

Zuni Fleabane
(*Erigeron rhizomatus*)

5-Year Review:
Summary and Evaluation

U.S. Fish and Wildlife Service
New Mexico Ecological Services Field Office
Albuquerque, New Mexico

5-YEAR REVIEW

Species reviewed: Zuni Fleabane (*Erigeron rhizomatus*)

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5-YEAR REVIEW

Zuni Fleabane/*Erigeron rhizomatus*

1.0 GENERAL INFORMATION

1.1 Reviewers:

Lead Regional or Headquarters Office: Region 2, Southwest
Contact: Susan Jacobsen, Chief, Threatened and Endangered Species Division, 505/248-6641; Wendy Brown, Recovery Coordinator, 505/248-6664.

Lead Field Office: New Mexico Ecological Services Field Office
Contact: Lyle Lewis, Recovery Coordinator, 505-761-4714.

Cooperating Field Office(s): Arizona Ecological Services Field Office
Contact: Mima Falk, Botanist, 520-670-4550.

1.2 Methodology used to complete the review:

The U.S. Fish and Wildlife Service (Service) conducts status reviews of species on the List of Endangered and Threatened Wildlife and Plants (50 CFR 17.12) as required by section 4(c)(2)(A) of the Endangered Species Act (Act) (16 U.S.C. 1531 *et seq.*). The Service provided notice of this status review via the Federal Register (70 FR 5460) requesting information on the status of the Zuni fleabane (*Erigeron rhizomatus*). This review was conducted by a team of biologists from the Service's Southwest Regional Office, New Mexico Ecological Services Field Office (NMESFO), New Mexico State Forestry Division (NMSF), and University of New Mexico (UNM). Robert Sivinski, NMSF Botanist, was contracted through a section 6 grant to gather the relevant information and prepare a draft of the review. The preliminary draft was reviewed for scientific accuracy by Phil Tonne, Botanist for Natural Heritage New Mexico at UNM, and Daniela Roth, Endangered Species Botanist for the Navajo Nation. The final review and recommendations were prepared by the NMESFO recovery biologist.

1.3 Background:

1.3.1 FR Notice citation announcing initiation of this review: 70 FR 5460-5463, Wednesday, February 2, 2005.

1.3.2 Listing history

Original Listing

FR notice: 50 FR 16680-16682

Date listed: Friday, April 26, 1985

Entity listed: Species

Classification: Threatened

1.3.3 Associated rulemakings: None

1.3.4 Review History: There have been no status reviews, biological opinions, or other large scale analysis of this species since it was listed as threatened. There is a memorandum in the file suggesting that the species should be considered for delisting in 1994 or 1995 based on additional populations found since the species was listed.

1.3.5 Species' Recovery Priority Number at start of 5-year review: 8. This priority number indicates a species with a moderate degree of threat and high potential for recovery.

1.3.6 Recovery Plan or Outline

Name of plan or outline: Recovery Plan for Zuni Fleabane (*Erigeron rhizomatus*)

Date issued: September 30, 1988

Dates of previous revisions, if applicable: The recovery plan has not been revised.

2.0 REVIEW ANALYSIS

2.1 Application of the 1996 Distinct Population Segment (DPS) policy

2.1.1 Is the species under review a vertebrate?

Yes, go to section 2.1.2.

No, go to section 2.2.

2.2 Recovery Criteria

2.2.1 Does the species have a final, approved recovery plan¹ containing objective, measurable criteria?

Yes, continue to section 2.2.2.

No, go to section 2.3.

2.2.2 Adequacy of recovery criteria.

2.2.2.1 Do the recovery criteria reflect the best available and most up-to date information on the biology of the species and its habitat?

Yes, go to section 2.2.2.2.

No, go to section 2.2.3.

2.2.3 List the recovery criteria as they appear in the recovery plan, and discuss how each criterion has or has not been met, citing information:

The recovery plan contains the following delisting criteria:

- Complete a survey of all potential habitat of Zuni fleabane.
- Develop and implement a habitat management plan and install permanent monitoring plots within several populations of Zuni fleabane.
- A demonstrated long-term stability (or increase) in population levels and habitat from the monitoring plots, and a continued assurance that the habitat of Zuni fleabane will not be threatened by mining exploration, leasing, or development.

