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Native Seed Collection Opportunities 8

Beargrass in the Cowboy State

Among the many species of concern in Wyoming, Western beargrass is one tough plant. Its scientific name, *Xerophyllum tenax* refers to leaf qualities [*Xerophyllum* - "dry leaf"; *tenax* - "strong, tenacious"]. It is not a grass, but in the Bunch-flower Family (Melianthaceae; Dorn 2001), formerly placed in the Lily Famly.

The leaf margins are razor-sharp and sclerified, yet there are reports of bear eating young leaves. Beargrass is used by northwestern tribes in water-proof basketmaking (Musselman 2004).

Beargrass leaves are also used in the commercial florist trade. The species has been impacted by unauthorized commercial collecting of its leaves in the Pacific Northwest.

In Wyoming, Beargrass occurs mainly on national park lands with stringent protection, in areas where there is limited access. The species has few occurrences, and is at the southern limits of its inland distribution. The greatest potential threat to Beargrass at the edge of its distribution may be duff-consuming fire (based on Crane 1990).



Xerophyllum tenax. From: Utech, F.H. 2002. *Xerophyllum*. In: Flora of North America Editorial Committee, eds. 1993+. *Flora of North America North of Mexico*. Vol. 26. Magnoliophyta: Liliales: Liliales and Orchidales. Oxford University Press, New York and Oxford. pp. 71-72.

Do you have information about threats to Wyoming plant species of concern? Information on known or inferred threats are among criteria used to assign state ranks, and are often the hardest factors to assess. BH

References

- Crane, M. F. 1990. *Xerophyllum tenax*. In: Fire Effects Information System, [Online]. U.S. D.A., Forest Service.
- Dorn, R.D. 2001. Vascular Plants of Wyoming, 3rd ed. Mountain West Publishing, Cheyenne, WY.
- Musselman, J. 2004. Luxuriant Beargrass. [Online] Posted at: http://lewis-clark.org/ .

WNPS News

"Make new friends, but keep the old. One is silver and the other's gold !" So goes a simple song sung by Brownies and Cub Scouts, and invoked this time of year by Wyoming Native Plant Society. If you haven't renewed for 2010, please use the enclosed renewal form... thanks!

<u>New Members</u>: Please welcome the following new members to WNPS: Hans Hallman (Laramie) and Daniel Schlaepfer (Laramie).

<u>Treasurer's Report</u>: Balance as of 28 Nov 2009 -General Fund: \$1,688.47; Markow Scholarship Fund: \$1,555.00. Total Funds: \$3243.47.

<u>Contributors to this Issue</u>: Frank Blomquist, Ann Boelter, Emily and Brian Elliott, Bonnie Heidel, Lynn Moore, Adrienne Pilmanis, Amy and Kevin Taylor.



Announcing:

2010 Markow Botany Research Scholarship Applications are due by 20 February 2010.

The 2010 Markow Botany Research scholarship application is now posted on the WNPS homepage at: www.uwyo.edu/wyndd/wnps Printed copies are being posted around the University of Wyoming and all Community Colleges in the state.

This scholarship promotes research on native plants and habitats in Wyoming by graduate or undergraduate students, covering direct study expenses that include supplies or travel. Applicants are asked for study plans that include: Introduction, Methods, Budget summary, References, and Contact information.

Scholarships will be awarded in April, 2010.



Notes from the President

2009 proved to be outstanding for enjoying Wyoming's native plants. It was a fabulous field season in which above-average moisture produced stunning displays of wildflowers over much of the state. The December newsletter is our end of year mailing. Included is the ballot for board elections and three proposed by-laws amendments prepared by the Board for your consideration (see p. 7) – PLEASE vote!

I'm *thrilled* to announce that the 2010 annual field trip will include the Belvoir Ranch in the Cheyenne area! Watch for more details... I hope everyone has a safe and happy holiday season. Please feel free to drop any of the board members including myself an email and we will do what we can to answer your questions or address your comments. Cheers! LM

Invitation

The Idaho Native Plant Society invites Wyoming Native Plant people to the 2010 Idaho meeting, March 23-24, in Idaho State University in Pocatello. The gala 2-day event will highlight regional research. Registration is \$35.00 (before 28 Feb; online at http://www.idahonativeplants.org/).

