



Castilleja linariifolia

Castilleja

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ROSES: A TRUE LOVE STORY

(From: <http://www.natureserve.org/>)

Love-struck observers the world over, from poets to naturalists to modern-day pop stars, have long offered up one witticism after another in hopes of capturing the essence of love's most enduring emblem—the rose. But while such adages are as poignant as they are profuse, the biological reality is vastly more complex...

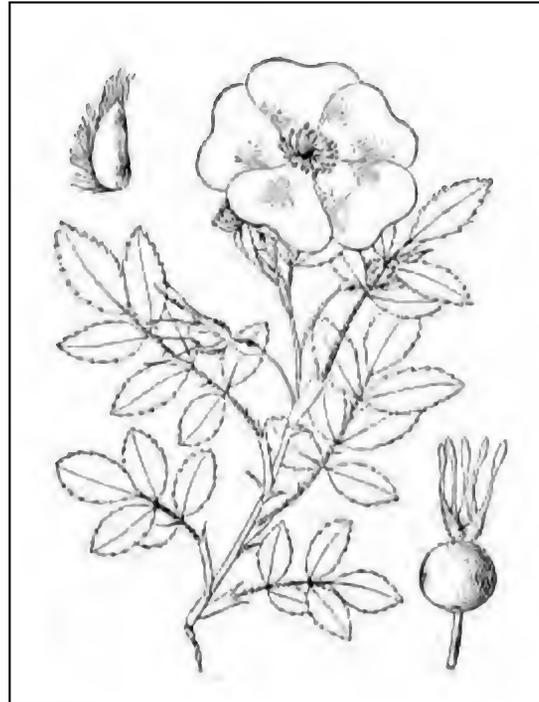
Set aside for a moment the store-bought, carefully cultivated hybrids. Beautiful though they may be, those roses are the biological equivalent of a mass-produced meal. In order to contemplate true rose-ness—"true" in the ecological sense—a brief dig into the botanical taxonomy (<http://www.natureserve.org/> and coming soon to the Flora of North America homepage) unearths some 30 species of the genus *Rosa* populating American and Canadian landscapes.

...Roses—native to the lands they inhabit, play their precious ecological role—[some] that are fragile, and threatened, and in need of conservation. NatureServe ranks the desert rose (*Rosa stellata*) as "vulnerable" in New Mexico and "imperiled" in Arizona.

And then there's the prickly rose (*Rosa acicularis*), a deciduous shrub with pink—and on rare occasion, white—flowers, and hips that are prized for their use in jellies and teas.

The fate of native roses, as with the nation's hundreds of other native plants, has spurred a concerted response from botanists, ecologists, land managers, and plant-lovers who are making an impassioned push to restore our native flora to their rightful place in American landscapes.

Last summer, the White House launched a sweeping initiative to confront the plight of pollinator species, an effort intimately tied to the native plants that fill their habitats. Meanwhile, state agencies all across the country have been finding some success in adding plant species to State Wildlife Action Plans, which are nearing their once-per-decade deadline for update.



Above: Woods' rose (*Rosa woodsii*) is the most widespread native rose in Wyoming. From: USDA-NRCS PLANTS Database; Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and British Possessions. 3 vols. C. Scribner & Sons, New York. Vol. 2: 284.

...Perhaps it was William Cullen Bryant who said it best of all the love-struck scribes, when he penned this verse in 1828:

*Loveliest of lovely things are they
On earth that soonest pass away.
The rose that lives its little hour
Is prized beyond the sculptured flower.*

In this issue:

| | |
|---|---|
| Williams Conservatory: The Tropics of Wyoming | 3 |
| Botanists' Bookshelf: Teaching about Weeds | 4 |
| Growing Native Plants: Desert Gardens | 6 |
| 2015 Annual Meeting Announcement | 8 |
| Are there any threatened plants in Wyoming? | 9 |

WYNPS News

2015 Annual Meeting: Two Sides of the Tetons!

All the information you need to register for the Joint Annual Meeting of Wyoming and Idaho Native Plant Societies, **July 10-13, 2015**, is in this issue and posted on-line through the Idaho Native Plant Society (<http://www.idahonativeplants.org/inps/AnnualMeeting.aspx>) - paying by mail or via Paypal.

Three days of field trips will run on both sides of the Tetons, ranging from easy walks and driving tours to all-day, strenuous hikes, and including chair lift rides for tours of high alpine areas. We have a great evening speaker - Dennis Knight - and this annual meeting event promises great company of people, plants and Teton panoramas.