Criteria as they relate to the 5-listing factors:

- *Present or threatened destruction, modification or curtailment of its habitat or range:* All three delisting criteria are relevant to this listing factor.
- *Overutilization for commercial, recreational, scientific, or educational purposes:* Not relevant.
- *Disease or predation:* Not relevant.
- *Inadequacy of existing regulatory mechanisms:* Not relevant.
- *Other natural or manmade factors affecting its continued existence:* No documentation currently exists for which this factor is relevant.

Although additional populations of Zuni fleabane have been found since the recovery plan was finalized, the delisting criteria focuses on threats, especially

¹ Although the guidance generally directs the reviewer to consider criteria from final approved recovery plans, criteria in published draft recovery plans may be considered at the reviewer's discretion.

uranium mining, and identifies the need for land use management within Zuni fleabane habitats to protect and conserve the species. Management plans are identified as being reliant upon information obtained through the study of Zuni fleabane habitat characteristics, ecology, and biology. No biological factors are identified as being threats to this species.

EXTENT RECOVERY CRITERIA HAS BEEN MET

Complete a survey of all potential habitat of Zuni fleabane. This criterion has been partially met by extensive field surveys of Federal and state lands in the Zuni and Datil/Sawtooth mountains of New Mexico (Fletcher 1978, Sabo 1982, Sivinski and Lightfoot 1991, Sivinski and Tonne 1999). Potential habitats on the Navajo Nation in the Chuska Mountains of New Mexico and Arizona have also been surveyed (Christie 2004).

Most of the public domain lands with potential Zuni fleabane habitats are easily accessible and have been surveyed by Federal and state botanists. Potentially suitable habitats on privately owned lands have not, and may never be surveyed. The Acoma and Zuni reservations contain potential habitats, but are generally not accessible to most botanists for field surveys. These tribes have no active programs to look for threatened or endangered plant species. The Navajo Nation employs a botanist and has sponsored Zuni fleabane surveys. Suitable habitats on the Fort Wingate military reservation have been partially surveyed for Zuni fleabane (Sivinski, unpublished field survey, 1995).

Develop and implement a habitat management plan and install permanent monitoring plots within several populations of Zuni fleabane. The criterion to implement a management plan for Zuni fleabane has been partially met by a Bureau of Land Management Resource Management Plan (USDI-BLM 1989) and Cibola National Forest Plan review (Service 2005). One local population in the Chuska Mountains occurs within an oil field, which can be managed by the Navajo Nation through its permitting process for mineral development. Establishment of permanent monitoring plots in several populations has not been accomplished, but may be unnecessary. The predominant land use in Zuni fleabane habitats is livestock grazing, which generally does not affect this plant. Visual monitoring of most known populations in the Zuni and Datil/Sawtooth mountains could not detect any significant changes in population trends or health from 1991 to 2004 (Sivinski and Lightfoot 1991; Sivinski and Tonne 1999, 2004). Permanent monitoring plots would only add statistical confidence to a conclusion of stability, at great expense.

A demonstrated long-term stability (or increase) in population levels and habitat from the monitoring plots, and a continued assurance that the habitat of Zuni fleabane will not be threatened by mining exploration, leasing, or development. Removing the threat of uranium mining from occupied Zuni fleabane habitats is the most salient criterion for recovery of this species. This threat is not imminent or pervasive; however, uranium mining could occur within several occupied Zuni

fleabane habitats in the Zuni and Datil/Sawtooth mountains at some time in the foreseeable future.

The Bureau of Land Management established an Area of Critical Environmental Concern on the single local population within its jurisdiction in the Datil/Sawtooth Mountains metapopulation. This Area of Critical Environmental Concern withdraws minerals from claim for as long as this special management area designation is upheld by Bureau of Land Management land use planning. No similar efforts to provide special management for occupied Zuni fleabane habitats have been made by the U.S. Forest Service.

2.3 Updated Information and Current Species Status

2.3.1 Biology and Habitat

2.3.1.1 New information on the species' biology and life history:

No new analytic methods have resulted in additional relevant information. Ground surface reflectance data from satellite imagery were found to give too many false positive indications from adjacent non-habitat substrates to be useful during a Zuni fleabane survey of the Datil Mountains (Sivinski and Lightfoot 1991).