> Wyoming Native Plant Society P.O. Box 2500 Laramie, WY 82073

WNPS Board – 2009 President: Lynn Moore (Imflora@alluretech.net) Vice-President: Brian Elliott (brianelliott.eec@amail.com)

Sec.-Treasurer: Ann Boelter (amb749@yahoo.com) Board-at-large:

Curtis Haderlie ('08-'09) curtis@silverstar.com Linda Dudinyak ('09-'10) ldudinyak@hotmail.com Newsletter Editor: Bonnie Heidel (bheidel@uwyo.edu) Webmaster: Melanie Arnett (arnett@uwyo.edu)

Teton Chapter: PO Box 6654, Jackson, WY 83002 (Amy Taylor, Treasurer)

Bighorn Native Plant Society: PO Box 21, Big Horn, WY 82833 (Jean Daly, Treasurer)

The next newsletter deadline is 20 February 2010.

This newsletter is printed on 100% post-consumer recycled paper.

Wyoming's Newest Area of Critical Environmental Concern

For the first time in over a decade, the Bureau of Land Managmement (BLM) in Wyoming has designated an Area of Critical Environmental Concern (ACEC) to advance plant conservation. All habitat of Blowout penstemon (*Penstemon haydenii*) on federal lands is now part of the Blowout penstemon ACEC in northeastern Carbon County. It was published for review in the 2007 Federal Register [FR 72(107):31091-31092 of 5 June 2007] and became official when the Rawlins Resource Management Plan (RMP) was signed in late December 2008. A second ACEC for bat conservation became official at the same time.

This is the first time that federal land designations have been used for Threatened or Endangered plant species conservation in Wyoming. The ACEC encircles almost 50 square miles of all known Blowout penstemon distribution in the state, while the species has little more than a quarter square mile of occupied habitat. The species is associated with active blowouts scattered in three separate areas. Designation applies only to federal lands, and does not preclude development but sets sideboards to maintain the habitat and processes that are needed by the species.

Areas of critical environmental concern are areas of BLM-administered lands where special management attention is needed to protect important values. They are proposed during the preparation of the RMP or amendment expressly to protect the important and relevant values on an area from the potential effects of actions permitted by the RMP.

In 2007, members of Wyoming Native Plant Society visited central areas of what is now the ACEC during the 2007 Annual meeting. Summary information on the ACEC can be found in the Rawlins RMP (posted at http://www.blm.gov/rmp/wy/rawlins/documents.html) – in Appendix 22, and information on the species is summarized in the state species abstract (http://www.uwyo.edu/WYNDD/ go to "Plants" then "*Penstemon haydenii*"). FB

Botanical Discoveries in Northwestern Wyoming and Adjacent Montana.

By Emily and Brian Elliott

New sites of Amerorchis rotundifolia (roundleaf orchid) and several species of *Botrychium* (moonworts) were discovered during field work in the summers of 2007 and 2008. One population of Botrychium ascendens (upswept moonwort) was located in Wyoming, but seven locations and ten species were found in adjacent Montana. One new Amerorchis rotundifolia was discovered in Wyoming. These sites were discovered as part of a Master's project with Dr. Ron Hartman at the University of Wyoming. The project is a floristic survey of the Absaroka, Beartooth, and Gallatin ranges, and surrounding areas (ca. 5,500 square miles) in southwestern Montana and adjacent Wyoming. Approximately 14,000 collections were made in the summers of 2007–2008. Identification of these vouchers is ongoing.

A new population of *Amerorchis rotundifolia* (roundleaf orchid) was discovered in 2008. Several hundred plants were found in full bloom growing in a wet spruce forest. The site is well off the beaten path and appeared undisturbed. Like the other Wyoming populations, this one is located in the Clark's Fork Valley of Park County. Primarily a boreal species, *Amerorchis* *rotundifolia* ranges from Greenland to Alaska. It is known from northwestern Montana and is considered disjunct in Wyoming where it is at the southern edge of its distribution and is quite uncommon. It was previously known from two sites in Park County with a population size of approximately 400–500 individuals. Although no census was performed at the time, the new population may nearly double the known population size in Wyoming.

