

Castilleja linariifolia

Castilleja

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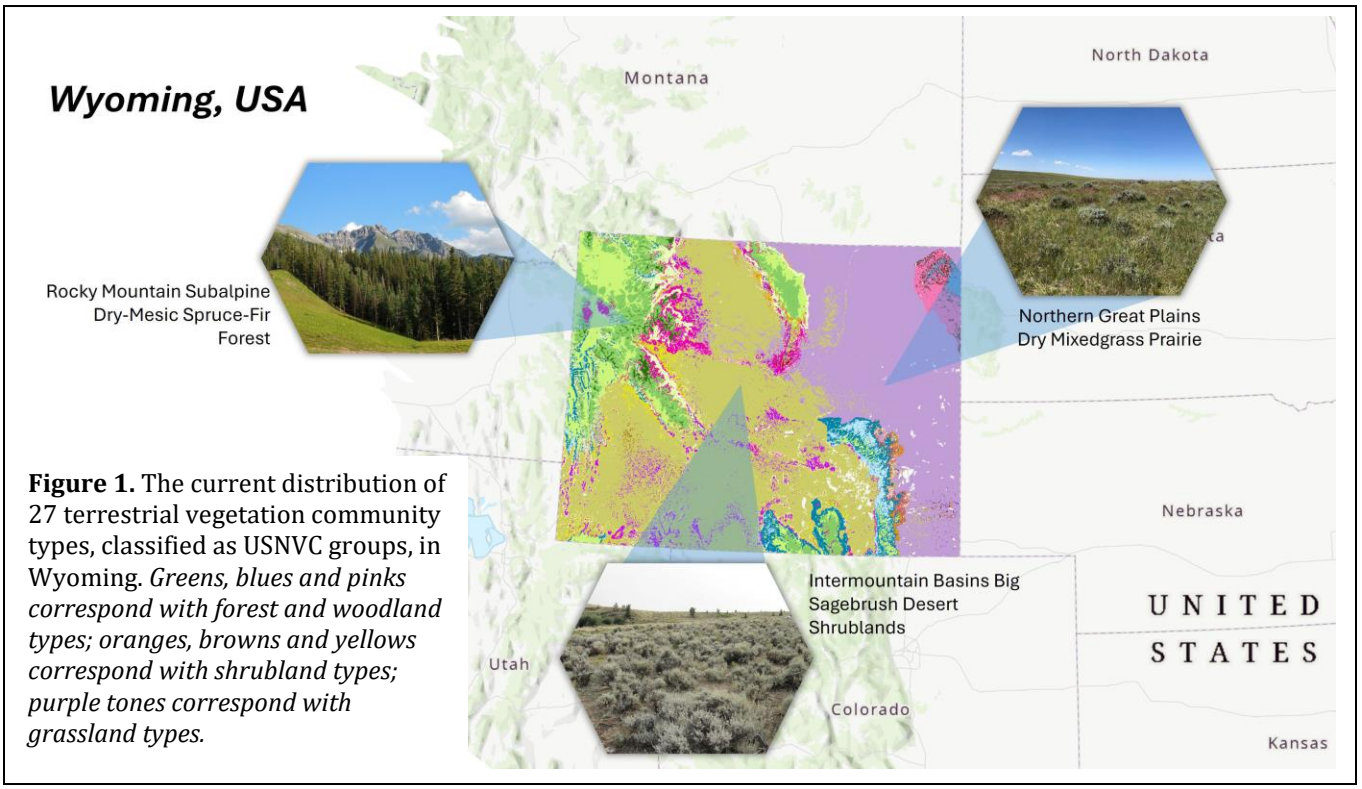


Figure 1. The current distribution of 27 terrestrial vegetation community types, classified as USNVC groups, in Wyoming. *Greens, blues and pinks correspond with forest and woodland types; oranges, browns and yellows correspond with shrubland types; purple tones correspond with grassland types.*

New Maps of the Terrestrial Plant Communities of Wyoming

Paige Copenhaver-Parry, PhD, Wyoming Natural Diversity Database, University of Wyoming

