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Delisting Process for Endangered Species and Relevance to Populations on Army Lands

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Final Report

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ABSTRACT: The Endangered Species Act (ESA) states that all Federal agencies are responsible for conserving threatened and endangered species as part of their normal activities. As a result, Department of Defense agencies play an important role in the conservation of many rare plant and animal populations. Presently, more than 175 of the approximately 1,290 taxa of plants and animals protected under the ESA are known to inhabit Army lands. Protection of species under the ESA can constrain Army mission activities, thereby reducing defense readiness. As the number of listed species increases, mission constraints will increase.

The purpose of the ESA is to prevent species extinction and promote recovery by providing protection to imperiled plants and animals. Delisting species is the ultimate goal of implementing the ESA; it is the best alternative for reducing conflicts between the Army's mission and endangered species protection. Recovery and delisting of species on military lands will provide the maximum flexibility for the conduct of training and testing operations while achieving the goals of environmental protection and sustainment.

This report reviews the delisting/downlisting process of the Endangered Species Act and provides a roadmap for consideration of the delisting process with application to species on military lands.

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Conversion Factors

Non-SI* units of measurement used in this report can be converted to SI units as follows:

Multiply	By	To Obtain
acres	4,046.873	square meters
cubic feet	0.02831685	cubic meters
cubic inches	0.00001638706	cubic meters
degrees (angle)	0.01745329	radians
degrees Fahrenheit	$(5/9) \times (^\circ\text{F} - 32)$	degrees Celsius
degrees Fahrenheit	$(5/9) \times (^\circ\text{F} - 32) + 273.15$	kelvins
feet	0.3048	meters
gallons (U.S. liquid)	0.003785412	cubic meters
horsepower (550 ft-lb force per second)	745.6999	watts
inches	0.0254	meters
kips per square foot	47.88026	kilopascals
kips per square inch	6.894757	megapascals
miles (U.S. statute)	1.609347	kilometers
pounds (force)	4.448222	newtons
pounds (force) per square inch	0.006894757	megapascals
pounds (mass)	0.4535924	kilograms
square feet	0.09290304	square meters
square miles	2,589,998	square meters
tons (force)	8,896.443	newtons
tons (2,000 pounds, mass)	907.1847	kilograms
yards	0.9144	meters

* *Système International d'Unités* ("International System of Measurement"), commonly known as the "metric system."

Preface

This study was conducted for the Office of the Director of Environmental Programs under project A896, “Base Facilities Environmental Quality”; Work Unit CNN-T043, “TES Emerging Issues.” The technical monitor was Dr. Vic Diersing, DAIM-ED-N.

The work was performed by the Ecological Processes Branch (CN-N) of the Installations Division (CN), Construction Engineering Research Laboratory (CERL). Timothy J. Hayden served as CERL Principal Investigator and Thomas S. Smith served as Co-Investigator. This work was done by Jana Sterling Graber, contractor through Jones Technology, Lanham, MD. The technical editor was Gloria J. Wienke, Information Technology Laboratory. Alan B. Anderson is Chief, CEERD-CN-N, and Dr. John T. Bandy is Chief, CEERD-CN. The associated Technical Director was Dr. William D. Severinghaus, CEERD-CV-T. The Acting Director of CERL is Dr. Ilker Adiguzel.

CERL is an element of the U.S. Army Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers. The Commander and Executive Director of ERDC is COL James R. Rowan, and the Director of ERDC is Dr. James R. Houston.

1 Introduction

Background

The Endangered Species Act (ESA) places responsibility for the conservation and management of threatened and endangered species (TES) with all Federal agencies that have TES within their jurisdiction (ESA §2). As a result, Department of Defense (DoD) agencies play an important role in the conservation of many rare plant and animal populations. Access limitations associated with safety and security considerations have sheltered many military lands from development pressures, landscape-scale losses, and habitat fragmentation. Furthermore, activity restrictions are often implemented to provide protection for endangered and threatened species during critical times of their life cycle (e.g., military maneuvers are restricted in habitats of endangered golden-cheeked warblers and black-capped vireos during the breeding season at Fort Hood, TX). Military lands support ecological integrity by providing refuge to some of the best remaining examples of rare forest, wetland, and rangeland habitats. Presently, more than 175 of the 1,293 taxa of plants and animals in the United States protected under the ESA are known to inhabit Army lands (Schreiber and Reed 1999, Rubinoff et al. 2005).

Maintaining military training and readiness is an important goal for DoD agencies. However, this mission must be accomplished while meeting environmental protection mandates and sustainability objectives. Potential impacts of military activities on federally listed TES are among the most critical environmental concerns facing the Army today. Understanding impacts of military activities on TES is a current focus of U.S. Army Engineer Research and Development Center (ERDC) research efforts. Additional efforts include addressing the development of efficient and systematic techniques for TES inventory and monitoring, particularly on Army installations.

The DoD manages nearly 25 million acres of land on approximately 425 major installations across the United States (United States Fish and Wildlife Service [USFWS] 2001). Protection of species under the ESA can have an effect of constraining Army mission activities, thereby reducing defense readiness. Violations of the ESA can result in lengthy and costly litigation, and can lead to criminal and civil penalties. As the number of listed species increases, mission constraints and the management burden on military installations potentially can increase. To meet

this challenge, the Army requires information on: (1) the distribution and abundance of TES on Army lands, (2) the effects of mission activities on TES and their individual or collective habitats within the ecosystem, and (3) the effects of minimization and management options compatible with the Army's mission.

The purpose of the ESA is to prevent species extinction and promote recovery by providing protection to imperiled plants and animals. A further stated purpose is to protect ecosystems in which imperiled species are found (16 U.S.C. § 1531(b); Section 2(b)). The law offers broad coverage, with native and foreign species, plant, vertebrate, and invertebrate species, subspecies, and distinct population segments of vertebrate species eligible for protection, with the exception of certain insects¹ (ESA §3).

The agencies responsible for determining actions and implementing the ESA are the USFWS, within the Department of Interior, and the National Marine Fisheries Service (NMFS), within the Department of Commerce. The USFWS has primary jurisdiction for terrestrial and freshwater species, while NMFS responsibilities are mainly for marine species.

Delisting species is the ultimate goal of implementing the ESA. Delisting of species also represents the best alternative for reducing conflicts between the Army's mission and endangered species protection. Recovery and delisting of species on military lands will provide the maximum flexibility for the conduct of training and testing operations on military lands while achieving the goals of environmental protection and sustainment. This report outlines the delisting process under the ESA and its potential application to populations of endangered species on military lands.

Objective

The purpose of this report is to review the delisting/downlisting process of the Endangered Species Act and provide a roadmap of the delisting process for potential application to species on military lands.

¹ Insects determined to constitute a pest by the Secretary of Interior or Commerce are not afforded protection by the Act.