2.3.1.2 Abundance, population trends (e.g. increasing, decreasing, stable), demographic features (e.g., age structure, sex ratio, family size, birth rate, age at mortality, mortality rate, etc.), or demographic trends:

Several additional populations of Zuni fleabane have been located during field surveys since this species was listed as threatened. The 1985 listing determination indicates 20 known populations in the Zuni and Datil mountain ranges of west-central New Mexico. However, the recovery plan documents only 12 known locations – 3 in the Zuni Mountains metapopulation and 9 in the Datil/Sawtooth Mountains metapopulation (Knight 1988). A subsequent field survey by Sivinski and Lightfoot (1991) documented a total of 19 local populations in the Datil/Sawtooth metapopulation. The 1999 monitoring survey by Sivinski and Tonne (1999) located another 3 populations in the Datil/Sawtooth Mountains for a current total of 21 populations in that region. There are at least three additional reports of this species at other locations in the Zuni Mountains in the University of New Mexico-Natural Heritage database for a total of 6 local populations in that range.

Zuni fleabane was discovered on the Navajo Nation in 1999 by botanist, Arnold Clifford, in the Chuska Mountains on the New Mexico/Arizona border in northwestern New Mexico and northeastern Arizona. A subsequent field survey by Kyle Christie (2004) documented a total of 15 local populations in the Chuska Mountains metapopulation.

The present total for Zuni fleabane is 3 metapopulations in widely separate mountain ranges with a total of 39 local populations. All populations appeared to be healthy and reproductive when located or revisited (Sivinski and Tonne 1999, 2004; Christie 2004).

A monitoring plot was established in 1988 at the Six-mile Canyon population in the Zuni Mountains (Knight and Cully 1988). This monitoring program was immediately discontinued when the researchers realized that the monitoring methodology was measuring asexual clones rather than numbers of established individuals, which was not considered useful in monitoring population trends (Anne Cully, personal communication to Robert Sivinski, 1990). In 1991, Sivinski visited most known populations in the Datil/Sawtooth Mountains (Sivinski and Lightfoot 1991) and two populations in the Zuni Mountains (unpublished observations). Subsequent monitoring by visual estimation found these populations to be stable and unchanged over a 13-year period (Sivinski and Tonne 1999, 2004).

Most propagation of Zuni fleabane probably occurs asexually by the spread of rhizomes (Knight 1988). The older portions of clonal patches often develop into large, bushy clumps of living and dead stems that are easily recognized as individual plants (Sivinski, unpublished observations 1991, 1999, 2004). Within populations, isolated plants can be found many meters from others, which indicates at least some sexual reproduction and propagation by seed (Knight and Cully 1988; Sivinski, unpublished observations 1991, 1999, 2004).

Local populations of Zuni fleabane range in number from 9 to greater than 5,000 plants and occupied habitats range in size from less than 1 acre to 260 acres (Christie 2004, Sivinski and Lightfoot 1991). Population size is positively correlated to the size of the geologic outcrop providing suitable habitat, although some adjacent outcrops that may appear suitable are not occupied (Christie 2004).

2.3.1.3 Genetics, genetic variation, or trends in genetic variation (e.g., loss of genetic variation, genetic drift, inbreeding, etc.):

The three regional metapopulations of Zuni fleabane are geographically isolated from one another and morphologically very similar (Sivinski, unpublished observation, 2004). The absence of obvious variability between metapopulations indicates a lack of genetic drift or differentiation since these populations became isolated.

Zuni fleabane is a perennial plant that reproduces asexually (by rhizomes) and sexually (by seed). A small sample of flower heads from three plants in the Six-mile Canyon, Zuni Mountains population was assessed for seed production and found to have an average of only 10.3 percent seed maturation, which ranged from only 10-16 seeds per fruiting head (Knight and Cully 1988). Therefore,

most flowers in this sample were either aborted or not pollinated. If aborted, the relatively low rate of seed set may indicate a high frequency of lethal alleles within the population, which could be attributed to a long history of in-breeding. This sample was taken from a small, isolated population. Christie (2004) reports abundant seed production of “tens of seed per fruiting head” in the Chuska metapopulation and Fletcher (1978) also reports “a large volume of seed” produced in Cibola National Forest populations.

