply for a grant to help fund it. Eligibility criteria and application instructions are on the website (https://www.mtnativeplants.org/small-grants-program/), or contact Betty Kuropat at blueirismt@gmail.com with any questions.

Sharp-tailed Grouse - Montana's Deciduous Bird

(Part 2: Continued from Spring 2021 issue)

By Ben Deeble, Big Sky Upland Bird Association

Adaptation for feeding in the canopy of deciduous shrubs is what allows Sharp-tailed Grouse to survive extreme winter periods when similar species like Ring-necked Pheasant (*Phasianus*) and Gray Partridge (*Perdix*) commonly perish. Naturally occurring winter foods are the fruits of low growing plants like snowberry (*Symphoricarpos*) and rose (*Rosa*), and once these are buried, sharptails shift into the canopy to feed on the terminal buds and catkins of taller native shrubs and trees. Birch (*Betula*), aspen (*Populus*), willow (*Salix*), hawthorn (*Crataegus*), serviceberry (*Amelanchier*) and chokecherry (*Prunus*) provide important winter foods. Sharptails will also exploit hedgerow and orchard species such as Russian olive (*Elaeagnus angustifolia*), and apple (*Malus*). During extreme scarcity, sharptails will seek berries of juniper (*Juniperus*) and even the needles of Douglas fir (*Pseudotsuga*). Sharptails may be an important vector for seed dispersal.



photo by Rick Sojda

Sharptails boost dietary protein by consuming many terrestrial arthropods (grasshoppers, beetles, spiders, etc.). The importance of arthropods to the survival of the precocial chicks, which forage and feed almost exclusively on bugs during the first three weeks of life, are increasingly recognized as key to high annual recruitment.

In the early 20th century, observations suggest that sharptails also "followed the plow" with populations increasing, at least sporadically, where cereal grains were introduced and sustained more winter flocks. But as the saying goes, "Whatever can be done, can be overdone" so sharptail populations have also disappeared from areas where modern intensive farming and grazing has left little dense grassland for dispersed nesting, few insects for chicks, and eliminated shrubs essential for wintering adults.

Sharp-tailed Grouse were formerly well established in our western valleys and were one of the more conspicuous avian species in the Bitterroot, Missoula, Mission, and Tobacco valleys in the early 20th century (Elrod, 1897). The last known population of Sharp-tailed Grouse disappeared from the upper Blackfoot Valley around 2000, probably from a combination of habitat fragmentation and fire suppression related to human development, geographic isolation from populations east of the Continental Divide, and resulting inbreeding. Sharptails (and other non-migratory lekking birds) appear more vulnerable to fertility declines driven by few males contributing annually to the local gene pool and less mixing with neighboring populations. Under such genetic constraints, populations can decline even in good quality habitats (Westermeier, 1988).

With successful reintroduction of Trumpeter swans and the natural reestablishment of Sandhill Cranes, Sharp-tailed Grouse are the only bird presently missing from the avifauna which historically bred in western Montana. Plans are underway for reintroduction, and any habitat management activities which enhance native grasslands, shrub, and arthropod communities, while limiting expansion of dense evergreen trees, will likely increase their prospects for success.

(Sources available upon request)



Photo by David Moskowitz

FERNS and FORESTS 2022 Annual Meeting

What: Montana Native Plant Society 33rd Annual Meeting

When: June 24-26, 2022

Where: Timberlane Campground, 8 miles north of Libby, Kootenai National Forest

Info: https://www.mtnativeplants.org/annual-meetings/ will be updated regularly. Be sure to check back for many more details.

Why: Field trips, guest speaker, weekend adventure with fellow native plant enthusiasts!

Please join hosts, Flathead Chapter and Western Members-at-Large, to explore the ferns, forests, and flowers of the damp part of Montana, including the nearby Cabinet Mountains. Writer, storyteller, and educator extraordinaire Jack Nisbet (http://www.jacknisbet.com) is our guest speaker. Workshops and field trips start Friday June 24. Meals will be available starting Friday night.