Approach

This report includes information on the delisting process under the ESA by summarily examining several relevant questions. Questions addressed include:

1. What species have been petitioned for delisting?
2. What was the success of delisting petitions?
3. What was the process and variations in the process among delisting petitions?
4. Is there a process for delisting by recovery region?
5. What organizations/governmental offices were involved in the delisting petition?
6. What data were required for delisting?
7. What were the time and funding requirements for a delisting, and what factors affected time/dollar costs?

To address these questions, this report presents a review of the more important elements of the ESA. Petition actions for delisting were reviewed from available published articles and applicable publications in the Federal Register. Case studies are presented to illustrate issues related to the delisting process. These reviews are also referenced in terms of their relevance to application of the delisting process to species and species populations occurring on military lands.

Mode of Technology Transfer

This report will be distributed to military land managers through the Installation Management Authorities and Major Commands. Information contained in this report will be presented at military-related meetings and workshops and at symposia.

This report will be made accessible through the World Wide Web (WWW) at URL:
<http://www.cecer.army.mil>

Definitions

Acronyms

- E – Endangered
- T – Threatened
- AD – Proposed Delisting
- AE – Proposed Reclassification to Endangered
- AT – Proposed Reclassification to Threatened
- PE (S/A) – Proposed Similarity of Appearance to an Endangered Taxon
- PT (S/A) – Proposed Similarity of Appearance to a Threatened Taxon

Biological Assessment: Information prepared by the action agency to determine whether a proposed action is likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of species that are proposed for listing or are candidates for listing; or (3) adversely modify proposed critical habitat. The outcome of a biological assessment determines whether formal consultation or a conference is necessary (50 CFR § 402.02; 50 CFR § 402.12).

Biological Opinion: A written report that includes: (1) the opinion of the USFWS or NMFS as to whether or not an agency action is likely to jeopardize the continued existence of listed species; (2) a summary of the information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed species or designated or proposed critical habitat (50 CFR § 402.02; 50 CFR § 402.14(h)).

Consultation: The process in which each Federal agency consults with the USFWS or NMFS to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the adverse modification of designated critical habitat. Consultation can be informal and address routine interagency discussions such as which species are likely to occur in the proposed action area. Consultation becomes formal when the federal action agency determines, typically through a biological assessment, that its action may affect listed species or critical habitat.

Critical habitat: Specific geographic areas, whether occupied by listed species or not, that are determined to be essential for the conservation and management of listed species, and that have been formally described in the Federal Register (16 USC 1532(5)).

Delist: The process of removing an animal or plant from the list of Endangered and Threatened Wildlife and Plants (16 USC 1533(8)(c)).

Distinct population segment: A portion of a vertebrate species or subspecies that can be readily separable from the rest of its species and considered to be biologically and ecologically significant (61 FR 4722, Feb 7, 1996).

Downlist: The reclassification of a species from Endangered to Threatened.

Endangered: The classification provided to an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range (16 USC 1532(6)).

Listed species: A species, subspecies, or distinct vertebrate population segment that is contained in the Federal lists of Endangered and Threatened Wildlife and Plants (50 CFR § 17.11; 50 CFR § 17.12).

Petition: A formal request, with the support of adequate biological data, suggesting that a species be listed, reclassified, or delisted (16 USC 1533(b)).

Recovery: The process by which the decline of an endangered or threatened species is arrested or reversed, or threats to its survival neutralized so that its long-term survival in nature can be ensured (50 CFR § 402.02).

Recovery plan: A document drafted by USFWS or NMFS other knowledgeable individual or group that serves as a guide for activities to be undertaken by Federal, State, or private entities in helping to recover and conserve endangered or threatened species (16 USC 1532(8)(f)).

Species: From Section 3(15) of the Endangered Species Act: “The term ‘species’ includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.” A population of individuals that are more or less alike, and that are able to breed and produce viable offspring under natural conditions.

Threatened: The classification provided to an animal or plant likely to become endangered within the foreseeable future throughout all or a significant portion of its range (16 USC 1532(20)).

2 Endangered Species Act

To fully grasp the delisting and reclassification process, an understanding of the ESA is necessary. The ESA has been reauthorized seven times and amended on several occasions, most recently in 2003. President Richard M. Nixon signed the ESA into law in December 1973. When it was passed, it represented the concern about the decline of many wildlife species around the world. The purpose of the ESA is to conserve “the ecosystems upon which endangered and threatened species depend” and to conserve and recover listed species (ESA §2).

Section 1 of the ESA states the name of the act, and Section 2 declares its purpose. Section 3 defines the terms used throughout the law, many of which are used in this chapter.

Four of the remaining 12 sections (sections 4, 7, 9, and 10) can be considered to serve as the backbone of the Act. Section 4 addresses species listing and critical habitat designation. The consultation process used on public lands and for federal activities is described in Section 7. Section 9 defines taking of a species and is applied to activities on private lands, and Section 10 describes the mechanism provided for incidental taking permits on private property.

In accordance with Section 4, species are listed on the basis of the species’ biological status and threats to its existence and from the best scientific and commercial data available. In some instances, a species that closely resembles an endangered or threatened species is listed due to similarity of appearance. The ultimate goal of the Act is to “recover” species so they no longer need protection as threatened or endangered species. The process for the development of recovery plans and the steps needed for recovery are outlined in this section of the Act. Appropriate public and private agencies and institutions and other qualified persons assist in the development and implementation of recovery plans.

Section 4 also gives details on the designation of critical habitat for listed species when judged to be “prudent and determinable.” Critical habitat includes geographic areas on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection. Critical habitat must be designated on the basis of the best scientific data available and after taking into consideration economic impact, the impact on

national security, and any other relevant impact. Additionally, Section 4 describes the delisting process addressed further in Chapter 3 of this report.

Section 7 includes the consultation process for federal activities and federal lands. This section directs all federal agencies to assure that no action authorized, funded, or carried out by them will jeopardize a listed species or result in the destruction or adverse effects on critical habitat. Agencies are to consult with USFWS or NMFS to assure that no action, including construction projects, agency operations, or any other agency activity results in the destruction or adverse modification of habitat of such species. The agency requesting the consultation must conduct a biological assessment of its project if the Secretary of the Interior indicates that a TES may be present in the area. This section requires a written statement of findings to be provided by the USFWS or NMFS and, if jeopardy is found, written suggestions for alternative courses of action to avoid jeopardy. Consultations typically result in one of the following determinations: (1) the action will not affect or is not likely to affect listed species or critical habitat, (2) the action may affect, but not likely adversely affect listed species or critical habitat, (3) the planned action will not jeopardize a listed species or result in the destruction or adverse modification of critical habitat, or (4) the planned action may proceed with specified modification that will avoid species jeopardy or destruction or adverse modification of critical habitat. This written statement, or biological opinion, which is based in part on a preceding biological assessment provided by the federal action agency, also determines allowable “take,” if any, of individuals or habitat as a result of the federal agency’s implementation of the action and establishes “terms and conditions” to minimize effects of the action on listed species.

