

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Erigeron basalticus

COMMON NAME: Basalt daisy

LEAD REGION: Region 1

INFORMATION CURRENT AS OF: February 2003

STATUS/ACTION (Check all that apply):

New candidate

Continuing candidate

Non-petitioned

Petitioned - Date petition received: ____

90-day positive - FR date: ____

12-month warranted but precluded - FR date: ____

Is the petition requesting a reclassification of a listed species?

Listing priority change

Former LP: ____

New LP: ____

Latest date species first became Candidate: October 25, 1999

Candidate removal: Former LP: ____ (Check only one reason)

A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

F - Range is no longer a U.S. territory.

I - Insufficient information on biological vulnerability and threats to support listing.

M - Taxon mistakenly included in past notice of review.

N - Taxon may not meet the Act's definition of Species.

X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Asteraceae (Sunflower family)

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Washington

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE:

Washington, Yakima and Kittitas counties

LEAD REGION CONTACT (Name, phone number): Scott McCarthy (503) 231-6210.

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Tim McCracken,
Wenatchee Field Office, Wenatchee, Washington (509) 665-3505.

BIOLOGICAL INFORMATION:

Erigeron basalticus is a perennial plant that grows in crevices in basalt cliffs on canyon walls, at elevations between 380 to 460 meters (1,250 to 1,500 feet). The species is limited to the Yakima River Canyon and the canyon of a tributary, Selah Creek, an area of approximately 52 square kilometers (20 square miles) in northern Yakima and southern Kittitas counties, Washington. The population is distributed among eight, potentially interbreeding occurrences or subpopulations. Extensive searches in similar habitat nearby have failed to reveal additional occurrences of the species. However, the upper reaches of some of the cliffs in the canyons have not been thoroughly inventoried, and there may be additional occurrences of the species in these relatively inaccessible locations (Gamon 1998).

Erigeron basalticus is found within microsites that are largely devoid of other vegetation, and which are undergoing primary succession. In addition, there are few other species using nearby cliffs and outcrops. Total vegetative cover in these areas is about one percent. As the most abundant vascular plant present, this species may be important for insects and other fauna inhabiting the area, potentially serving as both cover and forage (Gamon 1998).

Very little is known about the life history of Erigeron basalticus, although the seeds are adapted for wind dispersal which is probably augmented by rainfall washing the seeds downslope. The species is presumably dependent upon insects for pollination. There is no evidence of reproduction other than by seed. Erigeron basalticus grows in crevices with virtually no soil and its roots may contribute to fracturing of the basalt around the crevices. The species likely contributes to soil formation at these sites (Gamon 1998).

The species was first collected in 1942, and first described in 1944. The size of the population in the 1940s is unknown. Approximately 7,000 plants currently exist, with 8 occurrences occupying about 67 hectares (ha) (165 acres (ac)), within an area of about 16 x 3 kilometers (10 x 2 miles). The overall population size, both in number of individuals and total area occupied, has changed little between the status survey of 1988 and the 1998 review. However, individual numbers in four of the eight occurrences, the smallest subpopulations, have decreased substantially and two areas now support fewer than 20 plants each (Table 1). The size of the subpopulations prior to 1988 is also not known (Gamon 1998).

Whether these declines are a recent development or represent a continuous downward trend since before the 1988 status review is not known, nor are the causes of the declines apparent. There is no visible alteration of the physical habitat. Of the declining subpopulations, only site 8 contains young and immature plants, as do the larger, apparently more stable subpopulations, indicating successful reproduction is occurring in these areas. The declines may result from lack of successful recruitment, possibly resulting from insufficient pollination. Pesticides used in nearby agricultural fields may impact the species necessary for pollination. Other possible causes for the declines may involve direct impacts from herbicide drift originating on nearby agricultural fields and/or maintenance activities on nearby highway/railroad rights-of-way (Gamon 1998).

Table 1. Occurrences of Erigeron basalticus and change in subpopulation status between 1988 and 1998, and land ownership. Numbers and hectares (acres) estimated (Gamon 1988, 1998).