Robust vegetation maps underpin many biodiversity conservation efforts, yet stewardship and management of plant species and communities have long been challenged by inconsistencies in classification and mapping standards across the multiple jurisdictions that may span a species' range. The United States National Vegetation Classification (USNVC) was organized in the 1990's by the Federal Geographic Data Committee as a solution to this challenge. The USNVC is a national framework and typology for classifying and describing existing vegetation. The USNVC provides consistent names and descriptions for terrestrial and wetland plant communities, organized within eight hierarchical levels. The upper levels of the classification (formations) are defined by growth forms and can be loosely related to biomes. The middle levels describe plant communities defined largely by diagnostic species, and the lower levels describe distinctive plant associations that exist at fine spatial scales. The USNVC has been successfully applied to standardize classification, mapping, and sharing of vegetation information among agencies and across jurisdictions and, in this way, has supported field surveys, status and trend assessments, and restoration (Cont. p. 4).

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WYNPS News

New members: Please welcome the following new members to WYNPS: Calla Diane, Lusk; Mary Finegan, Sacramento, CA; Katharine Hogan, Lincoln, NE; Karen's Growing Ideas, Steamboat Springs, CO; Sage Lefkowitz, Driggs, ID; Margaret McDonough, Greenville, SC; Roxann Parran, Kailua, HI; Amy Symstad, Hot Springs, SD; Liz Young, Laramie.

WYNPS Board – 2025

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Webmaster: vacant
Sublette Chapter: Jill Randall, President (subwynps@gmail.com)
Teton Plants: Amy Taylor, Treasurer; (tetonplants@gmail.com). Check the chapter homepage (https://tetonplants.org/) for events.
General questions: wynps@wynps.org

Treasurer's Report: Balance as of 24 September: Scholarship = $801; General = $11,571; Total = $12,372.

Call for Nominations: Are YOU interested in being on the Board of Wyoming Native Plant Society? Nominations for 2026 are needed, and the ballot will appear in the next issue – please send nominations to wynps@wynps.or or contact the Secretary-Treasurer.

Next issue: Please send articles and announcements for the next newsletter by 15 November to:

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073

Look for the 2026 Scholarship/ Small Grants announcement, Election ballot and the 2026 renewal insert in December.



Message from the Co-Presidents

Autumn is a time to take stock. Whether it is filling the freezer and arranging home processed food items on a shelf, clearing out old books and donating them, or being sure the propane tank is full and the storm windows are in place, numerous tasks need attention before winter sets in. Another category that deserves your time is taking stock of the organizations to which you choose to support and determining exactly how you support them. Nonprofits such as WYNPS require a board of directors in order to maintain their tax-free status. These boards consist of members who are willing to give just a little extra time and take responsibility for the organization.

It appears that many boards are made up of older people who have left the workforce and now have time to dedicate to the groups they support. That is well and good, but a preponderance of older board members isolates the board and its decisions from the real world where the organization must function. Most younger people feel that they do not have the time to serve on boards, but many are surprised to find that the time commitment is considerably less than they anticipated.

This is the time when WYNPS nominates new board members and officers. It is the time for dedicated members to take a larger role in the future of the organization. In other words, please consider taking a more active role in our very important group.

~Joyce & Mike Evans

Contributors to this Issue:

Paige Copenhaver-Parry, Joyce and Mike Evans, Bonnie Heidel, Kassy Skeen, Meredith Taylor, Dorothy Tuthill.

Walter Fertig Receives WYNPS Hartman Award for Excellence

Moderation was never in the vocabulary of Walter (Walt) Fertig when it came to botany. In fieldwork, research and writing he has been a prodigious professional contributing to both Wyoming botany and to advancement of the Wyoming Native Plant Society mission. At the 2025 Annual WYNPS Meeting, Fertig was named the 2025 recipient of the Hartman Award.