Section 7 also includes a process for obtaining an exemption for federal activities from ESA regulations through a designated Endangered Species Committee. Section 7(j) provides that the Endangered Species Committee must grant an exemption from the provision of the Act if the Secretary of Defense determines that an exemption is necessary for national security. To date, the Secretary of the Department of Defense has not requested any exemption.²

² This committee consists of the Secretaries of the Interior or Commerce, Agriculture, and the Army; the chairman of the Council of Economic Advisors; the administrators of the Environmental Protection Agency and the National Oceanic and Atmospheric Administration; and an appointed representative from each affected state. This provision of the Act has been rarely applied. (On Feb. 9, 1979, the Endangered Species Committee granted an exemption from the requirements of the Act to Grayrocks Dam, WY).

Section 9 defines prohibited acts in relation to TES. These acts include importing or exporting any listed species into or out of the United States; taking any species within the territorial United States or on the high seas; possessing, selling, or transporting any species taken in violation of the ESA; engaging in international trade with such species; or removing any such species from federal jurisdiction. Section 9 also defines taking of a species and is applied to activities on private lands.

Section 10 describes the mechanism provided for incidental taking permits on private property. The law allows for a process for exempting development projects from the restrictions of the ESA. Section 10 specifies exceptions that may be made to the law and under what conditions. For example, the Secretary may permit actions that are for scientific purposes or that enhance the propagation or survival of the affected species. The Secretary may also permit incidental taking. The Habitat Conservation Plan (HCP) provision was added to the statute in 1982 to enable the Secretary to grant a permit for incidental takings on nonfederal property. An acceptable HCP must include descriptions of the (1) the impact of a taking, (2) what steps will be taken to minimize and to fund the mitigation of the impact, (3) what alternatives were considered, and (4) any other measures required to conserve the species involved. An incidental take permit is granted on nonfederal property if the Secretary finds that the plan submitted is scientifically sound, well funded, and determined to not have a negative impact on species' survival and recovery.

Section 5 of the ESA authorizes the acquisition of land, water, or interests that promote the conservation of a species, and Section 6, among other things, directs federal cooperation and consultation with states on land or water purchases. The Secretary of the Interior can enter into management or cooperative agreements with states that further the goal of conserving TES when the state's program meets federal goals for conserving the species. Federal funding is provided for a part of the state's program costs. In Section 8 the Act designates the Secretary of the Interior as the management and scientific authority of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) and the USFWS as the implementation authority.

Section 11 defines the civil and criminal penalties for violations of the act. Section 12 directed the secretary of the Smithsonian Institution to review the plant kingdom within a year after the passage of the ESA and to determine which plants should be listed. (Sections 13 and 14 relate to coordination of the ESA with other acts.) Section 15 authorizes appropriations to fund the Act and sets appropriation ceilings for the Departments of the Interior, Commerce, and Agriculture. It separately authorizes a ceiling on funds for CITES implementation. Sections 17 and 18 set the relationship between the ESA and the Marine Mammal Protection Act and

require an annual accounting of expenditures by USFWS and NMFS for listing and conserving endangered and threatened species.

The ESA has been amended seven times (1976, 1977, 1978, 1979, 1982, 1988, and 2003). The 1976, 1977, and 1979 amendments were primarily concerned with procedures on how to consider and post information, add to scientific data, and use catch records (commercial fishing records) as a resource for determining endangered status. Substantive changes occurred with three authorizations in 1978, 1982, and 1988. The 1978 amendments included provisions for critical habitat designation, the creation of the Endangered Species Committee, and the exemption process. Incidental take on nonfederal property and provision for Habitat Conservation Plans were included in the 1982 amendments. Subjects of the 1988 amendments included: funding for state cooperative agreement programs, candidate species, and endangered plant protection. The 2003 amendment addressed the potential designation of critical habitat on DoD lands.³

³ The 2003 amendment (Public Law 108-136 § 318) prohibits the Secretaries of the Interior or Commerce from designating critical habitat on DOD lands if the Secretary determines that the Integrated Natural Resources Management Plan (as required by the Sikes Act, 16 USC 670 et seq.) provides a benefit to the species for which critical habitat is proposed for designation. It also requires the Secretary to consider the impacts to national security when designating critical habitat.

3 Delisting Process

In a broad sense Congress intended the ESA to provide a mechanism for reversing the endangered or threatened status of a listed species. This mechanism, as prescribed in the Act, also provides for the reclassification of species from endangered to threatened or the removal of species from the list (i.e., delisting) (ESA § 4). Delisting species is the ultimate goal of implementing the ESA. However, to date only 15 species have been delisted due to recovery (Table 1).

The Secretary of the Interior or Commerce may initiate a change in the status of a listed species (Table 2). Alternatively, after receiving a substantive petition for any change in listing status (ESA § 4(b)(3)), the Secretary conducts a review of the species' status (Table 3). Table 4 contains a list of species that have had a status change either downlisting (from E to T) or uplisting (from T to E). A proposal (i.e., effectively a response to the petition), is published in the Federal Register where public comment is invited and considered before publishing the final decision. The final decision is made within a year of the petition.

The determination to delist, downlist, or uplist a species must be made “solely on the basis of the best scientific and commercial data available” (ESA § 4), “without reference to possible economic or other impacts” (50 CFR § 424.11(b), see Appendix A, page 40). To downlist or delist a species, it must be determined that it is not endangered or threatened based on a number of factors, such as population size, recruitment, stability of habitat quality and quantity, and control or elimination of threats. To downlist or delist a species, the USFWS or NMFS follow a process similar to the consideration for listing a species. As part of this process, the population and its recovery achievements are assessed. Concurrent with this assessment, the USFWS or NMFS consults with within-agency and outside-agency species experts. In assessing existing threats, the USFWS or NMFS must determine that a species is no longer threatened or endangered based on five factors (ESA § 4(a)(1)).

1. Is there a present or threatened destruction, modification, or curtailment of species' habitat or range?
2. Is the species subject to over utilization for commercial, recreational, scientific, or educational purposes?
3. Is disease or predation a factor?
4. Are there inadequate existing regulatory mechanisms in place outside the ESA (taking into account the efforts by the States and other organizations to protect the species or habitat)?
5. Are other natural or manmade factors affecting its continued existence?

Table 1. Species removed from the Endangered Species List and the reason (adapted from USFWS 2004a).