Our basecamp will be Reunion Flat, a Forest Service group campground in Teton Canyon that has been reserved for the weekend. It can accommodate both RVs and tents. There are numerous other camping options in the canyon. The dinner meeting will be held in Driggs the evening of Saturday, July 11 @ the City Center. Reservations are due by 15 June, but you can help organizers if you reserve on-line or send in YOUR reservation soon!

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

Treasurer's Report: Balance as of 24 Nov 2014:
Scholarship = \$1,818; General = \$5,973.96; Total = \$7,791.96.

The Next Deadline: Please send articles and announcements for the May issue by 15 April. Ideas are welcome any time!

Contributors to this Issue: Ann Boelter, Karen Clause, Robert Dorn, Bonnie Heidel, Kassy Skeen, Amy Taylor and Charlie Vogelheim.

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New Members: Please welcome the following new members to WYNPS: Christopher Beltz, Laramie; Taylor Crow, San Luis Obispo, CA; Mariska Hamstra, Arvada, CO; Kelly Strampe, Green River; Dana Tully, Pinedale.

Message from the President:

Greetings native plant lovers! I am humbled and honored to assume the title of President realizing the great shoes I have to fill from all of those who have walked this path before me. Many thanks to Dorothy Tuthill who has been at the helm for the past 2 years, resulting in partnerships to bring us great programming and hike opportunities. I also want to thank Joan Lucas for her service on the board this past couple years.

Please help me welcome our 2015 Board of Directors for the Society. I would like to give a special thank-you to Ann, who has been our Secretary/Treasurer for 10 years now. She does much of the heavy lifting for the society as business and membership manager and overall voice-of-reason. If there is someone in the Laramie area willing to give her a much deserved break from these duties, please contact Ann.

We have a wonderful web page editor, Brenna Marsicek. Please check out newsletters, website, and Facebook for native plant events throughout the year. We just had our annual scholarship/grant deadline on February 20th, and the joint annual meeting of WY and ID Native Plant Societies that will be co-hosted by the Teton Chapter WYNPS and Sawabi Chapter INPS July 10-13th. Participating in the Annual meeting is a great way to see some new plant communities, learn new plants, and network with fellow native plant enthusiasts.

With all this warm weather, it is easy to believe that spring is right around the corner. I hope that you can find time to go out and enjoy!

Karen Clause, President

WYNPS Board - 2015

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Williams Conservatory: The Tropics of Wyoming

By Kassy Skeen, Williams Conservatory Manager

The Williams Conservatory at the University of Wyoming in Laramie has long been a warm and ever-green oasis for visitors from around the state and for those beyond our state's borders. The Conservatory is tasked with carrying out the three-pronged mission of the University of teaching, research, and outreach. That mission is achieved through direct support of research through coordination of greenhouse space, providing live plants and growing space for undergraduate and graduate classes, and providing outreach activities and education through indoor and outdoor displays, tours, printed materials, and events.



Left: Atrium of the Williams Conservatory, resplendent with tropical plants.

In an effort to broaden the plant collection and to provide more direct links to the Wyoming landscape, the Conservatory staff has begun installation on a Wyoming native plant bed in the amphitheater on the South side of the building. While small in size, this bed will represent 15 species, primarily grasses and forbs. These plants are all being propagated in the Conservatory to be ready to plant later this spring. Permanent interpretive signage will be installed as the bed nears completion to provide self-guided educational opportunities as well as to provide links to other native landscapes on campus, such as the Berry Center displays.

In 2014, Conservatory staff also changed the former outdoor perennial beds to become rotating display beds. The displays in 2014 as well as those for the upcoming 2015 season highlight heirloom agriculture. Staff selected these varieties of popular and not-so-popular garden vegetables from regions with climates quite similar to Laramie and other tough Wyoming climates. The displays are planted to offer ideas on new varieties that grow in difficult climates, but also

offer inspiration on using edible plants in aesthetically pleasing ways, and demonstrate space saving and season lengthening tips. Just a few of this season's selections include strawberry popcorn, the Sub-Arctic Plenty tomato (a 50 day variety!), a huge variety of herbs, old cottage garden flowers, Purple of Sicily cauliflower, root crops, and a colorful selection of greens. These gardens will be on display from June through October, as weather dictates. Conservatory staff will offer tastings as produce matures during tours, events, and open houses during the summer and fall semester. The gardens will be open daily for visitor's to explore on their own as well.