Above: Walter Fertig in the field

Fertig was the most proliferent of Wyoming Natural Diversity Database (WYNDD) Lead Botanists (1993-2001) and the rest of WYNDD staff, releasing 151 publications and technical reports. He fathomed conservation priorities among state and regional endemic species, built baseline documentation of proposed and designated Research Natural Areas, Areas of Critical Environmental Concern, and Nature Preserves, and evaluated ecoregion conservation priorities for plants among all ecoregions of the state.

As WYNDD Botanist, he and members of the Wyoming Rare Plant Technical Committee launched a seminal publication project known as the "Red Book" that stands as a landmark of compiled botanical information on 91 of Wyoming's rarest species at the time (Fertig 1994). This also helped cement WYNDD roles as information clearinghouse and purveyor of biodiversity while reinforcing relations with Rocky Mountain Herbarium including mentoring graduate students. He documented a remarkable number of new rare species locations, all while expanding our knowledge of the state flora; his in-state collection numbers total 17,489.

His University of Wyoming graduate studies were tomes in Wyoming botany. His floristic thesis work in the Wind River Range westside had a stellar breadth of thoroughness among RM floristic theses, coupled with astute attention to the rare elements of diversity that often distinguish a flora (Fertig 1992). His dissertation was completed after he left Wyoming, a handbook for plant conservation that crunched voluminous datasets with conservation biology theory into a Wyoming treatise and a magnum opus (Fertig 2011).

Walt coupled professional work with Wyoming Native Plant Society (WYNPS) tasks in championing four statewide Rare Plant Workshops that WYNPS hosted. He also edited the WYNPS newsletter from 1993 - 2001. It was during his editorship when the newsletter got its name (*Castilleja*) and increased from three times a year to four. It benefited by his wealth of knowledge and sharp wit, e.g., launching a series of articles on "Ten things you've always wanted to know…" as bundles of humor-infused insight into botanical topics. He also prepared the first and only index of the first 20 years of newsletter articles and went on to share his botanical knowledge and editing prowess even wider with Utah Native Plant Society and Washington Native Plant Society. He recently contributed a highlight from a chapter of his dissertation in *Castilleja*. WYNPS is proud to recognize Walt for his professional contributions to the field of botany and for his sterling contributions to the WYNPS mission.

(Continued on next page)

Fertig joins past honorees (Ronald Hartman, B. E. Nelson, Robert Dorn and Jennifer Whipple) as Wyoming native plant legends.

Fertig References

Fertig, W. 1992. A floristic survey of the west slope of the Wind River Range, Wyoming. Masters Thesis. Department of Botany, University of Wyoming, Laramie, WY.

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WY. Photographs by C. Refsdal and J. Whipple. A joint publication of BLM, USFS, WY govt., and Wyoming Natural Diversity Database. Cheyenne, WY.

Fertig, W. 2011. Strategies for plant conservation in Wyoming: Distributional modeling, gap analysis, and identifying species at risk. PhD Dissertation. Department of Botany, University of Wyoming, Laramie, WY.

New Maps of Wyoming Terrestrial Plant Communities (continued from page 1)

Since its initial organization and release, the USNVC has been revised twice through an extensive peer review process. The second edition of the USNVC was released in 2016, and the third edition (USNVC 3.0) is set to be released later this year. While the USNVC itself is a text-based typology of community types and descriptions, each USNVC edition has been leveraged for vegetation mapping. With support from the Wyoming Game and Fish Department, the Ecology team at the Wyoming Natural Diversity Database (WYNDD) has recently leveraged the forthcoming USNVC 3.0 to model and map the terrestrial plant communities of Wyoming under contemporary conditions and future climate.

For this effort, we aggregated vegetation plot data from the BLM Assessment, Inventory, and Monitoring (AIM) program, the USDA Forest Service Forest Inventory and Analysis (FIA) program, and additional wetland datasets prepared by WYNDD. In total, we aggregated plant species percent cover data from 3,679 vegetation plots in Wyoming. We restricted the data to 101 vascular plant species for which sufficient data were available for modeling; these largely consisted of diagnostic species. We then constructed a single joint species model to simultaneously model all 101 species as a function of climate and topography. Joint models link data for individual species through correlations, such that strong community associations are preserved. Our joint model was then applied to predict the distribution and abundance of each species across the entire state of Wyoming, both under current and projected future climate conditions.