We have reserved Timberlane Campground starting Thursday night June 23. The rustic campground has 12 campsites with tables and fire pits, plenty of room for dispersed camping, a large field for RVs, a small pavilion, water, vault toilets, a horseshoe pit and afternoon shade. If you want other accommodations, consider making reservations early. Libby summers are busy.

We don't know what the COVID-19 situation will be in June 2022, but please be assured we will plan for the health and safety of attendees as appropriate at the time of our meeting.

Registration will open in April, so mark your calendar now and plan on exploring the ferns and forests of NW Montana!

The Friends of the University of Montana Herbarium

By Scott Mincemoyer, Friends of the Herbarium Board Member, and Shannon Kimball, Curator/Collections Manager

Since 1898, the University of Montana Herbarium has been quietly storing, cataloging, and preserving plant specimens from Montana, the U.S. Northern Rocky Mountains and beyond. The herbarium is a repository for specimens of vascular plants, mosses, lichens and diatoms as well as floras, field guides and related information on these taxa. It is located in the Natural Sciences Building on the University Campus in Missoula and is also known by its official herbaria code - MONTU. The collections, which currently number over 130,000 specimens, are stored in more than 90 large metal cabinets.



Educational display featuring a tribute to Morton Elrod, who founded the UM Herbarium in 1898.

The UM Herbarium houses the largest collection of Montana plant specimens and one of the top collections of Northern Rocky Mountain plants in the world. As such, it is an immensely valuable collection for documenting the diversity and distribution of Montana's flora. It serves as an important resource for plant taxonomic and systematic research, and for plant conservation efforts within the state. The collection has been and continues to be an important tool for federal land management agencies such as the U.S. Forest Service and for work conducted by The Montana Natural Heritage Program related to assessing plant conservation status. The herbarium also provides the building blocks for field guides and floristic works such as Peter Lesica's *Manual of Montana Vascular Plants*.

Over 77,000 of MONTU's moss and vascular plant records are from Montana and are currently available online through the herbarium's website. These records provide images of the specimens along with collection data. This means traveling directly to the herbarium is no longer needed to see detailed information on plant locations, habitat, phenology or to view aspects of a plant's morphology visible in the specimen image. Direct access to and examination of the specimens is still needed to see fine-scale detail and to conduct other taxonomic and systematic research.



The UM Herbarium offers educational tours to small groups interested in learning more about the herbarium's history and collections.

The herbarium provides other services such as mentoring students who would like more education in plant taxonomy. It provides work-study jobs to students in fields like wildlife biology and environmental science. Herbarium staff create educational displays for campus buildings. The herbarium also provides volunteer opportunities for folks interested in working with plants through the winter and tours for small groups who would like to learn more about the herbarium.

UM's herbarium has struggled with a lack of financial and institutional support over the last few decades, as have many herbaria across the country. This has happened largely as the focus has transitioned from traditional field botany and morphological studies to the high-tech world encompassing molecular genetics. Additionally, herbaria use relatively large amounts of valuable and limited indoor space and competing demands for the use of such space is omnipresent.

As a result of these struggles, the Friends of the University of Montana Herbarium (FOH) was founded in 1996 to support the facility. Spearheaded mainly by Montana Native Plant Society members, the group was organized to provide not only financial support but a "voice" for the herbarium to help protect and enhance the facilities. FOH has been important in keeping the herbarium's presence at the University of Montana during times of budget cuts and competing demands for space. These challenges continue to be a threat. Maintenance, staffing and progress on important projects at the herbarium are hindered by lack of funding. Membership in the Friends of the Herbarium helps ensure that Montana's historical collections are maintained and enhanced, and that access to the specimens and data are always available. Learn more about joining FOH and supporting this invaluable public resource on MONTU's website at (http://hs.umt.edu/herbarium/default.php).

Gardener's Notebook
Using Native Plants in Backyard Landscaping

Rhamnus alnifolia

Alder-leaved buckthorn
Rhamnaceae

By Caroline Kruckeberg Clemans, Member at Large

One of the last crops of native plants I propagated came from a beautiful pile of mixed seeds in the form of bear dung.