Left: Bromeliads are among the parade of plants featured on-line in the "What's in Bloom" posting. If you can't visit in person, check:

<http://www.uwyo.edu/conservatory/visit.html>

The indoor plant collection in the Conservatory continues to be accessible to the public year-round. There are over 500 species to discover, with more being added each month. This collection focuses on tropical and desert species. The popular carnivorous plants are getting ready to wake from their winter rest and will be highlighted in a small new bog display more accessible to youngsters. Educational signage will also be added inside the Conservatory in the coming months. In an effort to make the collection accessible to people around the state who may not be able to visit, Conservatory staff are in the process of building a plant database with horticultural information, individual plant histories, ethnobotanical uses, and other useful information that will be fully accessible through our new and updated website www.uwyo.edu/conservatory. Throughout the next year, the educational materials that are found throughout the Conservatory will also be accessible to the public through our website.

The Conservatory staff invites you to visit and explore what the collection has to offer. The main atrium is open Mon – Fri, 10 – 4, with some evening events. The amphitheater and outdoor beds are accessible anytime.

Botanist's Bookshelf – two educational books on weeds, reviewed by Charlie Vogelheim

Grant, Tim, ed. 2014. ***Teaching about Invasive Species***. A Green Teacher Publication. Soft cover, 80 pp. Available through <http://greenteacher.com/contact/> or: Green Teacher
PO Box 452, Niagara Falls, NY 14304-0452.
Now \$14.95 + shipping.

Whether a seasoned educator or a greenhorn classroom guest, ***Teaching about Invasive Species*** is an excellent resource for curricula on invasives. Grant has compiled a comprehensive collection of both indoor and outdoor experiences and activities from throughout North America that provide advice and guidance on teaching K-12 students about the rather complex social and ecological issues surrounding invasive species and their control and management. Much of the curriculum is based off the principles of place-based learning and project based learning which not only has been shown to increase student engagement in school but also to increase student engagement in the community.

The book is organized into three main sections. The first section, "Perspectives," has a couple of essays that succinctly and accurately outline the basic ecology and issues of invasive species and provides a fantastic commentary on how best to approach the teaching of invasive species ecology. Rather than anthropomorphizing organisms painting them as black and white good vs. bad characters in a static ecosystem, it encourages the reader to teach to a "deeper ecological understanding" of the processes that allow for there to be invasive species. The second section, "Programs," outlines eleven very different case studies of various educators and organizations that have been successful in an invasive species unit or program. In this section, authors from organizations throughout the US and Canada describe how one can set up a similar experience, as well as learnings, challenges, and successes in running them. The final section, "Activities," describes 10 very specific games, lessons, and art activities one can lead in a shorter amount of time.

Overall the material presented is extremely accessible to educators unfamiliar with the subject as well as those new to education. There is a large variety

of curricula and activities presented, geared toward a wide range of ages (elementary to high school), as well as the integration of science with other subjects. There are even some accounts of how to incorporate invasive ecology with visual and performance art. Most of the activities and programs described are also written in a way that can be adaptable to another ecosystem. There are some minor issues with this resource. Firstly some of the activities and programs described contradict the thesis of one of the "perspective" essays by giving a very anthropomorphized good vs. bad view of invasive species. Secondly, the book could use a succinct synopsis of each program and activity at the beginning of each to make browsing through the book easier.

Despite some minor organizational issues, this book is a fantastic resource, and anyone involved in education on restoration and land management would benefit from having it on their bookshelf. It is packed with excellent activities and experiences that can be easily replicated in most systems. It was challenging for the reviewer to get through this book promptly as he was frequently interrupted with urges to put it down and recommend it to colleagues and peers working in the field of environmental education.

Where do you go for weed information in Wyoming?

The state and county lists of noxious weeds is posted at: <http://www.wyoweed.org/weeds/state-designated-weeds> and the state list is also linked in the PLANTS database.

The Extension Service has a photo guide to weeds posted on-line: <http://www.uwyo.edu/uwe/wyoweed/wyoweed.htm>.

There is also a guide designed to enhance prevention and early detection efforts of weeds not yet widely established in Wyoming: ***Field Guide to Wyoming Weed Watchlist*** by B.A. Meador, T. Collier, S.L. Miller and S. Burnett, eds. 2013. Ext. Serv. Publ. B-1227. It is a 78 publication available on-line at: <http://www.wyomingextension.org/agpubs/pubs/B1227.pdf> and copies can be ordered from Extension Service for \$8.00.



Yellow star thistle, from Meador et al. 2013

Sackett, Karen M. 2014. *Outlaw Weeds of the West*. 48 pp. Paperback. ISBN: 978-0-87842-630-0. Illustrated by Ed Jenne. \$14.00 + shipping.