Once individual species were predicted and mapped, we applied a set of auto-keys based on USNVC type descriptions to classify each mapped pixel to a specific USNVC group. The group level of the USNVC occupies a middle position in the hierarchy and describes plant communities defined according to diagnostic species and shared biogeography. The result of our effort is a series of maps that depict the distribution of 28 terrestrial plant communities across Wyoming both currently and under projected future climate scenarios.

In analyzing the maps produced from this effort, we have found that plant abundance patterns in Wyoming are well explained by winter temperature and summer precipitation, and that warmer winters and greater summer precipitation anticipated under future climate are likely to cause declines in subalpine forests, xeric and lower montane forests, and mountain grasslands. Simultaneously, grasslands in the Northern Great Plains ecoregion are predicted to shift westward with increasing summer precipitation, expanding into the Wyoming Basins ecoregion. As communities shift, our models predict that species richness and diversity will be reasonably maintained; this is explained by strong associations between diagnostic species that serve to stabilize Wyoming's plant communities. We anticipate that the sorts of analyses that these maps will support will provide useful information to support habitat management and conservation prioritization into the future, and that the current vegetation map will support coordinated vegetation assessments, habitat suitability assessments, and conservation planning in the near term. Efforts are underway to make these maps available through the Wyoming Natural Diversity Database's Data Explorer web application; we anticipate that users will be able to access vegetation maps through the application in the spring of next year.



2025 Annual Meeting – Fort Laramie

Thank you to Mike & Joyce Evans and to Robert Dorn for hosting the 2025 Annual Meeting of Wyoming Native Plant Society! We gathered at the Fort Laramie Community Center, May 3 - June 1 for fieldtrips in all directions.





These photos offer a glimpse of the Broadbeard beardtongue sand dune variety in full glory (above), a prickly poppy posing for a cell phone photographer (upper left), and Robert Dorn engaging an audience along the Laramie River (lower left).

Thanks to all who came!

Announcing: **New Extension Publications**

Planning your garden for next spring? Two new publications from UW Extension, both by Extension Horticulture Specialist (and WYNPS member) Jennifer Thompson, will help you get ideas for appropriate native species, and remind you that it's not too soon to get started.

Native Plants for Wyoming Landscapes: Herbaceous Perennials provides brief descriptions of 24 reliable and showy species that are native to Wyoming (or, in a couple of cases, to neighboring states) and are usually available at local or on-line nurseries, and an additional 16 species that may be harder to locate but are worth the effort. The author also provides an introduction to growing native plants in your garden, with useful links to additional resources. Lovely photos of each species and some gardens will make this a pleasant read all winter long. The on-line pdf can be found at: https://www.wyoextension.org/agpubs/pubs/B-1405.pdf.

Growing Wyoming Native Plants From Seed At Home will take your garden up a notch, as you introduce species that are not available commercially. Jenny walks us through her successful method for raising native plants, starting with seed gathering—you could be doing that now!—through both indoor and outdoor strategies for successful germination and seedling growth. Many, if not most, of our native plants require stratification or scarification (or both) to break seed dormancy, and these topics are covered thoroughly, with text and clarifying photos. The pdf is available on-line at: https://www.wyoextension.org/agpubs/pubs/B-1406.pdf. DT

Announcing:

New Conservation Committee!

At the 2025 WYNPS Annual Meeting, the Board turned a request to approve formation of a Conservation Committee over to attending members…and it was unanimously approved! The request was filed by Bonnie Heidel, who cited comments she prepared on behalf of WYNPS earlier in the year (with approval of Co-Presidents re. proposed delisting of *Spiranthes diluvialis* [Ute ladies-tresses], proposed removal of occupied habitat criteria from environmental reviews under the Endangered Species Act and publishing a newsletter commentary on the potential impacts to plant conservation and people by cutting the federal workforce) as appropriate for such a committee. She also assembled Conservation Committee models from adjoining state native plant societies and a counterpart Wyoming organization (that of the Wyoming Chapter of The Wildlife Society).