I could tell there were *Prunus virginiana* and *Sorbus* sp. seeds, but there were some unknowns. When they emerged, the following late spring and early summer, I was so surprised. There was the buckthorn leaf. I hadn't seen it around my neck of the woods (the northwest end of the Mission Mountains) and still haven't. I think the bear must have been on "the other side of the mountain, to see what he could see!"


Photo ©Drake Barton

Research provided some insights on its stature and performance in the garden. Alder-leaved buckthorn is a native low shrub with beautiful deeply textured, 10-14 veined glossy leaves and seems a likely candidate for the garden. The shrubby nature should provide cover for many species of wildlife; cool in the summer and providing thermal cover under snow in the winter. Its relative, *Frangula purshiana*, is taller (15-30 feet) and not an ideal specimen plant. It would be worthy to have both as a collection to note differences.

Ranging from British Columbia to California and east to Idaho, Northwestern Montana and all the way to Quebec and Maine, it could be determined that there is diversity pertinent to each locale.

Alder-leaved buckthorn grows from one to three feet tall in Montana. The branching habit is broad but thankfully from one stem, not a suckering plant. The root system is valuable for erosion control. Seeing the roots in potted two-gallon plants, it's noted that they are finely fibrous in four years.

In the wild you would find this plant tucked into partly sunny to shady moist edges of swamps and fens, and shady rocky creek drainages, perhaps under Douglas Fir, Grand Fir, Western Hemlock with Pacific Yew in the west and Lodgepole Pine and Douglas Fir on the east side of Glacier Park (i.e. Many Glacier). Plants observed in the Cabinets were in moist ravines, while in Glacier Park, they were at the forest edge of an open wetland.

Alder-leaved buckthorn should be planted in part sun/shade - if your rainfall is low and it is not near a natural wet area, supplemental water would help it to thrive.

The flowers are borne in clusters of two to five, blooming in May to June. They are greenish yellow, cupped, with five sepals and no petals.

In late summer with ripening, birds and bears eat the drupes. They are purplish black with two flat seeds within. Note: these berries are poisonous to humans. Seeds require cool stratification. Fall sowing is ideal, otherwise store for three months at 33-41° F and sow in spring, in about an inch of soil in a flat or in the ground, in partial or filtered shade.

Large spreading shrubs in the wild often have horizontal branches covered in leaf litter. This will compost over time along with the ebb and flow of moisture in its growing area to produce roots in a vegetative layering that increases shrub width. Take this as a hint to be used as a means of propagation. Re-create this in the garden to develop new plants. Pin a branch in a shallow trough and mulch with composted bark keeping it moist through the summer. From spring to the next fall, if well rooted, cut the stem from the parent plant and dig it up as an individual the next spring.

Cuttings from semi-mature twigs can be taken from July to August. Stick cuttings in media. Thoroughly water in and set cloche in indirect light. In three to four weeks check them. This is a slow process. Protect them for the winter.

The bark of alder-leaved buckthorn contains a laxative, however *Frangula purshiana* (Cascara) is "the all-American laxative". The bark is collected and cured. The longer the cure, the less harsh the result. Collecting bark from alder-leaved buckthorn branches may be a little more intensive than from the taller Cascara with larger trunk area.

Alder-leaved buckthorn, the 3-foot wide, 4-foot-tall shrub, deserves a trial in our native plant gardens. The only negative I can think of could be birds dispersing seeds in unexpected areas. But those textured glossy leaves and low stature are desirable.

USDA Hardiness Zone - Up to zone 5

Type – Shrub

Mature Size - 3-6' wide by 3-6' tall

Bloom Color – Green, inconspicuous

Bloom Time – April – June

Soil Preference – Moist well drained, various, acidic to neutral

Water Needs – Medium (total rainfall plus irrigation 15-20" a year)

Light – Part sun to shade

Noteworthy Characteristics – Deeply veined and glossy leaves, short stature, moisture tolerant, some wildlife value in the fruits and twigs.