Site	Area Occupied	Number Present, 1988	Number Present, 1998	Percent Decrease	Land Ownership ^a
1	20-24 ha (50-60 ac)	5000	5000	None	1) WDNR 2) Private 3) YTC 4) WDOT
2	24 ha (60 ac)	Hundreds	Hundreds	Some, erosion in one area	1) BLM 2) Private 3) WDOT
3 ^b	4 ha (10 ac)	175-200	100	40-50	1) BLM 2) BNSF RR
4	2 ha (6 ac)	150-600	Thousands or 120-600 ^c	None	Private
5	<2 ha (5 ac)	100-500	100-500	None	1) WDFW 2) BNSF RR
6	0.4 ha (1 ac)	62 ^d	15 ^d	76	WDFW
7	0.4 ha (1 ac)	100	12 ^d	88	Private
8	8 ha (20 ac)	250	<100	60	1) BLM 2) Private

^a/ BLM: U.S. Bureau of Land Management
 BNSF RR: Burlington Northern Santa Fe Railroad
 WDFW: Washington Department of Fish and Wildlife
 WDNR: Washinton Department of Natural Resources
 YTC: US Army, Yakima Training Center

^b/ ACEC: Area of Critical Environmental Concern

^c/ Contradictory estimates given in status review: AThousands, @but a density of 20-100 plants per acre, in 2 ha (6 ac).

^d/ counted

THREATS:

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

A State highway, an interstate highway, and railway have been constructed through habitat occupied by this species. Parts of these right-of-ways are adjacent to, or cross through, areas occupied by the species (Gamon 1998). Maintenance, major improvement, or expansion of these transportation corridors may damage or destroy individual plants or their habitat. The State highway is now a secondary scenic route with little potential for expansion or major improvement (J. Mitchell, Yakima County Department of Roads, pers. comm., 1999). Maintenance of the railroad right-of-way (herbicide spraying for vegetation control, rock exclusion fences, etc.) may damage or destroy individual plants and/or their habitat.

Basalt has been quarried at two locations where the species occurs, and at various other locations along Yakima Canyon (Gamon 1998). Additional quarrying or expansion of existing quarries in the vicinity of the subpopulations could threaten the species. Stone from local quarries may be used to stabilize and repair slides along SR 821. Currently, the county road department typically gets its gravel from mining operations along the Selah River (J. Mitchell, pers. comm., 1999). There is little development now occurring along Yakima Canyon, however, future development along the Yakima River could result in additional quarrying and lead to general degradation of the species= habitat (increase in exotic weeds, habitat conversions, etc.).

B. Overutilization for commercial, recreational, scientific, or educational purposes.

There is no evidence that overutilization of Erigeron basalticus for commercial, scientific, or educational purposes exists. However, incidental destruction of the plant may be associated with recreational use of the Yakima Canyon by boaters that stop to picnic and camp along the river. Recreational boat use of the Yakima River has increased dramatically in recent years, with up to 500,000 visitors annually (Camp 1997). Erigeron basalticus is attractive while in bloom and may be picked by recreational users or collected by rock gardeners. One subpopulation is easily accessible from Interstate 82. Damage by rock climbers is also a potential threat in some areas where there are formations that may attract recreational climbing.

In August, 2002, partial seed-heads from approximately 50 plants were collected from site 2 for scientific study and long term storage in the seed bank program at the Center for Urban Horticulture, University of Washington. At that time, the subpopulation at site 2 appeared to be vigorous and contained a large number of individuals. (L. Zybas, University of Washington, pers. comm., 2003).

C. Disease or predation.

No known threats. Because of the relatively steep habitats occupied by Erigeron basalticus, grazing is unlikely to become a threat.

D. The inadequacy of existing regulatory mechanisms.

There is minimal regulatory protection for Erigeron basalticus on any of the ownership parcels. Five sub-populations occur on lands administered by the Bureau of Land Management (BLM). By policy, BLM must ensure that actions authorized, funded, or carried out do not contribute to the need to list a candidate species. The five BLM parcels supporting Erigeron basalticus are designated Areas of Critical Environmental Concern (ACEC). The ACEC designation indicates to the public that the BLM recognizes that an area has significant values and has established special management measures to protect these values. Despite these policies, protections to plants occurring on ACECs are not guaranteed because the policies could change.

Protection is especially questionable where the plant occurs within the highway right-of-way and is managed by Washington Department of Transportation. This species also occurs on the Yakima Training Center (YTC), administered by the U.S. Department of the Army, but is given no special protection. One sub-population and a portion of another is found on lands administered by WDFW. A significant portion of one subpopulation occurs in an area managed by the Washington Department of Natural Resources (WDNR) as a Natural Area Preserve, with Erigeron basalticus as the primary resource of concern in the Preserve. The species is listed as threatened by WDNR (John Gamon, WDNR, pers. comm., 1997). Washington State does not have an endangered Species Act, however, so the threatened designation provides no regulatory protection for this taxon.