In the WYNPS By-Laws, only the Auditing Committee and Nominating Committee are standing committees, and approval of any new committees requires Board approval. A Scholarship/Small Grant Committee was later established by the Board as a standing committee. (Note: the Board has assumed the acting roles of all three standing committees in recent years.)

Is a Conservation Committee even necessary for WYNPS? Plant conservation is a key part of the WYNPS mission statement to promote appreciation and conservation of native plant species and vegetation. It is a recurring theme in all 44 years of Society newsletters. Creating a Conservation Committee is more than a formality but a pledge to routinely convey conservation information to the membership. It is also a commitment to do more than preach to the choir, making this Committee an official function of WYNPS that ideally elevates the stature of plant conservation in Wyoming.

What is the scope of a Conservation Committee for WYNPS? Almost all land management decisions and proposals in Wyoming, whether at national, state and local scales, potentially affect native plants and vegetation. So the Committee will try to focus on proposals or plans for which WYNPS input can convey a unique perspective aiming for significant results in Wyoming for major native plant resources. The Committee will also promotes forums for plant conservation discussions.

So far, the new Committee has submitted comments on parts of the State Wildlife Action Plan that includes plant species for the first time (see article below), on the draft Bridger-Teton National Forest Management Plan and on the proposed recission of the Roadless Rule. We need more Committee members and welcome any information brought to committee attention on proposals and plans to consider. There is a special need for input from professional botanists while realizing the framework in which they work may limit direct participation. Here is a message to all members: Your feedback and questions are welcome, along with any suggestions for the name of a Conservation Committee column. BH

On the Horizon:

Plant Species will appear in Wyoming's next State Wildlife Action Plan



Wyoming's State Wildlife Action Plan (SWAP) will be updated and released in 2027 and include plant species for the first time among Species of Greatest Conservation Need (SGCN). Public comments will be sought in the process and we will keep you informed.

The 2017 Wyoming SWAP was the most recent Plan and it summarized the status of wildlife and fish within the state, provided a blueprint for conserving these species and their habitats, and unlocked federal funding through the State and Tribal Wildlife Grants program (https://wgfd.wyo.gov/wyoming-wildlife/wyoming-state-wildlife-action-plan). It was a comprehensive strategy to maintain the health and diversity of wildlife within the state, including reducing the need for future listings under the Endangered Species Act.

An update to the SWAP was launched within the past year that will include SGCN plant species, while promoting greater funding for wildlife species. WYNPS provided initial comments. At present, we have no other information on how plants will be addressed. BH



Above: One of three interpretive signs was recently added along the Beartooth Scenic Highway alerting visitors to the fragile alpine landscapes and the daunting conditions to which alpine plants are adapted. These signs were a joint project between WYNPS, Shoshone National Forest and other partners.

WYNPS collaborates with U.S. Forest Service on Beartooth Scenic Highway Signs

Kassy Skeen, Shoshone National Forest

Wyoming contains some of the most spectacular alpine landscapes in the country. The unique ecology and sweeping vistas draw people to this extreme environment. The Beartooth Highway All American Road, also known as the Beartooth Highway, crosses one of Wyoming's premier alpine landscapes, spanning a 68 mile stretch across Montana and Wyoming, traversing the Beartooth Plateau and into the Absaroka Mountains. This National Scenic Byway is the highest elevation highway in Wyoming (10,947 ft) and Montana (10,350). It connects several gateway communities to Yellowstone National Park and spans both the Shoshone National Forest and Custer-Gallatin National Forest.

The Wyoming Native Plant Society, Shoshone National Forest, Society of American Foresters, and Region 2 Rocky Mountaineers partnered in 2024 to create a series of three interpretive signs highlighting the unique alpine ecology seen from the highway. The messaging was developed collaboratively and placed at specific locations along the highway to help visitors understand the unique and fragile system they are traveling through. The themes of the three signs are Life at the Summit, Life in the Transition Zone, and Life Above Treeline. The themes are complimentary and track with elevation as travelers move along the Beartooth Highway. "

To date, two of the three signs have been installed with the third scheduled to coincide with other upcoming projects.