Karen Sackett attempts to make the subject of invasive plants in the mountain west region relevant for a young audience with this picture book. She uses the regionally appropriate analogy of invasive weeds being “outlaws” and calls for the reader to be a “vigilante” against them. This is a cute comparison that might make this subject a little more approachable and interesting to a young reader but it runs the risk of anthropomorphizing invasive plants, polarizing plants as being either good or bad and jumps over deeper ecological processes at play. Perhaps the author realized this and so has also included a very detailed amount of information on the ecology of invasion. Due to this overwhelming amount of content, this book falls flat in being a useful tool for an elementary educator teaching about invasives.

The book is divided into four sections. The first, “Outlaw Weeds of the West,” defines what makes a noxious weed. The second section, “Bad Plant Behavior,” describes the mechanisms of plants that make noxious weeds particularly successful in the west. The third section, “Border Control,” illustrates ways how people are trying to control noxious weeds. The final section, “Guide to the Most NOT WANTED

Weeds in the West,” is a field guide for identifying ten weeds: Canada Thistle, Common Tansy, Dalmatian Toadflax, Eurasian Waterfowl, Houndstongue, Leafy Spurge, Purple Loosetrife, Spotted Knapweed, St. Johnswort, and Yellow Star thistle.

It is unclear what the intended age group that this book was written for. The silly illustrations and the tone of the writing lead one to believe that it is intended for middle elementary, while there is a very extreme (although accurate) amount of content that is very complex that would be appropriate for an undergraduate textbook. The text is also presented in large blocks that fill up entire pages which appears overwhelming for even an adult to read. Not only the text but the information can be pared down significantly to main points. It would also benefit from incorporating the illustrations and photographs with the text better, which seem to be at odds with each other. Like a good scientific paper, the general themes of a picture book should be evident from the pictures and illustrations, however they seem to be a little contradictory in this book. The illustrations show cartoony plants with monster eyes attacking natives for no reason in a good vs. evil context while the text goes into great depth that invasion is a product of many factors. The best part of the book is the last section, the field guide of major invasives geared for children. It gives brief descriptions of the plants that coincide well with the illustrations.

Sackett and Jenne have a noble attempt in trying to make the sometimes complicated ecology of invasive plants easy to understand but it is by far the sheer amount of content the author tries to pack in the book that makes it fall flat. It does not take enough advantage of the picture book medium. It reads more like a textbook than a picture book and would therefore be most useful for gifted upper elementary students needing to research invasion ecology or as a concise crash-course in invasive plants for adults. This book would only be recommended for use with children for the field guide portion, however, the number of species is limited and it would probably be a better learning experience and more comprehensive to use published regional noxious weed guides.

Charlie Vogelheim is a graduate student with the Science and Math Teaching Center and the Haub School of Environment and Natural Resources at the University of Wyoming pursuing a degree in natural science education.

Growing Native Plants

Part 15. Desert Gardens

By Robert Dorn

Desert gardens are frequently designed to replace water-consuming lawns with plants that do well with only natural precipitation. This garden is also called a xeriscape and requires a dry, well drained site such as a south exposure or a raised area with good drainage. Adding lots of gravel to the soil will help achieve favorable conditions. In addition to the five plant examples that follow, the cacti in Part 14 of this series are suitable for the desert garden. The plants should not be given any supplemental water except during extreme drought or when first getting them established. To see the plants in color, go to the Society website.

Eriogonum ovalifolium, Ovalleaf Buckwheat, grows to 8 inches high and often forms mats to 15 inches across. The leaves are basal, short, and spoon shaped. The flowers are borne in a ball-like cluster at the tip of a stem with many stems per plant. Color ranges from white, cream, or yellow to pink or reddish depending on variety. The flowers appear from May to August depending on elevation. The plants occur naturally on hills, slopes, ridges, and open prairies in the basins, valleys, plains and mountains up to alpine slopes. They can be grown from seed lightly covered to allow some light exposure. It is also in the nursery trade.



Eriogonum ovalifolium, Kane County, Utah

Stanleya pinnata, Desert Princess-plume, grows to 4 feet high and wide with several to many stems per plant. The leaves are to 7 inches long and pinnately compound. The flowers are yellow, to 1 1/4 inches across with yellow stamens often longer than the petals, and scattered along the upper 15 inches or so of the stems in a narrow plume-like inflorescence. They appear from May to July. The plants occur naturally on dry, open hills, often on clay soils or soils containing selenium, in the plains and basins. They can be grown from seed planted about 1/4 inch deep but may take 2 or 3 years to flower. It is also in the nursery trade.



Stanleya pinnata, Mesa County, Colorado

Wyethia scabra (*Scabrethia scabra*), Badlands Wyethia, grows to 2 feet tall and wide and is usually bushy with many flower-bearing branches. The leaves are narrow and to 7 inches long. The flowers are typical sunflower-like with yellow rays and disks, each flower head to 4 inches across, and borne singly at the tips of stems and branches. They appear from May to July. The plants occur naturally in dry, barren places in the basins, especially where sandy. They can be grown from seed sown outdoors in fall or cold stratify for 60 days or more for spring planting. Seed is commercially available.