Propagation – Seeds, cuttings, layering

Native Habitat: Woodland, Swamp/Marsh, Bog/Fen, Lakeshores (www.wildflower.org)

Sources

Grouse Springs Nursery

Hart, Jeff. *Montana Native Plants and Early Peoples*

Kershaw, Linda. *Edible and Medicinal Plants of the Rockies*

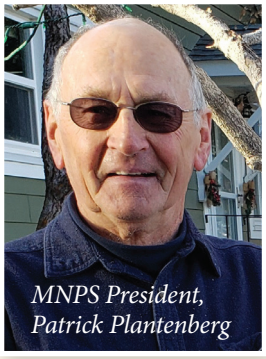
Kershaw, McKinnon, Pojar. *Plants of the Rocky Mountains*

Kimball S., Lesica P. *Trees and Flowering Shrubs of Glacier National Park*

Rose, Robin. *Propagation of Pacific Northwest Native Plants*

Thompson, Peter. *Creative Propagation*

President's Platform



MNPS President, Patrick Plantenberg

Five months ago, I took office as President of MNPS. I am impressed by the work our volunteer members complete to help MNPS and Montana native plants.

2021 Virtual Annual Meeting October 10th - Secretary Rachel Potter and Past-President Gretchen Rupp organized the event. The business portion was short and sweet. The virtual field trip presentations were excellent. Plan now to attend the in-person 2022 Annual Meeting "Ferns and Forests" June 24-26 at Timberlane Campground, 8 miles north of Libby, just off the Pipe Creek Road in the Kootenai National Forest.

Membership News - Membership Chair Maria Mantas completed our new membership brochure. She continues to improve our membership database and working with Treasurer Laurie Kurth they have shortened the time it takes to recognize new members.

Five Needle Pine Conference - MNPS financially supported the Second Conference on the Research and Management of High Elevation Five Needle Pines in October. Special thanks to Calypso Chapter representative Karen Porter for her efforts to award five free registrations to university students.

Montana Citizen Botany Program - Montana Natural Heritage Program Botanist and MNPS member, Andrea Pipp and Conservation Committee Co-chair, Elizabeth Bergstrom, continue working to get a Citizen Botany Program started in Montana.

2021 Helena-Lewis & Clark National Forest Plan - Conservation Committee co-chair Peter Lesica commented in 2017 for MNPS and some comments were incorporated into the new 2021 Helena-Lewis & Clark National Forest Plan. The Conservation Committee is busy planning the virtual 2022 Montana Plant Conservation Conference in early 2022.

Zoom Programs - With the huge success of online Zoom programs last year, MNPS decided to sponsor one Zoom Program each month this winter. Beth Madden, Valley of Flowers Chapter member, organizes and hosts these sessions. These digital programs help our rural members who have limited access to events in our larger cities. Programs are recorded and links to the recordings are posted on our website by our Webmaster Bob Person. As of early December, two programs are available.

Revitalizing the Landscaping and Revegetation Committee - Catherine Cain, Calypso Chapter member, has been updating the outdated MNPS Native Plant Source Guide. Mark Majerus, Barbara Amidon, Robert Pal, Linda Iverson, and I are set to help review and include new detailed plant information sections to her document. It will be a living document on the MNPS website. Please join us on the committee to stimulate the use of native plants in landscaping and pushing for native plant revegetation efforts on all lands. The document should be on the website by the end of December.

Sponsorships – Finally, working on the new Native Plant Source Guide has made me realize just how many organizations and individuals potentially make money working with native plants. My goal is to develop a sponsorship program where these organizations and individuals financially help sponsor MNPS so we can hire a part-time executive assistant to help our volunteer members and do even more for native plants in Montana.

Looking forward to meeting and working with you in the coming year. Please call me anytime with questions or concerns 406-431-4615. Happy New Year!