Date Listed	Date Delisted	Species Name	Reason Delisted
06/18/1984	01/11/2005*	Agave, Arizona	New information discovered
03/11/1967	06/04/1987	Alligator, American	Recovered
11/06/1979	10/01/2003	Barberry, Truckee	Taxonomic revision
02/17/1984	02/06/1996	Bidens, cuneate	Taxonomic revision
08/27/1984	02/23/2004	Broadbill, Guam	Believed extinct
04/28/1976	08/31/1984	Butterfly, Bahama swallowtail	Act amendment
10/26/1979	06/24/1999	Cactus, Lloyd's hedgehog	Taxonomic revision
11/07/1979	09/22/1993	Cactus, spineless hedgehog	Not a listable entity
09/17/1980	08/27/2002	Cinquefoil, Robbins'	Recovered
03/11/1967	09/02/1983	Cisco, longjaw	Extinct
03/11/1967	07/24/2003	Deer, Columbian white-tailed Douglas County DPS	Recovered, threats removed
06/02/1970	09/12/1985	Dove, Palau ground	Recovered
03/11/1967	07/25/1978	Duck, Mexican (U.S.A. only)	Taxonomic revision
06/02/1970	08/25/1999	Falcon, American peregrine	Recovered
06/02/1970	10/05/1994	Falcon, Arctic peregrine	Recovered
06/02/1970	09/12/1985	Flycatcher, Palau fantail	Recovered
04/30/1980	12/04/1987	Gambusia, Amistad	Extinct
04/29/1986	06/18/1993	Globeberry, Tumamoc	New information discovered
03/11/1967	03/20/2001	Goose, Aleutian Canada	Recovered
10/11/1979	11/27/1989	Hedgehog cactus, purple-spined	Taxonomic revision
12/30/1974	03/09/1995	Kangaroo, eastern gray	Recovered
12/30/1974	03/09/1995	Kangaroo, red	Recovered
12/30/1974	03/09/1995	Kangaroo, western gray	Recovered
06/02/1977	02/23/2004	Mallard, Mariana	Believed extinct
04/26/1978	09/14/1989	Milk-vetch, Rydberg	New information discovered
06/12/1998	02/ 02/2005*	Mouse, Preble's meadow jumping	New information discovered
06/02/1970	09/12/1985	Owl, Palau	Recovered
06/14/1976	01/09/1984	Pearlymussel, Sampson's	Extinct
06/02/1970	02/04/1985	Pelican, brown (U.S. Atlantic coast, FL, AL)	Recovered
07/13/1982	09/22/1993	Pennyroyal, Mckittrick	New information discovered
03/11/1967	09/02/1983	Pike, blue	Extinct
10/13/1970	01/15/1982	Pupfish, Tecopa	Extinct
09/26/1986	02/28/2000	Shrew, Dismal Swamp southeastern	New information discovered
03/11/1967	12/12/1990	Sparrow, dusky seaside	Extinct
06/04/1973	10/12/1983	Sparrow, Santa Barbara song	Extinct
07/02/1970	09/21/2004	Tinian monarch	Recovered
11/11/1977	11/22/1983	Treefrog, pine barrens (FL pop.)	New information discovered
09/13/1996	04/26/2000	Trout, coastal cutthroat (Umpqua R.)	Taxonomic revision
06/14/1976	02/29/1984	Turtle, Indian flap-shelled	Erroneous data

Date Listed	Date Delisted	Species Name	Reason Delisted
06/02/1970	06/16/1994	Whale, gray (except where listed)	Recovered
03/11/1967	04/01/2003	Wolf, gray U.S.A. (delisting of all other lower 48 states or portions of lower 48 states not otherwise included in the 3 distinct population segments).	Taxonomic revision
07/19/1990	10/07/2003	Woolly-star, Hoover's	New information discovered
* Date of delisting proposal			

Table 2. Summary example of species proposed for a status change or delisting (USFWS 2004b).

Status	Proposal Date	Species Name
AT	03/26/1998	Bat, Mariana fruit (=Mariana flying fox)
AD	07/06/1999	Eagle, Bald
AD	05/22/2003	Frankenia, Johnston's
AD	06/24/1999	Goby, tidewater Populations north of Orange County, CA
AT	08/05/1993	Hawk, Hawaiian (=ʻIo)
AD	02/22/1999	Monarch, Tinian (old world flycatcher)
AD	02/05/2005	Mouse, Preble's meadow jumping
AT	09/22/1993	Poolfish, Pahrump
AT	pending	Salamander, California tiger
PT(S/A)	01/09/2001	Trout, Dolly Varden
AD	04/01/2003	Wolf, Gray
AT – Proposed Reclassification to Threatened		
AD – Proposed Delisting		
PT (S/A) – Proposed Similarity of Appearance to a Threatened Taxon		

Table 3. Summary example of species with delisting or downlisting petition activity.

Compiled from the Center for Biological Diversity's petition database and the USFWS Threatened and Endangered Species database System (TESS).

Common Name	Petitioner	Petition date	Petitioned or Proposed Action	90-day Finding
Arizona agave	U.S. Forest Service	05-07-1985	Delist	Positive (51 FR 16363)
Bald eagle	Thomas P. Kohanski	04-07-1986	Delist	Negative (52 FR 02239)
Bald eagle, WA state DPS	Wildcat Steelhead Club	09-15-1995	Delist	NOT AVAILABLE
Bee Creek Cave harvestman	Williamson County Commissioners Court	06-07-1993	Delist	Negative (59 FR 11755)
Black-capped vireo	National Wilderness Institute	08-21-1995	Delist	NOT AVAILABLE
Black-capped vireo	15 Members of Congress Congress	08-21-1995	Delist	NOT AVAILABLE
Bone Cave harvestman	Williamson County Commissioners Court	06-07-1993	Delist	Negative (59 FR 11755)
Brown pelican (LA population)	Louisiana Department of Wildlife and Fisheries	07-09-1998	Delist	NOT AVAILABLE
Coffin cave mold beetle	Williamson County Commissioners Court	06-07-1993	Delist	Negative (59 FR 11755)
Coho salmon in Siskiyou County, CA	Richard A. Gierk, New Frontiers Institute, Inc.	01-20-1999	Delist	Negative (64 FR 16396)
Coho salmon Central California Coast ESU	Central Coast Forest Association	03-14-2002	Delist	Positive (67 FR 48601)