Xylorhiza glabriuscula, Woody Aster, grows to 1 foot tall and wide with a bushy growth form. The leaves are narrow and to 2.5 inches long. The flowers are typical sunflower-like but with white rays and yellow disks and to 1.5 inches across. They are solitary at the tips of stems and branches and appear from May to July. The plants occur naturally in dry, barren, clay areas of the plains and basins often where the soil contains selenium. It can be grown from seed.



Wyethia scabra, Carbon County, Montana



Xylorhiza glabriuscula, Sweetwater County

Yucca glauca, Spanish Bayonet, grows to 3 feet tall and nearly as wide. The leaves are evergreen and sword-shaped with very sharp tips and arranged in a large basal cluster. The flowers are creamy-white or greenish-white, drooping, to 2 inches long, with many arranged on elongate stems overtopping the leaves. They fully open at night and close during the middle of the day and appear from May to July. The plants occur naturally on dry hills and prairies in the plains and basins. They can be grown from seed. Soaking the seed may help germination. Barely cover with soil to allow some light exposure. Stored seed should be cold stratified for 60 days or more before planting. If started in pots, make sure the pots are very deep and transplant when the plant has 2 or 3 grass-like leaves which may take a full year. The plants put most growth into the root system the first 2 years. Keep moist for that time period. It is also in the nursery trade.



Yucca glauca, Goshen County

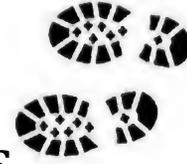
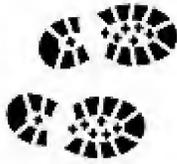
Early Reminder

From: Cheatgrass: The biology of an ongoing invasion. 2014.
By R. Bingham, C. Gasch, R. Jones, J. Kapp and B. Lockard. *Aquilegia* 38(5)26-28.

Here's a take-home message and reminder of the need for early vigilance in local cheatgrass control efforts.

"If you find cheatgrass on your property, I urge you to take immediate measures to eradicate it. A small to medium patch can be easily pulled in the spring or early summer before the seeds mature and while the plants are still green. You probably want to avoid trying to pull the plants in mid to late summer after they begin to senesce, as this will just promote seed dispersal, which is what you want to avoid."

To read the full research article, go to: <http://www.conps.org/News/newsletters.shtml>.



TWO SIDES OF THE TETONS

2015 Annual Meeting of the Idaho and Wyoming Native Plant Societies

This year's annual meeting, July 10-13, is meant to draw from the expertise and resources of the Wyoming and Idaho Native Plant Societies and provide their members with a chance to mingle, socialize, botanize and explore one of the world's most beautiful alpine areas while doing so. There will be numerous field trips, five each day, plus an optional all-day auto tour on Monday. The trips will range from valley riparian areas to high alpine ridges, from easy walks to arduous all-day hikes. Group sizes will be kept as small as possible to maximize the interface with our botany experts.

The same field trips will be offered both Saturday and Sunday. Four of the trips will feature two destinations for the day; the fifth outing will be an all-day hike into a high alpine area. The time spent botanizing on the all day hikes may be limited by the distances to be covered. The Monday all-day auto tour will be along the Flagg Ranch road where it crosses the mountains between Ashton, ID and Flagg Ranch (WY). The USFS has a twenty-person limit on groups entering wilderness areas so if too many people sign up for any one of the outings we may have to do some shuffling around. We will do our best to accommodate everyone and will finalize at the Friday evening get-together.

Note that these mountains make their own weather and summer thunderstorms are common, BE PREPARED! Field trips and other outdoor functions may be modified or cancelled due to weather conditions. Download and make a copy of the plant lists that will be made available on the registration

website. You can register for the meeting no later than June 15 at: <http://idahonativeplants.org/statewide-annual-meeting/> or by mailing in the registration form along with payment. Go to this posting for checklists and trip leader information that will be added.

We have reserved the Reunion Flat Campground Group Camp "C" for Thursday through Sunday nights. The camping fee covers any part of those four nights. You will need to make other arrangements for Monday night if necessary. There are water and pit toilets but no hookups. The campsite will accommodate 34 vehicles. An auto/trailer combo counts as one vehicle. There are additional, reservable campsites in the area through the US Forest Service and dispersed campsites along the canyon. There are a small number of cabins near Driggs that can be reserved at Teton Valley Cabins (208-354-8153), be sure to call (as the website will show no cabins available) and mention you are with the Native Plant Society.