Members of the genus *Botrychium* are primitive ferns of the family Ophioglossaceae. The genus is split into three subgenera: Botrychium (the moonworts), Sceptridium (the grape ferns), and Osmundopteris (the rattlesnake ferns). Moonworts are generally diminutive (1-6 inches tall) and difficult to locate in the field. Since the Botrychium treatment came out in the Flora of North America (Wagner and Wagner 1993) there has been keen interest generated in the genus among Rocky Mountain botanists, fueled by workshops conducted by the Wagners and more recently by Dr. Don Farrar, noted moonwort expert from the University of Iowa who studied under W. Wagner. Unfortunately, not all parts of Wyoming and Montana have received as much attention. Southcentral Montana, in particular is considered "unknown territory" with respect to moonworts according to Farrar. (Cont. p. 4, next page)

Continued from p. 3

During our first year of field work we were unable to locate any moonworts, a major disappointment. In 2008, however, we located a total of eight new populations. Most of these sites were located in late August and early September at the end of our field study. A total of ten species of *Botrychium* were documented at eight new sites during 2008. These collections are summarized in the following table.

New records in northwestern Wyoming and adjacent Montana

State County Identification Comments WY Park Botrychium ascendens 6,600 feet. Under willow near beaver pond. MT Carbon Botrychium lunaria 8,450 feet. Riparian meadow. MT 8,450 feet. Riparian Carbon Botrychium minganense meadow. MT Carbon Botrychium minganense 8,450 feet. Riparian meadow. MT Carbon Botrychium minganense 8,450 feet. Riparian meadow. MT Sweet Botrychium hesperium 9,780 feet. Vegetated talus at alpine near treeline. Grass MT 9,780 feet. Vegetated talus Sweet Botrychium hesperium Grass at alpine near treeline. MT Sweet 9,780 feet. Vegetated talus Botrychium ascendens at alpine near treeline. Grass MT 10,520 feet. This plant was Park Botrychium lanceolatum var. lanceolatum found in a soil pocket amongst talus at alpine. MT Park Botrychium 7,000 feet. Moist, mossy gallicomontanum roadside. MT 7,000 feet. Moist, mossy Park Botrychium crenulatum roadside. MT Sweet Botrychium paradoxum 9,640 feet. Vegetated talus Grass slope. MT Sweet Botrychium hesperium 9,640 feet. Vegetated talus Grass slope. MT Sweet Botrychium lanceolatum 9,640 feet. Vegetated talus Grass var. lanceolatum slope. MT Park Botrychium pinnatum 8,500 feet. Subalpine rivulet below talus slope. MT Park Botrvchium minganense 9,400 feet. Vegetated talus (and also possibly B. slope. spathulatum) MT Botrychium simplex 9,520 feet. Riparian Sweet Grass meadow.

Only one *Botrychium* population and one species (*Botrychium ascendens*) was discovered in Wyoming while seven populations and ten species were located in Montana. This is not surprising as most of the study area was located in Montana. However, the proximity of these localities in southcentral Montana indicate the potential for additional populations in Wyoming. Three

species, *B. gallicomontanum*, *B. hesperium*, and *B. spathulatum* are not currently known from Wyoming.

All but three of the ten moonwort discoveries (*B. lanceolatum, B. lunaria,* and *B. pinnatifida*) are notable as the first collections from the Beartooth-Absaroka Mountains and range extensions of 100-200+ miles from nearest records in Montana (Montana Natural Heritage Program 2009, Montana Rare Plant Field Guide 2009, University of Montana 2009). They are range extensions of 20-100+ miles from nearest records in Wyoming

(WYNDD 2009). Populations of B. gallicomontanum and B. spathulatum (if verified by electrophoresis) will represent significant range extensions. The discovery of *Botrychium paradoxum* represents a minor range extension of over 100 miles. Paradox moonwort is difficult to identify, so fresh plant material was sent to Dr. Don Farrar at Iowa State University, who verified the vouchers as *B. paradoxum* using eletctrophoresis. The location of several species at alpine was also interesting as only a few alpine sites are known in western North America. Finally, most of the species listed above are quite uncommon in Wyoming, with Botrychium ascendens, B. lanceolatum, B. minganense, and B. paradoxum all ranked as S1. Their discovery in southcentral Montana indicates that additional populations could be expected in Park County of northwestern Wvomina.

