

# WYOMING'S

## *Threatened and Endangered Plant Species*



Blowout Penstemon

Bureau of Land Management



## BLOWOUT PENSTEMON

One of Wyoming's rarest native plants, blowout penstemon (*Penstemon haydenii*), only recently earned its rightful recognition. This striking perennial herb was first discovered in Wyoming in 1877 by botanist and explorer Ferdinand Hayden while exploring prominent sand dunes between Casper and Rawlins. Not until 1996, when a U.S. Bureau of Land Management (BLM) botanist stumbled upon a supposedly unknown species, was the blowout penstemon rediscovered as a verified member of Wyoming's flora.

Blowout penstemon was first discovered in Nebraska, where it was known in large numbers through 1914. By the 1940s, they had decreased dramatically. Numbers of the plant were so low that the next observed blowout penstemon was not reported there until 1959. The species was designated as endangered under the Endangered Species Act of 1973 by the U.S. Fish and Wildlife Service on September 1, 1987.

Because of its rarity and federal endangered status, Wyoming botanists have been researching the distribution, abundance, and trends of blowout penstemon statewide. Today, several thousand individual plants make up the three Wyoming populations in the northeastern corner of the Great Divide Basin in Carbon County, near the Ferris and Seminoe Mountains (*see map*).

Blowout penstemon photographs by Bonnie Heidel

## DESCRIPTION

Blowout penstemon is one of 41 Wyoming penstemon species which are characterized by tubular, two-lipped flowers and a fifth, sterile stamen that is often covered in yellow hairs. This unique feature gives the *Penstemon* genus its alternative common name: 'beardtongue.' The blue or purple pale flowers of blowout penstemon are 1 to 1½ inch long, arranged in clusters around a tall flowering stem and produce a faint, vanilla-like scent.

When not in flower, blowout penstemon may be confused with other penstemons, particularly those in sandy habitats. Large-flower penstemon (*Penstemon grandiflorus*) is found in the northeast corner of the state and has slightly larger, non-aromatic flowers. Narrowleaf penstemon (*P. angustifolius*)—found throughout much of eastern Wyoming—has smaller flowers.

## LIFE HISTORY

Blowout penstemon is a pioneer species, one of the first plants to establish itself, on sand dunes and sandy aprons at the base of mountains and ridges. In Wyoming it blooms in June and awaits pollination by insects: twenty-six species of solitary bees and one bee-like wasp visit this plant in Wyoming, seeking both nectar and pollen rewards. Once pollinated, the flowers ripen into capsule-like fruits,

each containing twenty to thirty seeds. By the end of the summer when the seeds have matured, the capsules split open and release the seeds into the wind. Buried seeds remain viable and will only germinate after an ideally cool, moist spring. Once a plant germinates, it can live for several years, but may not flower each year.



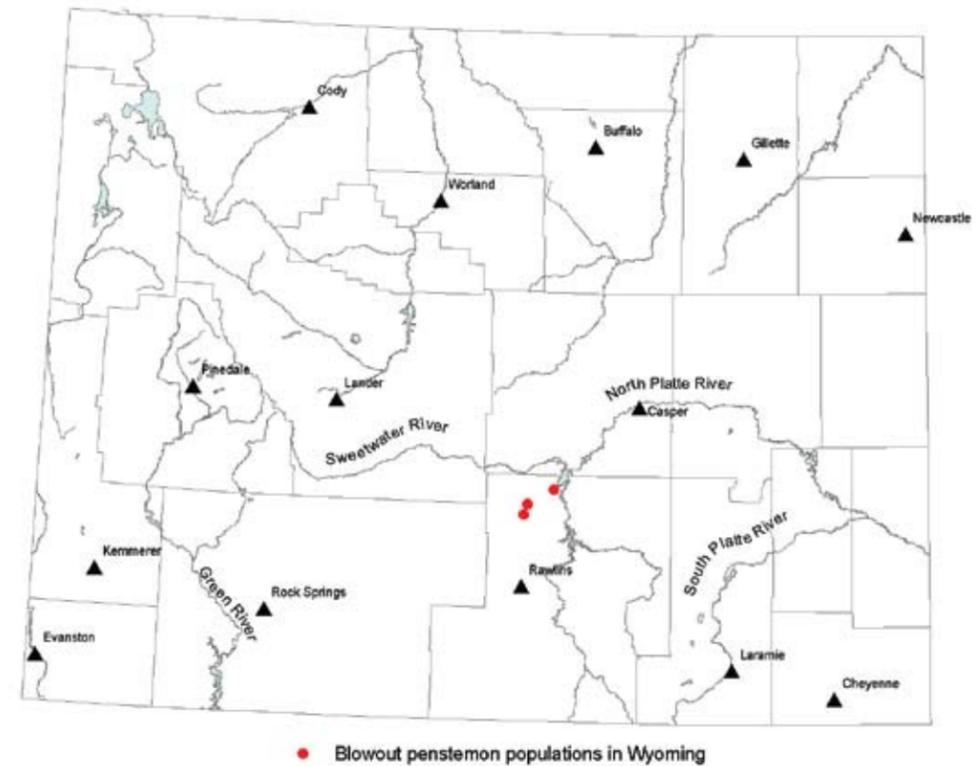
Blowout penstemon illustration by Bellamy Parks Jansen. Reprinted with permission of Jim Stubbendieck