For further information please contact one of the following:

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Are There Any *threatened* Plants in Wyoming?

By Bonnie Heidel,
Wyoming Natural Diversity Database

What comes to mind when you hear “threatened species”? Plant species that are “Threatened” (upper case) are species that are likely to be at the brink of extinction in the foreseeable future throughout their range, as designated under the Endangered Species Act. Plant species that are “threatened” (lower case) have direct or indirect threats to the plants or to their habitat, in some part of their distribution at some level. Information on threats to most plants has been almost non-existent in Wyoming except as a handful of botanists have made observations in conducting species’ studies, sought to relocate previously-documented populations, and tried to make inferences in status reports or Forest Service conservation assessments.

In order to update and fill gaps on current and potential threats, Wyoming Natural Diversity Database (WYNDD) analyzed overlap between energy developments and current distribution of all plants that are recognized by the Bureau of Land Management (BLM) in Wyoming as Special Status Species (USDI 2010), plus all other plants recognized as species of concern in the state that occur on BLM-administered lands (Heidel 2012) using GIS tools. A total of 204 plant species met the criteria. Ten species were removed from consideration that are only known from historical (pre-1970) imprecisely-located records in the state.

The GIS analysis addressed very recent levels of energy development and potential energy developments (projected for 2030) of oil and gas wells and wind turbines, using 1 km zones of influence in decreasing scale radiating out from the feature. The energy development layers were originally compiled for analogous threats analysis by WYNDD zoologists (Keinath et al. 2008) using best available statewide data. In addition, WYNDD botanists used a current coal lease layer and digitized the map of state uranium deposits to represent potential energy developments. The degree of plant distribution overlap with current and potential energy developments, and proximity within a 1 km zone, was used to calculate “exposure level” in the sense of Keinath et al. (2008). To translate quantitative values into qualitative categories for text narrative (high, moderate, low and very low levels) we

identified threshold breaks at 45%, 15%, 5% and 1% exposure, respectively. This means, for example, that species with high current exposure have greater than 45% of their entire known distribution in Wyoming overlapping with current energy development.

Apart from GIS work, we added any species-specific information posted in the fire effects database (<http://www.feis-crs.org/beta/>). We also added available botanists’ observations on survey forms, including those re. livestock utilization or lack thereof, and noxious weed encroachment. Finally, we reviewed recent reports and a set of others for information on threats, using just Wyoming reports except in a few cases when there was reason to believe that an out-of-state report pertained to species threats in Wyoming.

The majority of all 194 plant species (148 species; 76.3%) have little or no exposure to either oil and gas development or wind development at current or projected levels. Fifteen species were found to have high or moderate exposure to oil and gas development at current or projected levels by the methods above, and only one species has even low exposure to wind development, and then only at projected development levels. This GIS analysis provides preliminary results that might be used in considering field priorities to provide firm answers.

The results were also incorporated into new and existing text that will go into future state species abstracts. Meanwhile, the report is posted on-line, including detailed results and text in the appendix, with invitation for comments and for field-based observations. If YOU have any information that pertains to the scope, severity and immediacy of threats in any form – at one location or throughout a species’ range – please send it to WYNDD (c/o bheidel@uwyo.edu).

References

Heidel, B. 2012. Wyoming plant species of concern. Wyoming Natural Diversity Database, Laramie, WY. Includes list, methods and background. Posted on-line at:
http://www.uwyo.edu/wyndd/files/docs/soc-plants/2012_plant_soc.pdf

(Continued, p. 10)

References – continued from p. 9

Heidel, B., M. Andersen and J. Handley. 2014.
Evaluating potential threats to Wyoming
Threatened, Endangered and Sensitive plants.
Wyoming Natural Diversity Database, Laramie, WY.
Posted on-line at:
<http://www.uwyo.edu/wyndd/files/docs/reports/wynddreports/u14hei05wyus.pdf>

Keinath, D.A., M. Kauffman, and G.P. Beauvais. 2008.
Assessment of Wildlife Vulnerability to Energy
Development (AWVED): 2008 Progress Report.
Posted on-line at:
<http://www.uwyo.edu/wyndd/files/docs/reports/wynddreports/u08kei02wyus.pdf>

USDI Bureau of Land Management. 2010. Wyoming
Bureau of Land Management sensitive species
policy and list. Instruction Memorandum No. WY-
2010-027. BLM Wyoming State Office, Cheyenne,
WY. Posted on-line at:
<http://www.blm.gov/style/medialib/blm/wy/resources/efoia/IMs/2010.Par.41285.File.dat/wy2010-027atch2.pdf>