Simplified Plant ID with High Country Apps

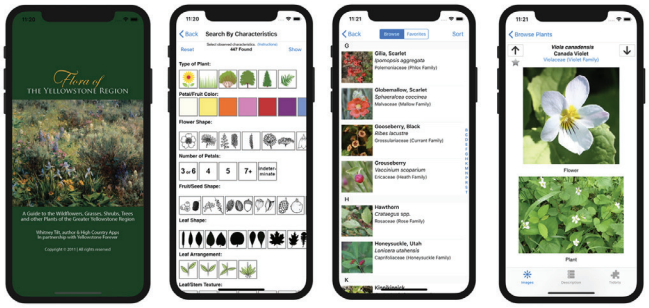
by Beth Madden, Valley of Flowers Chapter, with contributions by Katie Gibson

Some lucky prizewinners received free flora apps from High Country Apps during our Fall 2021 Annual Meeting on Zoom. For those not familiar with this Montana-based company and their plant identification apps, read on for an overview.

High Country Apps got its start when the author of *Flora of the Yellowstone*, Whitney Tilt, asked software engineer Katie Gibson of Bozeman if she'd like to convert the book into a mobile app. Indeed she did, and in 2012 High Country Apps was founded, with *Flora of the Yellowstone Region* as its first product.

The two sat down to design a friendly icon-based interface where the user taps the plant characteristics they observe while the app filters the list down to the most probable candidates. Once the plant's identity is found, detailed photos, illustrations, descriptions, habitat, and cultural information are presented. The user can select as many of the trait categories as are apparent for the plant they are seeking to identify: type of plant (e.g., tree, shrub, flower, fern), petal/fruit color, flower shape, leaf shape, habitat, elevation, flowering time, etc. With each selection, the list of probable plants filters down, greatly simplifying ID.

Thinking that Glacier National Park might be another great location for a flora app, Katie was introduced by a mutual friend, Rachel Potter, to Shannon Kimball, University of Montana Herbarium Curator and author of several books on Glacier's flora. The result of their collaboration is the *Glacier Wildflowers* app.



Soon after, another Montana partnership began between High Country Apps and Montana State University in Bozeman. Whitney and Katie worked with Matt Lavin, Jane Mangold, and Hilary Parkinson on the resulting *Montana Grasses* app, featuring 260 graminoids occurring throughout the state. The app is now used in courses at MSU.

High Country Apps' initial products have grown into a dozen (and counting) apps over the last decade. The company has partnered with groups from around the world, including the University of Washington Herbarium and *OregonFlora* at Oregon State University, and they recently worked with the Flora of Nepal Project to launch a *Wildflowers of Mount Everest* app. The full suite of High Country Apps products can be found at www.highcountryapps.com.

Because High Country Apps is committed to conservation and the outdoors, each year they donate a substantial portion of their app proceeds to groups committed to protecting and/or understanding our public lands. For example, part of the proceeds from *Montana Grasses* goes to the Montana Native Plant Society. Sales of the *Glacier Wildflowers* app benefit The Glacier National Park Conservancy. Yellowstone Forever is the conservation partner for the *Flora of the Yellowstone Region* app.

The apps are available for either Android or iOS operating systems, are inexpensive, and can be used without an internet connection. Try one out today – with each purchase you'll be helping support important conservation groups!

We Need Your Energy!

Are you interested in a great opportunity with a great organization? The Montana Native Plant Society needs your time and talent on the Board of Directors. We are proud to be an all-volunteer organization, but we can't be that without smart, energetic volunteers! Each year, we elect three officers to two-year appointments. In 2022, the elective positions are Vice President, Eastern At-Large Representative, and Secretary. Any of these positions can be shared by two people. If you aren't ready for an officer position, various committees are always looking for folks with fresh ideas. Board volunteers have the deep satisfaction of actively working with others to forward our goals of education and protecting and conserving native flora. If you might be interested in any of these spots, please contact Gretchen Rupp at 406-586-8363 or beesgrmt@gmail.com or Pat Plantenberg at 406-431-4615 or m2andp2@mt.net.

Gold Country Master Gardener Symposium
Saturday, April 2, 2002
Carroll College Campus Center
Register after February 1 at:
https://www.goldcountrymg.org

It's time to renew your membership!
Please renew on-line at https://www.mtnativeplants.org/membership/ or fill out and mail the renewal form on the next page.