2.3.1.4 Taxonomic classification or changes in nomenclature:

The two species *Erigeron rhizomatus* and *Erigeron lepidopodus* (of Chihuahua and Durango, Mexico) have been sectionally consolidated as *Erigeron* sect. *Geronpternix* Nesom & Noyes. Section *Geronpternix* is the most primitive phylogenetic element of the genus *Erigeron* (Nesom and Noyes 1999). This sectional reclassification indicates the great phylogenetic age of Zuni fleabane and its basal position in the evolution of this large genus.

2.3.1.5 Spatial distribution, trends in spatial distribution (e.g. increasingly fragmented, increased numbers of corridors, etc.), or historic range (e.g. corrections to the historical range, change in distribution of the species’ within its historic range, etc.):

The recent discovery of the new Zuni fleabane metapopulation in the Chuska Mountains (Christie 2004) indicates a wider distribution for this species than thought when listed as threatened. Several large areas of Chinle Formation in New Mexico and Arizona have yet to be botanically surveyed and may contain additional isolated populations of Zuni fleabane. Some apparently suitable outcrops of Chinle shale are not occupied by this plant. However, the scattered distribution of populations may be the result of specialization to particular structural or chemical substrate characteristics and not a failure of dispersal or shrinking populations.

2.3.1.6 Habitat or ecosystem conditions (e.g., amount, distribution, and suitability of the habitat or ecosystem):

All populations of Zuni fleabane occur in very similar habitats on coarse-textured shale outcrops of the Chinle and Baca formations (Knight 1988, Christie 2004). Early field surveys noted the seleniferous nature of occupied outcrops in the Zuni and Datil/Sawtooth mountains by the presence of associated seleniphytic plant species and the strong odor of selenium in some habitats (Fletcher 1978, Sabo 1982, Sivinski and Lightfoot 1991). Christie (2004), however, gives no indication that selenium is an obvious substrate characteristic for Zuni fleabane in the Chuska Mountains. It, therefore, may not be an obligate seleniphyte as previously thought.

Zuni fleabane is specialized to nearly barren shale outcrops that have not yet been occupied by any exotic plant or animal species (Sivinski, unpublished observations, 1991, 1999, 2004).

2.3.1.7 Other:

The New Mexico Rare Plants web site was established in 1998 by the New Mexico Rare Plant Technical Council to provide the public with information on rare, threatened and endangered plant species. Descriptive information and illustrations of Zuni fleabane are prominently displayed on this web site. This effort has helped fulfill the intent to provide information to the public and foster support for the conservation of Zuni fleabane. A poster of federally threatened and endangered plants of New Mexico was completed and printed in 2006 and is being disseminated to schools and the general public.

2.3.2 Five-Factor Analysis (threats, conservation measures, and regulatory mechanisms)

2.3.2.1 Present or threatened destruction, modification or curtailment of its habitat or range:

The primary threat to Zuni fleabane when it was listed as a threatened species in 1985 was the existence of several old and inactive uranium claims within or near many of the known populations in the Zuni and Datil/Sawtooth mountains of New Mexico. These claims remain unworked (Sivinski, unpublished observations 1991, 1999, 2004) and can no longer be valid under the yearly due-diligence requirements of the 1872 Mining Act. The presence of these claims, however, represents a reasonable expectation of minable quantities of uranium in the geologic formations under several populations of Zuni fleabane. In sedimentary environments, selenium often co-occurs with uranium (Brookins et al. 1977). The strong odor of selenium in many Zuni fleabane habitats may also indicate the presence of uranium. Uranium mining in New Mexico has been nearly nonexistent since the late 1980s because of the depressed price of this mineral on the world market. However, the Energy Bill passed by Congress in 2005 may reinvigorate development plans for new nuclear energy generating stations that would use uranium as fuel. Greater future demand for this mineral could increase its market price and potentially revive the uranium mining industry in New Mexico.