<u>References</u>

Montana Natural Heritage Program 2009. Montana Rare Plant Field Guide. http://fieldguide.mt.gov/.

University of Montana Herbarium Database. 2009. H http//herbarium.dbs.umt.edu/

Wagner, W.H., Jr. and F.S. Wagner. 1993. Ophioglossaceae. In: Flora of North

America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. Vol. 2. Pteridophytes and Gymnosperms. Oxford University Press, New York and Oxford. pp. 85-106.

Wyoming Natural Diversity Database. 2009. Unpublished data.

Botanist's Bookshelf

The Trail to Table Mountain: A location based guide to 186 plants found in the Teton/ Yellowstone region. Written and Illustrated by Kelley Coburn. 2009. Black Timber Press, Victor, ID. 246 pages.

Review by Amy Taylor

Rare is a plant guide that begs to be read from cover to cover. Most serve the purpose of reference or field identification of plants. "*The Trail to Table Mountain: A location based guide to 186 plants found in the Teton/Yellowstone region* "delights the armchair botanist while also providing a place-based method of plant identification.

That place is Table Mountain, rising to 11,106 feet on the west side of the Teton Range in NW Wyoming. Author Kelley Coburn introduces each plant species in the context of where it is encountered in diverse habitats along the 6.5 mile trail to the summit. The book's ten chapters each represent a trail segment. A map of each segment includes names of plants and natural features useful for identification. There is no need for laborious dichotomous keys or glossy color photos. Other field guides serve that purpose.

Although the guide is specific to Table Mountain, most of the 186 plant species featured are commonly found throughout the Greater Yellowstone Ecosystem and Rocky Mountain West. Each plant is listed by common and scientific name and accompanied by Coburn's lovely black-and-white illustrations (over 250 in total). The guide reads like a novel. Plant descriptions are a combination of well-researched natural history information and Coburn's personal observations and stories – the crown jewel of the book. His intimacy with the trail and its inhabitants is evident in his rich and clever descriptions. You'll find yourself smiling often.

In addition to the flora and fauna, Coburn knows the trail to Table Mountain better than probably anyone. He has hiked the trail countless times and summited in every month of the calendar year. He's penned many poems, several of which are included in his book, that were inspired by his time on Table Rock (local's name for Table Mountain). Coburn grew up in Teton Valley, Idaho and has spent over 50 years exploring the Tetons. His monikers could include: former sheepherder, pharmacist, family-man, enthusiastic Teton Chapter-WNPS member, story-teller, poet laureate and Lorax of Table Mountain, and above all a one-of-a-kind naturalist.



To see if it did shake And came face to face with a wee beast That caused me heart to quake

Use this guide as you like: for reference or for pure reading enjoyment. Cozy up this winter with the guide and a cup of wildflower tea. Or make the trek to Table Mountain next summer, guide book in hand, to learn the plants Kelley Coburn-style.

The book is paperback, available for \$24.95 (\$19.95 + 5.00 shipping, tax included) made payable to Black Timber Press Send to Black Timber Press, 4915 South 2000 East, Victor, ID 83455. Book will be signed by Kelley Coburn. The author can be reached at kelleycoburn@gmail.com .

(*Amy Taylor is a botanist living in Jackson Hole. She is actively involved with the Teton Chapter of the Wyoming Native Plant Society.*)

Botanist's Bookshelf Handbook of Edible and Poisonous Plants of Western North America, By Brian Elliott. 2009.

Review by Kevin Taylor

In mid-September, a friend and I headed into the Bridger-Teton National Forest of northwest Wyoming for a four-day backpack trip. This was no ordinary backpack trip. Hunting and gathering our way across the landscape, we elected to leave food, tent, sleeping bags, and matches behind.