Wyoming Native Plant Society is a non-profit organization established in 1981 to encourage the appreciation and conservation of the native plants and plant communities of Wyoming. The Society promotes education and research through its newsletter, field trips, annual student scholarship and small grants awards. Membership is open to individuals, families, or organizations. To join or renew, please return this form to:

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

Name: _____

Address: _____

Email : _____

Check one: New member Renewing member
 Renewing members, check here if this is an address change
 Check here if you prefer to receive the newsletter electronically

Membership
 WYNPS annual membership: \$10.00
 WYNPS annual membership + scholarship support: \$20.00
(\$10.00 for membership and \$10.00 for Scholarship fund)
 WYNPS Lifetime membership: \$300 (\$150 for membership and \$150 for Scholarship fund)
 Sublette Chapter annual membership: \$5.00
 Teton Chapter annual membership: \$5.00

Total enclosed: _____ THANK YOU!

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

TWO SIDES OF THE TETONS

The Joint Annual Meeting of the Idaho and Wyoming
Native Plant Societies July 10-13, 2015
Registration Form (due no later than June 15)

Name: _____

Name: _____

Address: _____ Phone#: _____

_____ E-Mail: _____

Please print information clearly, if we can't read it we can't register you.

Registration and Fees: The registration fee is \$20 per person and includes participation in any/all parts of the agenda including the Friday potluck, the three days of field trips and the Saturday evening program. The Saturday evening buffet dinner is a separate cost of \$15 per person. If you wish to take advantage of the reserved Reunion Flat Group Camp¹, Site C, (tent or rv, no hookups) the fee is \$15 per vehicle whether for one day or for all four days (Thursday through Sunday, vehicle rate includes auto/trailer combos).

| | | | |
|------------------|-----------------|---|-------|
| Registration Fee | \$20.00 X _____ | = | _____ |
| Dinner | \$15.00 X _____ | = | _____ |

Please list any dietary restrictions/preferences: _____

| | | | |
|------------------------------------|---------|-------------|-------|
| Camping Fee (if using Group Camp): | \$15.00 | | _____ |
| | | Total Fees: | _____ |

You may register online at <http://idahonativeplants.org/statewide-annual-meeting/> or by using this form. If you use this form please make checks payable to "INPS Sawabi Chapter". Mail payment and completed form to:

Idaho Native Plant Society
Sawabi Chapter
933 Bryan Rd.
Pocatello, ID 83201

¹ Reunion Flat Campground is in the Caribou-Targhee National Forest, 9 miles east of Driggs, ID. We reserved a group camping area in advance, so your camping reservation can be made as part of event registration.

See the exciting field trip descriptions, and register for your choices now (below). Some group sizes are limited and we may not be able to accommodate everyone on their first choice. Gathering times and places for field trips will be in the registration packets, available Friday and Saturday evenings.

Saturday Field Trips: WEST SIDE

_____ Grand Targhee (am) and Woods Creek Fen (pm)

_____ Darby Canyon (am) and Horseshoe Canyon (pm)

_____ Table Mountain (all day)

Saturday Field Trips: EAST SIDE

_____ Teton Village Tram (am) and Teton Pass (pm)

_____ Grand Teton National Park driving tour (all day; PARK PASS REQUIRED)

Sunday Field Trips: WEST SIDE

_____ Grand Targhee (am) and Woods Creek Fen (pm)

_____ Darby Canyon (am) and Horseshoe Canyon (pm)

_____ Taylor Mountain (all day)

Sunday Field Trips: EAST SIDE

_____ Teton Village Tram (am) and Teton Pass (pm)

_____ Grand Teton National Park driving tour (all day; PARK PASS REQUIRED)

Monday Field Trip:

_____ Ashton-Flagg Ranch Road Driving Tour (am/ early pm)

Field Trips - TWO SIDES OF THE TETONS

Friday, July 10: 12:00 p.m.

The weekend begins with an informal gathering at Reunion Flat Campground (Group Site C), located in beautiful Teton Canyon of the Caribou-Targhee National Forest. Sign-in and information packet handout will start 12:00PM. Karl Holte, Professor Emeritus, Botany, Idaho State University, will be leading guided plant walks Friday afternoon and early evening in the campground area. There will be a potluck starting at 7:00 PM; bring your own dinner and socialize with old and new friends.

Directions: Reunion Flat Campground is approximately 10 miles east of Driggs, ID. From the intersection with Hwy 33 in Driggs take Ski Hill Rd 4.0 miles to W Alta Ski Hill Rd. Follow W Alta Ski Hill Rd 7.0 miles to Teton Canyon Rd in Alta, WY. Turn right on Teton Canyon Rd. Go approximately 3.4 miles to Group Site C.