The Bureau of Land Management Resource Management Plan for the Socorro Resource Area has established the Sawtooth Area of Critical Environmental Concern on a single local population of several hundred Zuni fleabane plants in the Sawtooth Mountains (USDI-BLM 1989). This 120-acre Area of Critical Environmental Concern restricts off-road vehicle traffic, excludes rights-of-way, withdraws minerals from claim, and stipulates “no surface occupancy” for fluid mineral leases. The Bureau of Land Management is planning to carry this Area of

Critical Environmental Concern forward into their next Resource Management Plan revision, which should be finished in 2008 (Williams, Bureau of Land Management, pers. comm. 2005).

The northern-most Chuska Mountain population of Zuni fleabane in Arizona is the only population that has actually been impacted by a mineral prospect, possibly for uranium (Sivinski and Tonne 2004). An old bulldozer cut and road across this habitat is partially recolonized by Zuni fleabane and the intact portion of the habitat retains a healthy population.

Christie (2004) reports that the largest local population of Zuni fleabane in the Chuska Mountains is in the middle of an active oil field and identifies this land use as a potential threat to that population. Oil or gas extraction is not presently occurring in the Zuni Mountains. Several populations in the Datil/Sawtooth Mountains and Chuska Mountains are near volcanic extrusions and unlikely to be impacted by oil or gas development. These habitats occur on highly fractured geologic strata, which are not likely to contain oil or gas deposits.

Road construction and resulting erosion and sedimentation were identified as a threat to Zuni fleabane when listed as threatened in 1985. Only two of the known populations have been impacted by roads. The type locality population in the Zuni Mountains near Fort Wingate, New Mexico was impacted by the construction of State Road 400 prior to the discovery of this species. The northern-most Chuska Mountain population in Arizona was impacted by a mineral prospect and dirt road established many years ago. Zuni fleabane is becoming re-established on the previously disturbed roadsides at both locations. The undisturbed portions of these populations appear healthy and there are no significant impacts from erosion or sedimentation (Sivinski, unpublished observation, 2004). The few plants within the right-of-way of State Road 400 (1-2 percent of the population) would likely be destroyed if this road is widened in the future.

A timber harvest operation that had numerous logging trucks passing near a population of Zuni fleabane on Forest Road 457 in the Zuni Mountains was required to apply daily water treatments to this gravel road for dust abatement (Crumpton 1989). Under normal use, dust is not a problem on this infrequently used road.

Zuni fleabane and its habitats are generally not grazed by domestic livestock or wild ungulates (Knight 1988, Christie 2004). Some cattle grazing and trampling of this plant in the Zuni Mountain, Six-mile Canyon population occurred briefly during the drought year of 1989 (Knight 1989). This population is within 200 yards of a livestock water tank, with concentrated livestock in the area (Anonymous 1989). This population was subsequently fenced by USDA-Forest Service to exclude livestock. No other researchers or land management agency personnel have noted any use of this plant by domestic livestock. The shale

nature of the substrate it occurs on would normally preclude disturbance or modification of its habitat. Zuni fleabane habitats are usually barren of forage and do not attract grazing animals.

Potential threats from recreational activities such as camping and off-road-vehicle use have not been documented since Zuni fleabane was listed as threatened in 1985. There are no documented reports of recreational impact to any of the known populations. A few woodcutter and hunting camps have been seen near the Zuni Mountain and Datil/Sawtooth Mountain populations, but these camps were not within Zuni fleabane habitats (Sivinski, unpublished observations, 1991, 1999, 2004).

2.3.2.2 Overutilization for commercial, recreational, scientific, or educational purposes:

There is no past or current demand for Zuni fleabane plants for any commercial, recreational or educational purposes. This species has been collected, under appropriate permits, only three times since it was listed as threatened for the purpose of vouchering newly discovered populations in the Chuska Mountains on the Navajo Nation. These specimens reside at the University of New Mexico and Northern Arizona University herbaria.

2.3.2.3 Disease or predation:

No disease or predation on the Zuni fleabane is presently known. The widely scattered distribution of this species reduces its susceptibility to extinction from predators or pathogens.