Common Name	Petitioner	Petition date	Petitioned or Proposed Action	90-day Finding
Concho Water Snake	John W. Grant, CRMWD	06-29-1998	Delist	Negative (64 FR 41903)
Delta smelt	San Luis and Delta-Mendota Water Authority	07-31-2002	Delist	NOT AVAILABLE
Furbish lousewort	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE
Gila trout	Gerald L. Burton	11-11-1996	Downlist	NOT AVAILABLE
Golden-cheeked warbler	Michael R. Bradle	10-07-1994	Delist	NOT AVAILABLE
Golden-cheeked warbler	National Wilderness Institute	08-21-1995	Delist	NOT AVAILABLE
Golden-cheeked warbler	15 Members of Congress	08-21-1995	Delist	NOT AVAILABLE
Gray wolf (Great Lakes DPS)	Minnesota Conservation Federation	06-27-2000	Delist	NOT AVAILABLE
Gray wolf (Northwoods DPS)	Lawrence Krak	02-22-2000	Delist	NOT AVAILABLE
Gray wolf (Rocky Mountains DPS)	Friends of the Northern Yellowstone Elk Herd	10-05-2001	Delist	NOT AVAILABLE
Gray wolf in Minnesota, Wisconsin, and Michigan	Lawrence Krak	02-13-1998	Delist	Negative (63 FR 55839)
Gray wolf	Farm Bureau Federations of Wyoming	07-16-1990	Delist	Negative (55 FR 49656)
Hawaiian hawk	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE
Houston toad	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE
Island night lizard	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE
Ivory-billed woodpecker	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE
Johnston's frankenia	National Wilderness Institute	02-03-1997	Delist	Positive (68 FR 27961)
Kretschmar cave mold beetle	Williamson County Commissioners Court	06-07-1993	Delist	Negative (59 FR 11755)
Lahontan cutthroat trout	City of Sparks and City of Reno	02-28-1985	Delist	Positive (50 FR 35272)
Lahontan cutthroat trout, Humboldt population	Gene Gustin, Elko City Federal Land Use Planning Commission	04-12-1993	Delist	Negative (59 FR 28329)
Least tern	NOT AVAILABLE	05-11-1999	Downlist	NOT AVAILABLE
Little Aguja Pondweed	Davis Mountains Trans-Pecos Heritage Association	02-11-1994	Delist	Negative (59 FR 67267)
Lost River Sucker	Richard A. Gierk, New Frontiers Institute, Inc	10-01-2001	Delist	Negative (67 FR 34422)
Maryland darter	Maryland Farm Bureau	07-06-1995	Delist	Negative (61 FR 05971)
Merriams Montezuma quail	J. J. Pratt	07-10-1980	Delist	NOT AVAILABLE
Mexican bobcat	National Trappers Association	07-08-1996	Delist	Positive (68 FR 39590)
Mexican spotted owl	Board of Supervisors of Apache County, AZ	06-25-1993	Delist	Negative (58 FR 49467)
Missouri bladderpod	Missouri Department of Conservation	01-26-1998	Downlist	Positive (68 FR 34569)
Nile crocodile	Safari Club International	03-18-1986	Downlist	Positive (52 FR 02239)
Northern spotted owl in CA	California Forestry Association	10-07-1993	Delist	Negative (59 FR 44958)
Northern spotted owl	Richard A. Gierk, New Frontiers Institute, Inc	02-02-1999	Delist	Negative (65 FR 5298)
Pacific salmon	Richard A. Gierk, New Frontiers Institute, Inc	07-14-1998	Delist	Negative (63 FR 53635)
Peirson's Milk-vetch	American Sand Association et al.	10-25-2001	Delist	Positive (68 FR 52784)
Plymouth redbelly turtle	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE
Preble's Meadow Jumping Mouse	Senators Craig Thomas and Mike Enzi, Representative Barbara Cubin, Governor Jim Geringer	06-11-1999	Delist	Negative (68 FR 70523)
Preble's Meadow Jumping Mouse	Robert Hoff Commercial Real Estate Services	07-26-1999	Delist	Negative (68 FR 70523)
Preble's Meadow Jumping Mouse	CWCD and the Governor of Wyoming	12-17-2003	Delist	Negative (68 FR 70523)
Red-cockaded woodpecker	15 Members of Congress	08-21-1995	Delist	NOT AVAILABLE
Red-cockaded woodpecker	National Wilderness Institute	08-21-1995	Delist	NOT AVAILABLE
Red wolf	National Wilderness Institute	08-05-1995	Delist	Negative (62 FR 64799)

Common Name	Petitioner	Petition date	Petitioned or Proposed Action	90-day Finding
Ringed sawback turtle	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE
Shortnose sucker	Richard A. Gierk, New Frontiers Institute, Inc	10-01-2001	Delist	Negative (67 FR 34422)
Slackwater darter	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE
Snake River sockeye salmon	Delbert L. Lathim	02-10-1995	Delist	Negative (60 FR 25201)
Solano grass	National Wilderness Institute	02-03-1997	Delist	Negative (68 FR 13943)
Southern sea otter	L. van de Veide	11-07-1982	Delist	Negative (48 FR 06752)
Southern sea otter	Pacific Legal Foundation, Save Our Shellfish, Greater Los Angeles Council of Divers	02-03-1984	Delist	Negative (49 FR 28583)
Southern sea otter	Nancy E. Gregg	07-08-1998	Delist	NOT AVAILABLE
Ute ladies' tresses	Central Utah Water Conservancy District	05-07-1996	Delist	NOT AVAILABLE
Squirrel Chimney Cave shrimp	Florida Game and Fish Commission	08-08-1997	Delist	Negative (63 FR 67618)
Stephen's kangaroo rat	Riverside County Farm Bureau	04-26-1995	Delist	NOT AVAILABLE
Tinian monarch	National Wilderness Institute	02-03-1997	Delist	Positive (64 FR 8533)
Tooth Cave ground beetle	Williamson County Commissioners Court	06-07-1993	Delist	Negative (59 FR 11755)
Tooth Cave pseudoscorpion	Williamson County Commissioners Court	06-07-1993	Delist	Negative (59 FR 11755)
Tooth Cave spider	Williamson County Commissioners Court	06-07-1993	Delist	Negative (59 FR 11755)
Uinta Basin hookless cactus	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE
Vernal pool fairy shrimp	Fairy Shrimp Study Group	02-29-1996	Delist	Negative (65 FR 18026)
Vernal pool tadpole shrimp	Fairy Shrimp Study Group	02-29-1996	Delist	Negative (65 FR 18026)
Western snowy plover	Surf-Ocean Beach Commission	07-29-2002	Delist	NOT AVAILABLE
Wood bison	Gary A. Plumlee	05-14-1998	Delist	Negative (63 FR 65164)
Woodland caribou	Greater Bonners Ferry Chamber of Commerce, Idaho	05-27-1998	Delist	Negative (65 FR 65287)
Wright fishhook cactus	National Wilderness Institute	02-03-1997	Delist	NOT AVAILABLE

Table 4. Reclassified species under the Endangered Species List (USFWS 2004c).