MONTANA NATIVE PLANT SOCIETY MEMBERSHIP

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Phone_____

JOIN, RENEW, OR DONATE ONLINE AT: www.mtnativeplants.org

Please notify us promptly of address changes (physical or email) at mtnativeplantmembership@gmail.com

☑	Membership Type	Dues
☐	Individual	$30
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☐	Living Lightly/Student	$20
☐	Lifetime (one-time payment)	$1,000
☐	Paper Kelseya Fee Add $10 if you wish to receive a paper copy of our quarterly newsletter Kelseya, otherwise an e-version of Kelseya will be delivered via email	$10

An **additional donation** to MNPS helps support conservation action, educational programs, and botanical research. Donors will receive acknowledgement of their contribution in the spring issue of *Kelseya**. You can select from the following giving categories:



☐ Kelseya — $50
☐ Bitterroot — $100
☐ Lupine — $250
☐ Ponderosa Pine — $1000
☐ Other — $_____





☐ *Check if you wish your donation to be anonymous
☐ Check if you wish to be contacted for volunteer opportunities

Membership in MNPS is on an annual basis, March 1st to February 28th. Memberships processed before November 1st will expire the following February 28th. Memberships processed after October 31st will expire February 28th of the year after.

MNPS Chapters and the Areas They Serve

Members are welcome to affiliate with any chapter. Please select ☑ your chapter affiliation.

☐ **Calypso** (Beaverhead, Madison, Deer Lodge, & Silver Bow Counties, and Southwestern MT)
☐ **Clark Fork** (Lake, Mineral, Missoula, Powell, & Ravalli Counties)
☐ **Flathead** (Flathead & Lake Counties, and Glacier Nat. Park)
☐ **Kelsey** (Lewis & Clark, Jefferson, & Broadwater Counties)
☐ **Maka Flora** (Richland, Roosevelt, McCone, Sheridan, & Daniels Counties)
☐ **Valley of Flowers** (Gallatin, Park, & Sweet Grass Counties, and Yellowstone Nat. Park)
☐ **Eastern-at-Large**
☐ **Western-at-Large**

Total Enclosed $_____

Make checks payable to: **Montana Native Plant Society**

Please mail this form with your check to:

MNPS
PO Box 8783
Missoula, MT 59807-8783

Welcome to the Montana Native Plant Society!

Memberships are processed on a quarterly basis so you may experience a slight delay in membership recognition and benefits. We appreciate your patience with our all-volunteer organization.

MONTANA NATIVE PLANT SOCIETY
P.O. Box 8783
Missoula, MT 59807-8783

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About Montana Native Plant Society

The Montana Native Plant Society (MNPS) is a 501(c)(3) not-for-profit corporation chartered for the purpose of preserving, conserving, and studying the native plants and plant communities of Montana, and educating the public about the value of our native flora. Contributions to MNPS are tax deductible, and may be designated for a specific project or chapter, for the Small Grants Fund, or the general operating fund.

Your yearly membership fee includes a subscription to *Kelseya*, the quarterly newsletter of MNPS. We welcome your articles, field trip reports, book reviews, or anything that relates to native plants or the Society. Please include a line or two of "bio" information with each article. Drawings should be in black ink or a good quality photocopy. All items should be emailed to scottguse@yahoo.com and jenhintzguse@gmail.com, or mailed to: Scott and Jennifer Guse, *Kelseya* Editors, 725 Twin Lakes Road, Whitefish, MT 59937.

Spring issue deadline is March 10

Please send web items to our webmaster at:
Bob Person at: thepersons@mcn.net

Advertising space is available in each issue at $5/column inch. Ads must be camera-ready and must meet the guidelines set by the Board of Directors for suitable subject matter; that is, be related in some way to native plants or the interests of MNPS members.

If you would like extra copies of *Kelseya* for friends or family, contact the Newsletter Co-editors at: scottguse@yahoo.com or jenhintzguse@gmail.com. No part of this publication may be reprinted without the consent of MNPS. Reprint requests should be directed to the newsletter co-editors.

Changes of address and inquiries about membership should be sent to **MNPS Membership, P.O. Box 8783, Missoula, MT 59807-8783**.

Please visit our website at: www.mtnativeplants.org

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Moving? Please let us know at mtnativeplantmembership@gmail.com