Ethnobotany - Part 15

Chokecherry (*Prunus virginiana*)

Meredith Taylor, Certified Wyoming Naturalist

Chokecherries are found throughout the foothills of Wyoming as an abundant native bushy shrub, which ranges throughout North America from Canada to Mexico. They are a perennial plant of the Rose family. Native to Wyoming and the Rocky Mountain west, chokecherries are found in the foothills, usually near streams, where it grows as a shrub. The plant grows 1 - 3 m (3 – 10 ft) on woody stems with simple, alternate elliptical leaves about 5 – 8 cm (2-3 in) long. The clusters of white flowers that bloom in the spring mature to purple fleshy, edible, tart berries in August. A yellow color variant of chokecherry has a similar taste; however, interestingly, birds do not eat these cherries (see photo). Chokecherry bushes are easily recognized even in the winter by the raised air pores (lenticels) on dark brown stems.



Above: Chokecherry (*Prunus virginiana* is widespread across Wyoming. By Meredith Taylor.

The medicinal qualities of chokecherry are anti-inflammatory, anti-oxidant, anti-cancer, cardiovascular and serve as an immune stimulant. Recently a Shoshone-Paiute student was awarded First Grand Prize for her research on traditional uses of whole ground chokecherries to use as gravy to treat cancer. The author has made the chokecherry gravy called toishabui with the Restoring Native Shoshone Food Group on the Wind River Reservation and the Blackfeet tribe in Montana as well. It is a very delicious pudding that was traditionally eaten with meat. It could also be mixed with dried meat to make pemmican to be preserved for the winter.

Chokecherries are often used to make a popular fruit jelly and chokecherry bounce (cherries soaked in whiskey!). They serve as an important resource for native wildlife such as black and grizzly bears, as well as smaller mammals. Chokecherries may be harvested sustainably by milking the cherry clusters at the main stem. This method of harvest allows the plant to continue growing sustainably in the future. However, it is important to know that all parts of the chokecherry plant, except for the flesh of the fruit, contain cyanogenic glycosides, compounds that are converted into cyanide once consumed. Consumption of the seeds in moderation may not be harmful, but moderation is necessary.

References

Dorn, Robert, 2001, Vascular Plants of Wyoming, Cheyenne, WY, Mountain West Publishing.

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Manning, S.S., 2017, Branches, Leaves, Berries. https://ictnews.org/archive/branches-leaves-berries/

Moerman, Daniel E., 2000, Native American Ethnobotany, Timber Press.

Phillips, H. Wayne, 2003, Plants of the Lewis and Clark Expedition, Lone Pine Publishing Co, MT.

USDA Plants Database, https://plants.usda.gov/DocumentLibrary/plantguide/pdf/pg_prvi.pdf

This article is for educational purposes and does not condone collecting of plants that readers can't identify with certainty. The ethics of wild plant collecting is to tread softly through the plant's habitat and only pick the occasional leaf or flower to protect plant sustainability. *Check directly with the agency about their policy if you want to harvest native plants on public land.*

Save the Date!

Rocky Mountain Herbarium Announces Open House & Retirement Celebration for Curator Ernie Nelson

Wednesday, December 3, 2025, 5:00-7:00 pm.
Aven Nelson Building, University of Wyoming Campus, Laramie.