2.3.2.4 Inadequacy of existing regulatory mechanisms:

All Federal and tribal landowners of occupied Zuni fleabane habitats (U.S. Forest Service, Bureau of Land Management, and Navajo Nation) are aware of this threatened species and its locations within their jurisdictions. These agencies, as well as the Service and State of New Mexico, prohibit the unauthorized collection of this species. As long as Zuni fleabane is listed as a threatened species, land uses within its Federal jurisdiction habitats must be reviewed and assessed through the National Environmental Protection Act and the Endangered Species Act, section 7 consultation processes. This species also appears on the Navajo Nation Endangered Species List (Mikesic et al. 2005) and the New Mexico Endangered Plant Species List (NMAC 19.21.2). A recent Service review of the Cibola National Forest Management Plan resulted in the conclusion that general land use activities authorized under their forest plan may affect, but not likely to adversely affect the Zuni fleabane (Service 2005).

The Bureau of Land Management Sawtooth Area of Critical Environmental Concern presently withdraws minerals from claim. This special management area

may exist for as long as it is perceived by the Bureau of Land Management as necessary. Future Resource Management Plan amendments or revisions could potentially eliminate this Area of Critical Environmental Concern designation if the Zuni fleabane is removed from the list of threatened species. If this Area of Critical Environmental Concern is eliminated, the minerals there would be available for claim and development. The current withdrawal from claim of locatable minerals in this Area of Critical Environmental Concern is scheduled to expire on October 9, 2026 (Williams, unpublished BLM realty data, 2005).

2.3.2.5 Other natural or manmade factors affecting its continued existence:

The Recovery Plan for Zuni Fleabane (Knight 1988) mentions the proliferation of power plants in the southwest and their production of acid rain or acidic dry deposition as a possible future threat to this species. There are no data, then or now, to substantiate this supposition. The significant natural buffering capacities of alkaline soils that predominate in arid regions of the southwest may help protect against any effects from acid deposition. A single soil sample from Zuni fleabane habitat found the pH to be 7.65 (Knight and Cully 1988) and it is reasonable to assume that other shale substrates occupied by this species are also alkaline. The Zuni Mountain populations of Zuni fleabane are only 30 miles distant from the Prewitt coal-fired generating station and the Chuska Mountain populations are within 40 miles of the larger Navajo and San Juan coal-fired generating stations. Damage to exposed plant parts of Zuni fleabane, or other vascular plants associated with its habitats, by acidic dry deposition has not been observed or studied.

2.4 Synthesis

Zuni fleabane is a rare regional endemic with three known, widely scattered population centers in western New Mexico and northeastern Arizona. The southernmost metapopulation occurs in the Datil/Sawtooth Mountains of northern Catron County, New Mexico and consists of 21 known local populations ranging in size from 9 to greater than 5,000 individuals. The Zuni Mountains metapopulation in McKinley County, New Mexico is smaller with only 6 widely scattered local populations of a few hundred plants each. The Chuska Mountains metapopulation in McKinley and San Juan counties, New Mexico and adjacent Apache County, Arizona was discovered in 1999. A 2004 survey of the Chuska Range documented a total of 15 local populations ranging in size from 25 to greater than 2,500 individuals. Additional local populations will likely be found within the three known metapopulations, and it is possible that new discoveries of Zuni fleabane could be made in northeastern Arizona that would extend the range of this species to the north or west.

Zuni fleabane habitats are outcrops of coarse-textured shales on the Baca Formation in west-central New Mexico and the Chinle Formation in northwestern New Mexico and northeastern Arizona. These soils often have a strong odor of selenium and sometimes support species of seleniphytic plants. Occupied habitats range in elevation from 7,500

to 8,400 feet and in size from less than 1 acre to 260 acres. Shaley outcrops of suitable habitat are often nearly barren, but occur within and contain scattered vegetation from piñon-juniper woodland to lower transitional forest of ponderosa pine and Douglas fir.

Propagation of Zuni fleabane occurs asexually by rhizomes and sexually by dispersal of seed. Seed production is evident in all populations, but can sometimes be depressed, possibly by abortion or lack of pollination. Most of the local populations in the Zuni Mountains and Datil/Sawtooth Mountains metapopulations have been visually monitored since 1985 and appear to be healthy and stable. The local populations in the Chuska Mountains were recently discovered in 1999 and 2004 and appeared to be healthy.

All known populations of Zuni fleabane are within Federal or tribal jurisdictions where there are few potential threats at this time. No agency has initiated project-specific section 7 consultation with the Service regarding Zuni fleabane since 1989. This indicates few land use conflicts with Zuni fleabane in the last 18 years. There are no obvious overutilization, disease or predation threats identified.