Current Status	Species Name	Status Change
T	Argali (Kyrgyzstan, Mongolia, Tajikistan)	06/23/1992: E->T
T	Birch, Virginia round-leaf	11/16/1994: E->T
T	Bladderpod, Missouri	10/15/2003: E->T
E	Butterfly, Schaus swallowtail	08/31/1984: T->E
T	Cactus, Siler pincushion	12/27/1993: E->T
T	Caiman, Yacare	05/04/2000: E->T
E	Cavefish, Alabama	09/28/1988: T->E
E	Chimpanzee (in the wild)	03/12/1990: T->E
T	Chimpanzee (captive)	03/12/1990: E->T
E	Chimpanzee, pygmy	03/12/1990: T->E
T	Crocodile, Nile	09/30/1988: E->T , 09/23/1993: E->T , 06/17/1987: E->T
T	Crocodile, saltwater (Australia)	06/24/1996: E->T
T	Daisy, Maguire	06/19/1996: E->T
T	Darter, snail	07/05/1984: E->T
E	Deer, Columbian white-tailed Columbia River DPS	07/24/2003: E->T
T	Eagle, bald (lower 48 States)	07/12/1995: E->T
T	Four-o'clock, MacFarlane's	03/15/1996: E->T
T	Leopard (Gabon to Kenya & southward)	01/28/1982: E->T
T	Monarch, Tinian (old world flycatcher)	04/06/1987: E->T

Current Status	Species Name	Status Change
T	Pearlshell, Louisiana	09/24/1993: E->T
T	Pogonia, small whorled	10/06/1994: E->T
T	Prairie dog, Utah	05/29/1984: E->T
T	Salmon, chinook (fall Snake R.)	11/02/1994: T->E
T	Salmon, chinook (spring/summer Snake R.)	11/02/1994: T->E
E	Salmon, chinook (winter Sacramento R.)	03/23/1994: T->E
E	Sea-lion, Steller (western pop.)	06/05/1997: T->E , 05/05/1997: T->E
T	Skullcap, large-flowered	01/14/2002: E->T
T	Trout, Apache	07/16/1975: E->T
T	Trout, greenback cutthroat	04/18/1978: E->T
T	Trout, Lahontan cutthroat	07/16/1975: E->T
T	Trout, Paiute cutthroat	07/16/1975: E->T
T	Wolf, gray Western Distinct Population Segment	04/01/2003: E->T
T	Wolf, gray Eastern Distinct Population Segment	04/01/2003: E->T , 03/09/1978: T->E

If the USFWS or NMFS receives information that threats have been sufficiently reduced and/or new information is available, then delisting or downlisting can be considered. In addition to consideration of the listing factors (ESA §4(a)(1)) mentioned previously, a species may be delisted only if the best scientific and commercial data substantiate that it is neither endangered nor threatened for one or more of the following reasons (50 CFR § 402.11(d), see Appendix A, page 40):

1. Extinction. A sufficient time allotment is required before delisting can occur for this reason, unless all individuals of the listed species had been previously identified and located, and were later found to be extirpated.
2. Recovery. The principal goal of USFWS and NMFS is to recover a listed species to a point at which protection under the Act is no longer required. A species may be delisted on the basis of recovery only if the best scientific and commercial data available indicate that it is no longer endangered or threatened.
3. Original data for classification error. Subsequent investigations may show that the best scientific and commercial data available when the species was listed, or the interpretation of such data, were in error.

After a species has been removed from the endangered or threatened list due to recovery in the original data, the USFWS or NMFS will continue to monitor its status to ensure that proper action has been taken. Emergency re-listing may occur if these monitoring efforts show that the species is again endangered or likely to become endangered (50 CFR §424.20, see Appendix A, page 40).

The purpose of the ESA petition process is to allow any individual or organization to direct the USFWS or NMFS attention to the conservation needs of a particular taxon, with the intention of having the USFWS or NMFS take regulatory action under the authority of the ESA. The petition process does not obligate the USFWS or NMFS to (1) take regulatory actions that are not supported by available data, (2) collect additional data to support a non-substantial petition, or (3) initiate listings/delisting or amendments to critical habitat designations if these actions are

precluded by other higher priority actions being undertaken by available Service's staffs and funding (see also 5 USC 553(e)).

Two types of actions can be petitioned under the provisions of the ESA. The first type is to list, reclassify, or delist species, and the second is to designate or revise critical habitat.⁴ To be considered, a petition document must clearly identify itself as a petition, be dated, and clearly indicate what action is being requested. It must also contain the petitioner's name, signature, address, telephone number, and business or institutional affiliation (see example in Appendix B, page 54).

Neither the ESA, USFWS, nor NMFS has a formal standard for the magnitude or recency of the data that should be provided to support a petition. However, the USFWS or NMFS will more likely reach a prompt determination if the petition contains or references recent data covering the taxon's entire range. Ideally, a status report for each state within that range should be written and submitted by a credible and recognized expert. The USFWS and NMFS must use the best available scientific and commercial data when making a decision regarding the petitioned action. Papers published in peer-reviewed journals are among the most desirable data sources. Unpublished information supplied by individuals with demonstrated knowledge in the subject area is generally considered to be reliable, as well.

Following the receipt of a valid, substantial petition, the USFWS or NMFS begins the process of reviewing the data in order prior to making a "90-day finding" (ESA § 4(b)(3)). The Services will find a petition "substantial" if the subject of the petition is eligible for treatment under the ESA and information contained in the petition, in Service files, or other readily available sources "would lead a reasonable person to believe that the petitioned action may be warranted" (50 CFR 424.14(b)(1), see Appendix A, page 40). If the petition is "substantial," the jurisdictional Service immediately begins gathering additional data in order to make a "12-month finding" (Figure 1). In both cases, the time frames for findings begin on the date the petition is received.

In making a 90-day finding, the Services will use information contained in the petition, information already available in Service files, and readily available reference sources. The Services will also provide copies of the petition to any appropriate

⁴ This report is intended to address ESA delisting and downlisting considerations. While critical habitat is mentioned as part of overall TES management and recovery, critical habitat considerations are outside the scope of this report.

state agency or affected tribal governments. Any information they provide is also used in making the 90-day finding.