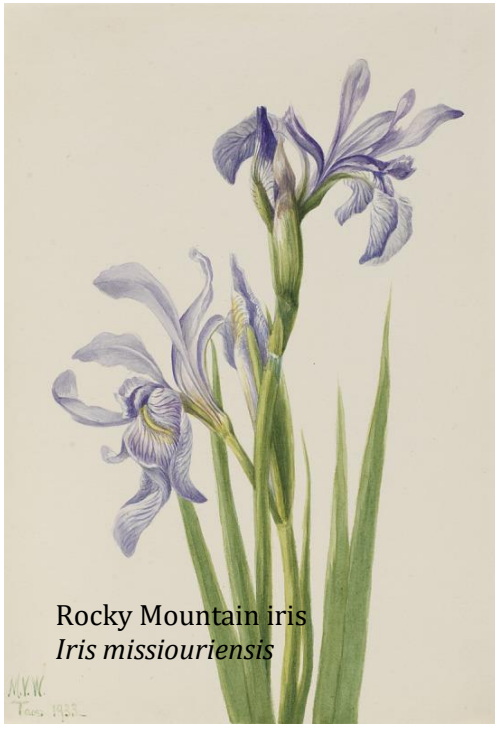
Join the Herbarium in celebrating the retirement of Ernie Nelson in honor of his distinguished 51-year career as the collections manager and curator at the Rocky Mountain Herbarium. We also showcase the herbarium's newly reorganized collections and expanded space. A presentation about the herbarium and Ernie's career will be followed by guided herbarium tours and opportunities to mingle. Light refreshments and drinks will be served. Watch for additional information at https://rockymountainherbarium.org/index.php/workshops-events.

As the October newsletter issue goes to press, we underscore a message that every member of WYNPS is essential, highlighted now to recognize federal botany colleagues. We reprint key points from the March issue earlier this year:

- Wyoming's greatest number of botanists in natural resources are federal employees
- They work for the U.S. Government signifying the third largest employer in Wyoming after mining and tourism, the most widespread in the state
- Plant conservation doesn't happen without people. The federal botanists/ecologists number less than 10 statewide and hold mission-critical positions of state and federal importance

WYNPS is about community, the power of connection, and sharing resources with one another. That remains true today.

Paintings by Mary Vaux Walcott – see article on next page
From: Smithsonian Institution Archives, Accession 92-006, Walcott, Mary Vaux, 1860-1940, North American Wildflowers Prints



Rocky Mountain iris
Iris missiouriensis



Showy prairie gentian
Eustoma exaltatum ssp. *russellianum*

Visit a Smithsonian Native Plant Exhibit Online

-Did you know that John Audubon, premier American painter of birds had a botanical counterpart? The Smithsonian Institution says so. A century later, Mary Vaux Walcott, painted native plants across North America.

An avid traveler and mountain climber, she had a precocious career in art, botany, glaciology and mineralogy. At the urging of botanists and wildflower enthusiasts, a selection of four hundred of her paintings were published in 1925 by the Smithsonian in a five-volume edition titled "North American Wild Flowers". She developed a printing technique that lent to their acclaim. This book has long been out of print and has not had the circulation of Audubon's art, but now the Smithsonian Institution is sharing them with the general public in an onsite and online exhibit: (https://www.si.edu/spotlight/mary-vaux-walcott?page=2).

Plants painted by Walcott appear to be alive, accentuating growth form and depth of field. While diagnostic characteristics are not consistently shown, a sense of each species in the wild is conveyed. The Smithsonian display of her work is currently running for online viewing, a remedy for the onset of plant dormancy around us. *See two of her paintings on the previous page.*

WYOMING NATIVE PLANT SOCIETY MEMBERSHIP FORM

Date _____

Name _____

Address _____

Email _____

Please check all appropriate boxes:

[ ] New member
[ ] Renewing member
[ ] Check here if this an address change
[ ] Annual membership with email notification of newsletters: $10
[ ] Annual membership with mailed newsletters: $12
[ ] Annual membership with scholarship support and email notification of newsletters: $20
[ ] Annual membership with scholarship support and mailed newsletters: $22
[ ] Life membership with email notification of newsletters: $300
[ ] Life membership with mailed newsletters: $300

In addition to the statewide organization, we have two chapters. Membership in chapters is optional; chapter members must also be members of the statewide organization.

[ ] Teton Plants Chapter annual membership: $5
[ ] Sublette Chapter annual membership: $5
[ ] Additional donation of $_____

Total enclosed: _____

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