E. Other natural or manmade factors affecting its continued existence.

The limited range, extremely limited habitat, and the small number and size of the subpopulations make Erigeron basalticus vulnerable to environmental and demographic stochasticity. A localized heavy rainfall event in 1998 resulted in significant landslides in the Yakima River Canyon. None of the species' occurrences were affected, but future slides may impact the species (Gamon 1998). There have been substantial declines in the number of individuals in four of the eight subpopulations over the last 10 years. The reasons for the declines are unclear.

Recreational activities on the slopes above sites 2 and 8 may inadvertently loosen the basalt formations and cause talus to cover portions of these subpopulations. Deliberate efforts to remove talus at these sites could have the same result. Evidence of loose talus covering plants was observed in August, 2002 (L. Zybas, pers. comm., 2003).

Spraying of pesticides on agricultural fields adjacent to the canyons is a potential threat to the plant and its insect pollinators, possibly reducing or preventing recruitment in some locations. Herbicide drift from nearby agricultural fields and/or maintenance of highway/railroad rights-of-way may cause direct impacts to individual plants, potentially causing declines in certain subpopulations.

FOR RECYCLED PETITIONS:

- a. Is listing still warranted? _____
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? _____
- c. Is a proposal to list the species as threatened or endangered in preparation? _____
- d. If the answer to c. above is no, provide an explanation of why the action is still precluded. _____

LAND OWNERSHIP:

Most of the subpopulations occur in areas with mixed ownership, a combination of Federal, State, and/or private. Two subpopulations occur entirely on private lands and one occurs entirely on State land. Specific land ownership of each of the sites is displayed in Table 1.

PRELISTING:

Preliminary discussions concerning development of Conservation Agreements with the BLM and YTC for Erigeron basalticus have taken place. Opportunities to continue these Federal efforts with the BLM and YTC are being pursued, as are other opportunities to develop Conservation Agreements with the WDFW and private landowners that include protective measures for Erigeron basalticus.

REFERENCES:

- Alverson, E., and M. Sheehan. 1986. Status report on Erigeron basalticus. Washington Natural Heritage Program.
- Camp, P. 1997. Map of BLM ownership and recreational use statistics for the Yakima River Canyon. Unpublished report. Wenatchee Resource Area, Bureau of Land Management.
- Gamon, J. 1988. Report on the Status of Erigeron basalticus Hoover. Unpublished status report. Washington Natural Heritage Program, Washington Department of Natural Resources.
- Gamon, John G. 1998. Report on the Status of Erigeron basalticus Hoover. Unpublished status report. Washington Natural Heritage Program, Washington Department of Natural Resources.
- Washington Natural Heritage Program and Bureau of Land Management. 2000. Field Guide to Washington's Rare Plants-2000.

LISTING PRIORITY (place * after number)

THREAT

Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11*
		Subspecies/population	12

Rationale for listing priority number:

Magnitude: The available information indicates that Erigeron basalticus has an extremely limited distribution, occurs within a relatively limited habitat type, and that several smaller subpopulations of the species have declined in the past decade. However, the major portion of the population, both in numbers (over 6,000 of 7,000 total individuals) and area (roughly 67 of 81 ha (165 of 200 ac)), appears to have remained stable during this same period. In addition, conservation measures to protect Erigeron basalticus from the potential threats that have been identified are well suited for inclusion within Conservation Agreements with other Federal and State agencies, and/or with private landowners. Based on the above, the magnitude of threat to the extant population of Erigeron basalticus is considered moderate.

Imminence: Currently, the cause(s) and extent of past declines in Erigeron basalticus are not fully understood, nor is the risk to the extant subpopulations. However, while various potential threats to the species have been identified, these threats are not considered imminent.

Erigeron basalticus is a member of a multi-species genus and, therefore, the listing priority number for this species is 11.

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve: Rowan Gould March 6, 2003
Acting Regional Director, Fish and Wildlife Service Date

Concur: _____
Director, Fish and Wildlife Service Date

Do not concur: _____
Director, Fish and Wildlife Service Date

Director's Remarks: _____

Date of annual review: January 2003
Conducted by: T. McCracken, C. Warren

Comments: _____