## HABITAT

In Wyoming, blowout penstemon is found in sparsely vegetated sandy blowouts in the early stages of plant community development composed of blowout grass (*Redfieldia flexuosa*), lemon scurf-pea (*Psoralidium lanceolatum*), and thickspike wheatgrass (*Elymus lanceolatus*) or Indian ricegrass (*Achnatherum hymenoides*). Shifting sand dunes are prevented from becoming fully stabilized and overgrown because of wind and gravity. The dunes may be 60 to 120 feet high on typically steep slopes at elevations between 5800 and 7500 feet. The absence of blowout penstemon from other active blowouts and gently undulating sand dune fields found in central and eastern Wyoming is likely due to a lack of soil moisture during the growing season and the stage in development of local plant communities.

## CONSERVATION

The Endangered Species Act defines an *endangered* species as one in danger of becoming extinct throughout all or a significant portion of its range. Federal law prohibits the removal or destruction of endangered plants on any federal land or as a result of federal actions. As a federally listed endangered species, blowout penstemon receives this statutory protection and protection under BLM Special Status Species management policy.



The Wyoming BLM is developing a blowout penstemon conservation strategy in coordination with local, state, and federal agencies, as well as private landowners, to apply federal statutes and agency policy in a way that addresses the conservation needs of this plant. The goal is to foster long term viability of the blowout penstemon and avert potential threats that include oil, gas, powerline, and water development, sand mining, off-road vehicle use, live-stock grazing, wind farms and plant collection.

The BLM recognizes that both plant conservation and protection are essential to sustain ecological, economic, and aesthetic values of our public lands. The BLM, in partnership with local, state, and federal agencies, works to achieve its multiple-use mandate of public land management. For two decades, the BLM has worked

with the Wyoming Natural Diversity Database (WYNDD) and the Rocky Mountain Herbarium at the University of Wyoming to survey, monitor, and research native plant species in order to maintain Wyoming's native plants and their habitats.

Repeated monitoring of Wyoming blowout penstemon populations during dry years (2003-06) suggests that this plant can survive drought. While the plant's habitat is continuously being eroded by wind or buried by shifting sand, new habitat is developing. Additionally, long-lived seeds may provide an important buffer from the uncertainties of unstable habitat and unsuitable climatic conditions. Research and monitoring are filling in the status picture necessary to ensure the long-term viability of blowout penstemon populations in Wyoming.

## Suggested Reading

- Fertig, W. 1999. Blowout penstemon, Wyoming's first Endangered plant. *Castilleja* 18(3): 4.
- Fritz, M., J. Stubbendieck, and W. Jobman. 1992. Blowout penstemon (*Penstemon haydenii* S. Wats.) recovery plan. U.S. Fish and Wildlife Service, Denver.
- Heidel, B. 2005a. Survey of *Penstemon haydenii* (blowout penstemon) in Wyoming. Prepared for the Bureau of Land Management. Wyoming Natural Diversity Database, Laramie, WY.
- Heidel, B. 2005b. Child of the wind. Wyoming Wildlife 69: 8-11.
- Stubbendieck, J., J.A. Lamphere and J.B. Fitzgerald. 1997. Nebraska's Threatened and Endangered Species: Blowout Penstemon. Nebraska Game and Parks Commission brochure, published with support of Nebraska Dept. of Agriculture. Lincoln, NE.



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Note: New data on the biology and status of this species are being collected constantly, and parts of the information in this publication may become outdated. The fact sheet provides a general overview of the status of this species in Wyoming and is not intended as the sole source of species information for planning and research purposes. For additional information on this or other threatened and endangered species, or for additional copies of the publication, refer to the suggested readings or contact the botany contacts of the Bureau of Land Management in Wyoming, U.S. Fish and Wildlife Service in Wyoming, and the Wyoming Natural Diversity Database.

This Blowout Penstemon fact sheet is one in a series on Wyoming's Threatened and Endangered Plant Species published by Bureau of Land Management and the Wyoming Natural Diversity Database.

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