Flint and steel was our fire-making style of choice, and a wool blanket each was our bedding. My travel companion shouldered his rifle in case a deer presented herself, while I brought a shotgun for grouse and squirrels. Animal meat provides good calories and nutrition on such an adventure, but plant food is distributed in a much more reliable fashion. On primitive journeys, the decisions of which edible plant guides to bring, if any at all, is always a dilemma. This year, the decision got easy thanks to Brian Elliott's recently published *Handbook of Edible and Poisonous Plants of Western North America*.

Brian Elliott is a graduate of University of Wyoming's floristics masters program, works as a botany consultant, and is extremely committed to plant taxonomy and conservation. *Handbook of Edible and Poisonous Plants of Western North America* is a literature review of edible and poisonous plants with over 1000 entries. Brian poured through more than 190 field guides, technical floras, and journal articles to compile a synthesis of the known literature of the listed plant species. For each plant species, the author includes preparation suggestions, habitat information, and distribution in the West. The book is meant to be used as a complement to a plant identification manual. Photos and line drawings were purposely omitted in the interest of keeping the text to a reasonable size (364 pages) for slipping into a backpack. It is also the author's approach that line drawings or photographs shouldn't be used in isolation to identify plants that one intends to eat, but rather the use of floras, herbaria (dried plant collections), and consultation with expert botanists are a more prudent and safe way to pursue edible plant study. However, the book does include dichotomous keys in the text to distinguish edible species from potentially toxic look-alikes, serving as a final check that an identification using a local or regional flora is correct.

Instead of debating over which of the 7 edible plant field guides on my book shelf to bring along on our trip, I only needed to bring *Handbook of Edible and Poisonous Plants of Western North America*. It includes the edible and poisonous plant information from all of my guides of western edible plants. It is a field guide for many levels of foraging experience, having a more complete list of Western North American edible and poisonous plant species than I've seen, while including common names and amateur-friendly explanations. I thank you Brian for this amazing labor of love.

To obtain a copy of *Handbook of Edible and Poisonous Plants of Western North America,* for \$24.95 (paperback not including tax or shipping), go to Brian Elliott's website at www.elliottconsultingusa.com/Brian.htm, and click on the title. It is published by Elliott Environmental Consulting, LLC. Laramie, WY. The book can also be purchased through Amazon.com. Brian will be presenting a talk and a book signing at the Denver Botanical Gardens' Science and Art series, Café Botanique, on Thursday, Jan. 28th starting at 6:30pm. Brian can be reached via email at brianelliott.eec@gmail.com.

(*Kevin Taylor has a masters degree from University of Wyoming's botany floristics program, and is currently an outdoor educator with Teton Science Schools in Jackson Hole, Wyoming.*)

Candidate Biographic Sketches - 2010

Ann Boelter is a naturalist who is in the running as one of the most well-traveled Board members. She has overseen membership and financial records and is graciously running for another term as Secretary-Treasurer in 2010.

Brian Elliott has had a life-long interest in botany and ethnobotany, as reflected in his first book (see above) and other professional pursuits (see article, p. 3).

Lynn Moore is pursuing her doctoral degree at University of Wyoming, researching grassland phenology. For fun, she likes to ride horses, gather cows on the family ranch, ski, cook, garden, and spend time with her family and dogs.

Eve Warren earned her PhD from Texas Tech University in Range Science, and her MS in Conservation Biology and BS in Wildlife Management from Utah State University. She taught plant systematics and ecology as an assistant professor, conducts research at the BLM Worland Field Office, and is a farmers market grower.

Wyoming Native Plant Society - 2010 Membership Renewal

Name:	\$ 7.50 Regular Membership
Address:	\$15.00 Scholarship-supporting Membership - \$7.50 goes to the annual WNPS Markow Scholarship Fund
Email address (optional)	
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2010 Ballot - Please vote for one person for each office (see biographic sketches on prior page):

President	Lynn Moore (Casper)	Secretary/Treasurer	Ann Boelter (Laramie)
Vice President Write-in candidate ar	Brian Elliott (Laramie) nd office:	Board (2-year term)	Eve Warren (Worland)

[The fifth Board position is held by Linda Dudinyak (Jackson), serving her second year of a two-year term.]