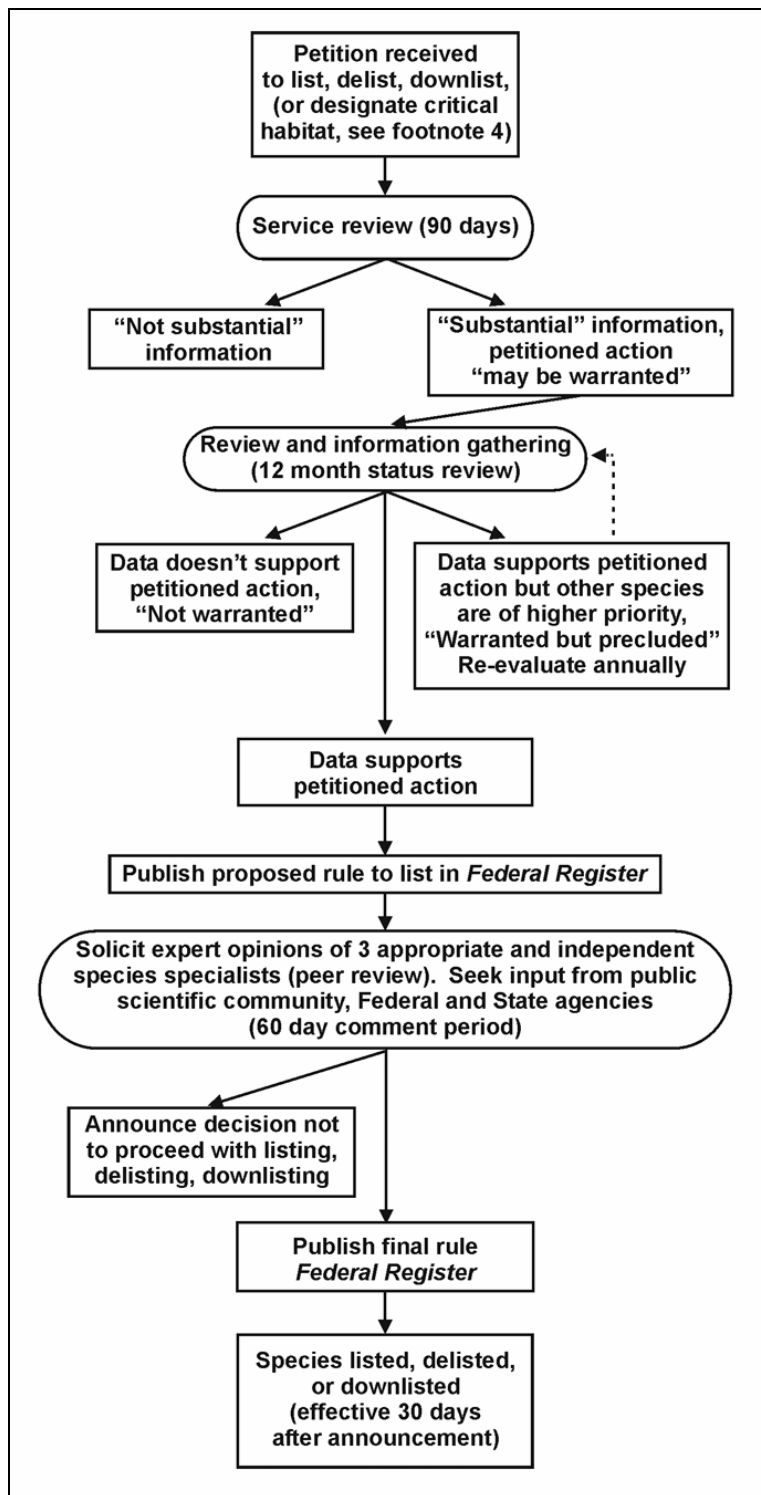


Figure 1. The petition process to list, delist, or downlist a species (adapted from USFWS 2000).

4 Case Studies

Legalities and Controversies Related to Endangered Species Listing

*Snail darter (*Percina tanasi*)*

The first significant controversy over the ESA involved a virtually unknown, 3-inch fish called a snail darter. Tennessee Valley Authority (TVA) began construction of Tellico Dam on the Little Tennessee River in 1966. In 1972, a Federal district court temporarily prohibited the completion of the dam pending a case brought by the Environmental Defense Fund (EDF) (EDF vs. TVA 1972). This court action was prior to enactment of the 1973 ESA. Both the Federal district court and the Sixth Circuit Court of Appeals decided in favor of TVA, and Tellico Dam construction resumed.

Based on the best scientific data at the time, the USFWS listed the snail darter as an endangered species on October 9, 1975 (40 FR 47506). Critical habitat was designated on the Little Tennessee River in Tennessee, on April 1, 1976 (41 FR 13926). However, this did not halt construction of the dam.

A series of citizen suits, appeals, amicus briefs, congressional action, and media attention followed. On June 15, 1978, in the landmark case of Tennessee Valley Authority v. Hill, the Supreme Court reached a decision regarding the scope of Section 7 of the ESA. The Court decided that Section 7 constituted an absolute bar against any actions authorized, funded, or carried out by Federal agencies that would jeopardize the continued existence of a listed species (TVA v. Hill 1978).

Soon after the Supreme Court's decision, Senator Howard Baker (R-TN) and Senator John Culver (R-IA) introduced a bill to amend the ESA to create a seven-member Endangered Species Committee (ESC) composed of the secretaries of the Interior, Agriculture, and Army, the chairman of the Council of Economic Advisors, the administrator of the Environmental Protection Agency, the administrator of the National Oceanic and Atmospheric Administration, and an individual nominated by the governor of the state in which a project was affected by the ESA. Power would be given to the board to exempt projects from Section 7 of the ESA with a 5 to 2 vote. It passed in Congress, and on November 10, 1978, President Carter signed the amendments into law. However, when the ESC met in January 1979, it voted

unanimously not to exempt Tellico Dam. The Tellico Dam was ultimately authorized under the Energy and Water Development Appropriations Act of 1980 that was signed by President Carter September 25, 1979. On July 21, 1983, the USFWS published an advance notice of a proposed rule to delist the darter (48 FR 33328). That notice stated that the USFWS was involved in an extensive snail darter survey of Tennessee River tributaries. Successful introductions of snail darters from the Little Tennessee River to other locations and new discoveries of healthy populations outside of the Little Tennessee River, led the USFWS to propose downlisting the darter from endangered to threatened. The final rule to downlist the snail darter to threatened status was published July 5, 1984 (49 FR 27510).

Delisting a Species in a Portion of its Range

Brown pelican (*Pelecanus occidentalis*)

The brown pelican was delisted in 1985 in southeastern United States and points northward along the Atlantic coast. Between 1957 and 1961 the brown pelican disappeared as a nesting species on the Louisiana coast and became nearly extirpated on the Texas coast (50 FR 4938). The severe and sudden population decline suggested to biologists that an extremely toxic agent was involved. Subsequent research implicated the organochlorine pesticide endrin as the probable causative substance. Around the same time, brown pelican populations in South Carolina showed some evidence of decreased reproduction, resulting primarily from eggshell thinning due to DDT and DDE accumulation.

Organochlorine pesticide pollution apparently contributed to the endangerment of the brown pelican via two mechanisms: (1) direct toxicity affected all age classes and (2) impaired reproduction reduced recruitment into the population. The brown pelican was listed as endangered throughout its United States range on October 13, 1970 under an earlier version of the ESA and was grandfathered in under the current 1973 Act, as amended. The brown pelican was listed as a result of observed population declines, population status questions in other expected contaminated areas, and continuing threats from contaminated food supplies (35 FR 16047).

The Environmental Protection Agency (EPA) placed a ban on the use of DDT in the United States in 1972 (37 FR 13369) and sharply curtailed the use of endrin. As a result, the environmental residue levels of these persistent compounds steadily decreased in most areas.

A corresponding increase in the eggshell thickness and reproductive success became evident in the early 1980s. Breeding population censuses of the eastern brown peli-

can, conducted annually from the late 1960s to the mid 1980s, indicated stable or increasing breeding populations in many areas (50 FR 4939). In the Federal Register of November 10, 1983 (48 FR 51736), the USFWS proposed to remove the southeastern population segment of the brown pelican from the List of Endangered and Threatened Wildlife. In the proposed rule, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate state agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Press releases inviting public comment were published in 15 major and local newspapers throughout the area affected by the rule (50 FR 4939).