The only significant potential threat to Zuni fleabane at this time is mineral exploration and development. This species is confined to the Chinle and Baca geologic formations, which are known for uranium claims and subsequent mining. Oil and gas exploration and development is currently occurring in the vicinity of a Chuska Mountains local population. No other populations are within known areas of active gas or oil exploration or development. Existing regulatory mechanisms are presently inadequate to remove the long-term threat of uranium mining from Zuni fleabane habitats.

No change in classification is warranted. Zuni fleabane is a rare, regionally endemic plant species with relatively small, scattered populations within only three widely separated mountain ranges. This species is confined to small outcrops of shale on the Chinle and Baca geologic formations. Some Zuni and Datil/Sawtooth mountains populations occur on geologic outcrops within Cibola National Forest that have historically been claimed for uranium production. Uranium mining within the foreseeable future could potentially be focused upon the Zuni fleabane habitats within these two mountain ranges. No progress has been made in permanently withdrawing any of these habitats from mineral claim and production since the Recovery Plan prescribed this action in 1988. If future mining operations were to seriously impact or extirpate one or both of these metapopulations, it would indicate a real and potentially pervasive threat that could cause Zuni fleabane to become an endangered species.

3.0 RESULTS

3.1 Recommended Classification:

- Downlist to Threatened
- Uplist to Endangered
- Delist (*Indicate reasons for delisting per 50 CFR 424.11*):
 - Extinction
 - Recovery
 - Original data for classification in error
- No change is needed

3.2 New Recovery Priority Number: Change to 14.

Brief Rationale: A recovery priority number of 14 indicates a species with no imminent threats and high recovery potential.

3.3 Listing and Reclassification Priority Number: Not applicable.

Reclassification (from Threatened to Endangered) Priority Number: _____
Reclassification (from Endangered to Threatened) Priority Number: _____
Delisting (Removal from list regardless of current classification) Priority Number: _____

Brief Rationale:

4.0 RECOMMENDATIONS FOR FUTURE ACTIONS

The highest priority to facilitate recovery for Zuni fleabane is to revise the recovery plan. Threat assessments and recovery criteria should incorporate new information and clearly define recovery actions. Because the only significant potential threat to Zuni fleabane at this time is uranium mining, the revised recovery plan should contain objective, measurable criteria to alleviate this threat. Administrative actions by Federal land management agencies to reduce the threats from mining activities will be necessary to fully recover the species.

After the Recovery Plan is revised, the Service should work with the U.S. Forest Service and Bureau of Land Management to develop priorities and protocols for withdrawing current and future mineral claims from portions of Zuni fleabane habitats. Administrative mineral withdrawals should be quickly implemented. Although the recovery priority for this species is low, its potential for recovery is presently high. Should the price of uranium increase in the future, the minerals under significant populations of Zuni fleabane could be claimed again and the opportunity for recovery lost.

Special management areas, such as Areas of Critical Environmental Concern, may not provide the long-term assurance suitable for recovery criteria. Special management area prescriptions to withdraw minerals from claim are temporary and could be eliminated after Zuni fleabane is removed from the list of threatened species. Should the special management area protections cease, Zuni fleabane may need protection afforded by its current threatened status again. Therefore, the recovery criteria should address the long-term need for special management after Zuni fleabane is removed from the list of threatened species (e.g., Recovery Management Agreement; Scott, et al. 2005).

5.0 REFERENCES

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**U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of *Erigeron rhizomatus***

Current Classification:

Recommendation resulting from the 5-Year Review:

- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

Appropriate Listing/Reclassification Priority Number, if applicable:

Review Conducted By: Wendy Brown, Recovery Coordinator, U.S. Fish and Wildlife Service,
Southwest Region

FIELD OFFICE APPROVAL:

Acting
Lead Field Supervisor, Fish and Wildlife Service

Approve *Cynthia S. Abeyta* Date *9/24/07*

Assistant

REGIONAL OFFICE APPROVAL:

Assistant
Lead Regional Director, Fish and Wildlife Service

Approve *Nancy J. Gloman* Date *9/27/07*