Proposed By-Laws Amendments – Please vote on the three potential amendments, and sign below:

Proposed Amendment No. 1. ARTICLE THREE. Section 2. The membership by two-thirds vote may determine from time to time the amount of initiation fees and dues. Annual individual dues shall be \$7.50 for membership, and \$15 for scholarship-supporting membership (of which \$7.50 is allocated to the scholarship fund). Life membership shall be \$200 (of which \$50 is allocated to the scholarship fund). Dues shall be payable at the start of the calendar year. Members who fail to pay their dues or assessments within thirty days from the time when they become due shall be notified by the Secretary-Treasurer or Vice **President**, and if payment is not made within the next succeeding thirty days six months, they shall be dropped from the rolls of membership. In addition, members failing to pay their dues at or before the annual meeting shall not be eligible to vote in said meeting.

____ For Proposed Amendment No. 1 ____ Against Proposed Amendment No. 1 Comment: *Creating a lifetime membership category fee of \$200 with \$50 going to the Markow scholarship fund.*

<u>Proposed Amendment No. 2.</u> ARTICLE FIVE. Section 2. Meetings, **conference calls, and e-mail votes** of the Board of Directors may be called by the President or any three members of the Board whenever a need for a meeting **Board action** arises. Meetings shall be open to the entire membership. **All Board actions will be reported in the newsletter**.

____ For Proposed Amendment No. 2 _____ Against Proposed Amendment No. 2 Comment: *Enabling the board to conduct business by conference calls and emails in addition to meetings.*

<u>Proposed Amendment No. 3.</u> ARTICLE SEVEN. Section 1. All checks, drafts, or other orders for the payment of money or other evidences of indebtedness issued in the name of the Society shall be signed by two of the officers of the Society or Board-appointed members delegated with check-signing authority on file at the Bank. All expenditures of \$50 or more per item including scholarship awards but excluding routine newsletter expenses shall first be approved by a majority vote of the membership Board.

For Proposed Amendment No. 3	Against Proposed Amendment No. 3
Comment: Assigning the Board financial of	versight of expenses exceeding \$50, and exempting routine expenditures of
printing and mailing from the approval req	uirement.

SIGNATURE _____

Announcement

Native Seed collection opportunities (Intern and Contract) with Wyoming BLM in 2010

The Wyoming Bureau of Land Management has funding and opportunities for Intern and contractor assistance with their Native Plant Materials Development Program (http://www.blm.gov/wy/st/en/programs/plant con servation.html). One aspect of this program is collection of seeds of native species, focusing on all local genotypes, but also emphasizing species suitable for use in reclamation and restoration (e.g. of sage grouse habitat). To accomplish this work, WY BLM partners with the "Seeds of Success" program (http://www.nps.gov/plants/sos/) and the Chicago Botanic Garden's Conservation Land Management Intern program (http://www.chicagobotanic.org/internship/CLM) WY BLM will hire up to eight Interns for the 2010 field season and will also offer seed collecting contracts through http://www.grants.gov/ .

Inquiries may be directed to Adrienne Pilmanis at 307-775-6035 or Adrienne_Pilmanis@blm.gov . AP **Wyoming Native Plant Society** is a non-profit organization established in 1981, dedicated to encouraging the appreciation and conservation of the native flora and plant communities of Wyoming. The Society promotes education and research on native plants of the state through its newsletter, field trips, and annual student scholarship award. Membership is open to individuals, families, or organizations. To join or renew, return this form to:

> Wyoming Native Plant Society P.O. Box 2500, Laramie, WY 82073

Name: ______
Address: ______

Email: ____

____ \$7.50 Regular Membership ____ \$15.00 Scholarship Supporting Member

(\$7.50 goes to the Markow Scholarship Fund)

Check one:

____New member ____Renewing member

___Renewing members, check here if this is an address change.

Wyoming Native Plant Society P.O. Box 2500 Laramie, WY 82073