Saturday, July 11

Bring a lunch, water, sun protection and insect repellent for all field trips. Good walking/hiking shoes will be necessary and hiking poles should be considered for the more strenuous hikes.

West side of Tetons:

Trip #1:

Grand Targhee Resort: half day: Chairlift ride to the 9,862 ft. summit of Fred's Peak to explore the subalpine/alpine communities. Excellent Teton views. Price of the chairlift ticket is additional and is not included in the registration fee.

Difficulty: Leisurely walk but moderate due to altitude.

Woods Creek Fen: half-day: Tour of Teton Regional Land Trust's 60 acre parcel. Learn about the hydrology, geology and botany of this unique wetland. Home to over 107 plant species including 6 rare plants. Wear shoes/sandals that can get wet.

Difficulty: Easy

Trip #2:

Darby Canyon: Explore the amazing flora of Darby Canyon. Options exist for different destinations. As a group, we will focus on the lower portions of the trail and hike to Wind Cave. The cave is 2.7 miles one-way with 1,800 elevation gain. Participants have the option to return to the trailhead early or continue on to Ice Cave and beyond to the alpine flora of Fossil Mountain. The Wind Cave/Ice Cave area in the Jedediah Smith Wilderness supports incredible plant diversity.

Difficulty: Easy to moderate to strenuous: based on turn-around point.

Horseshoe Canyon: Located in the Big Holes, this option offers an opportunity to see the eastern side of Teton Valley. Active beaver ponds, good bird-watching and wildflower peeping. Depending on the group, we may or may not have time for this field trip after the Darby hike.

Difficulty: Easy.

Trip #3:

Table Mountain Hike: A full day hike to 11,106 feet. Elevation change: approx. 4,100 ft. Distance: 12.8 miles round trip. Classic Teton hike with spectacular views of Tetons and their U-shaped valleys and canyons. Lots of hiking with judicious botanizing. Good hiking boots and poles recommended.

Difficulty: Difficult

East side of Tetons:

Trip #4:

Teton Village Tram: half day: Start the morning with an aerial tram ride at Jackson Hole Mountain Resort. The tram arrives at the top of Rendezvous Mountain, 10,450 feet where we will enjoy the alpine flora. Meet at 9:00 a.m. at JHMR ticket office. Driggs to Teton village: approx. 1 hour. Price of tram ticket is additional and is not included in registration fee.

Difficulty: Moderate due to altitude.

Teton Pass: half day: There will be the option to spend the afternoon exploring Jackson on your own or the chance to see the wildflowers of Teton Pass with naturalist and writer, Susan Marsh. At 12:30, Susan will lead a 2-3 hour hike at some of the best spots along Teton Pass. Come for the first part even if you don't want to hike the entire afternoon.

Difficulty: moderate.

Trip #5:

Grand Teton National Park Driving Tour: Spend the day touring glorious Grand Teton National Park with stops at different habitats, areas of interest, and research sites. Botanist Frances Clark is busy planning a great day for us! We will meet at Stilson Parking lot in Wilson to coordinate a carpool. Allow at least 45 minutes to drive from Driggs, ID to Wilson, WY. Park pass per vehicle required.

Difficulty: Easy

Saturday Evening:

The (optional) Saturday evening buffet starts at 6:30PM for those choosing to participate (the chef has an excellent reputation). The doors will open at 6:00PM. You may bring your own alcoholic beverage(s) but they will not be available for purchase at the Driggs City Center.

The Saturday evening guest speaker will be Dennis Knight, Professor Emeritus, Vegetation Ecology, University of Wyoming. The subject of Dr. Knight's presentation, starting at 7:30PM, will be "The Ecology of Western Wyoming and Eastern Idaho: Twenty Years of Change and New Research," it will be based on the newly released 2nd edition of the book, *Mountains and Plains: The Ecology of Wyoming Landscapes* (Knight et al., 2014).

Sunday, July 12

A repetition of Saturday's trips but Trip #3 will be as follows:

Trip #3: Taylor Mountain Hike (tentative)

Day-long hike to 10,068 feet summit of Taylor Mtn., 7.4 miles round trip with 2,780 ft. elevation gain, impressive views of the area's mountain ranges. Steady pace with limited botanizing. Difficulty: Difficult

Sunday Evening Social: An informal get-together at the Reunion Flat Campground at 6:30PM. Nothing provided except an evening in the Tetons with good company.

Monday, July 13

Ashton-Flagg Ranch Road Driving Tour: This area has some of the best botanizing sites to be found in this part of Idaho and Wyoming. Possible stops could include the fen at Loon Lake and pond lilies and other interesting plants at Indian Lake. Difficulty: Easy