A total of 47 comments from State wildlife agencies, local governments, national conservation groups and zoological societies, seabird hospitals, professional biologists, and other private citizens were received. Additionally, a petition with 281 signatures advocating the reclassification was received from John's Pass Seafood Company, FL. Many commentators favored a reclassification over delisting the brown pelican for the following reasons: (1) there was not an adequate explanation for the dramatic population increase and that the population could crash just as rapidly, (2) continued pesticide and pollution exposure, and (3) possible susceptibility due to natural phenomenon (flooding, severe storms, and fluctuations in food supplies). According to the USFWS none of the comments contained information that had not already been evaluated.

Based on the best available scientific data, the Eastern Brown Pelican Recovery Team (USFWS 1980) recommended that the pelican be removed from the List of Endangered and Threatened Wildlife in its range from Alabama eastward and northward. Even though the pelican was delisted in portions of its range, the USFWS ranked it as a National Species of Special Emphasis (47 FR 39890). Due to this status, a Regional Resource Planning Document (RRP) that specifically addresses the needs of the brown pelican was prepared by regional USFWS offices. This document emphasized the desirability for continued monitoring of breeding populations and pesticide levels, protection and management of nesting habitat, and further efforts toward research and public education regarding this species. RRs are also used by the USFWS both in short-term and long-term planning of funding allocations.

Delisting a Distinct Population Segment

Columbian white-tailed deer (Odocoileus virginianus leucurus), Douglas County Distinct Population Segment

The Columbian white-tailed deer is the westernmost representative of 30 subspecies of white-tailed deer. It was formerly distributed throughout the bottomlands and prairie woodlands of the lower Columbia, Willamette, and Umpqua River basins in Oregon and southern Washington. Early accounts suggested this deer was locally common, particularly in riparian areas along major rivers. Rapid decline in deer numbers occurred with the arrival and settlement of pioneers in the fertile river valleys. Conversion of brushy riparian land to agriculture, urbanization, and uncontrolled sport and commercial hunting caused the extirpation of this subspecies over most its range by the early 1900's. A small herd of 200 to 400 animals in the lower Columbia River area of Clatsop and Columbia counties, Oregon, and Cowlitz and Wahkiakum counties, Washington (Columbia River Population), and a disjunct population of unknown size in Douglas County, Oregon (Douglas County Population), survived. These two remnant populations are geographically separated by about 320 kilometers of unsuitable or discontinuous habitat (68 FR 43647).

The Columbian white-tailed deer was listed as endangered in 1967 under the Endangered Species Preservation Act (32 FR 4001), and subsequently listed under the Endangered Species Act of 1973, as amended. The Columbian White-tailed Deer Recovery Plan (Recovery Plan) was approved by the USFWS in 1976, and a revised version was approved in 1983. Because of the difference in distance, habitats, and apparent threats between the populations, the Recovery Plan addresses the recovery of each population separately.

The Douglas County and Columbia River populations of the Columbian white-tailed deer qualify as distinct under the Policy Regarding the Recognition of Distinct Vertebrate Population Segments (DPS) under the ESA (61 FR 4722). For a population to be listed under the Act as a distinct vertebrate population segment, two elements are considered: (1) the discreteness of the population segment in relation to the remainder of the species to which it belongs and (2) the significance of the population segment to the species to which it belongs.

A population may be considered discrete if it is: (1) separated from other populations of the same taxon by physical, physiological, ecological, or behavioral factors or (2) limited by international governmental boundaries where there are differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms (61 FR 4722). The Douglas County and Columbia River populations are discrete because they are geographically isolated from each other by over 320

km, much of which is discontinuous or unsuitable habitat. Columbian white-tailed deer are not migratory and appear to restrict their movements to relatively small home ranges. Laboratory research has also demonstrated that there may be a relatively large genetic difference between the Douglas County and Columbia River populations, which indicates a lack of gene flow between the two populations. As a result, the wide geographic gap in suitable habitat between the populations demonstrates that this subspecies has two discrete population segments.

The following issues are considered when determining population significance: (1) persistence of the discrete population segment in an unusual or unique setting for the taxon, (2) evidence that loss of the segment would result in a significant gap in the range of the taxon, (3) evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as a introduced population outside its historic range, and (4) evidence that the population segment differs from other populations of the species in its genetic characteristics (61 FR 4722). The Douglas County and Columbia River populations are considered significant based on two factors. First, the loss of either population would result in a significant gap in the range of the subspecies, and the loss of either population would substantially constrict the current range of the subspecies. Second, each population has genetic characteristics that are not found in the other population.

On March 11, 1967, the Columbian white-tailed deer was listed as endangered under the Endangered Species Preservation Act of 1966 (32 FR 4001). At that time the subspecies was believed to occur only along the Columbia River, whereas the population in Douglas County was believed to be hybridized with the Columbian black-tailed deer. The Columbian white-tailed deer was automatically included in the List of Endangered and Threatened Wildlife when the ESA was enacted in 1973. In 1978 the State of Oregon determined that white-tailed deer in Douglas County belonged to the Columbian subspecies.

In 1999 the USFWS published a proposed rule to remove the Douglas County DPS from the TES list. In the same notice, they proposed to establish two Distinct Population Segments (Columbia River and Douglas County populations) (64 FR 25263). A revised proposed rule to remove the Douglas County DPS was published June 21, 2002 (67 FR 42217).

Public comment was solicited for both proposals. The USFWS contacted appropriate Federal and State agencies, county governments, scientific organizations, and other interested parties and asked them to comment on the proposed rule. The USFWS also requested peer review from three independent scientists. The Service published newspaper notices in the Roseburg, OR, *News-Review*, and in the *Orego-*

nian, of Portland, OR, which invited public comment. In the period from the first proposed rule to the final rule, 105 comments were received. Ninety-five supported the proposed action, 15 opposed, and 4 were neutral. These comments came from Federal agencies, the State of Oregon, county and municipal governments, academic or agency scientists, the Recovery Team, peer reviewers, and independent individuals or groups. The comments ranged in topic but can be summarized into three general issues: (1) concerns regarding the post-delisting monitoring plan, (2) need for a translocation program, and (3) recommendations on additional research to be conducted for the Douglas County DPS.

The USFWS assessed the best scientific and commercial data information available concerning the threats to the population. They determined that the population was robust, and abundant habitat used by the deer was protected in Douglas County (67 FR 42227). On July 24, 2003 the final rule to delist the Douglas County DPS of Columbian white-tailed deer was published (68 FR 43647).

Delisting Based on a Status Review

Mexican bobcat (*Lynx rufus escuinapae*)

A subspecies of the common bobcat, *Lynx rufus*, the Mexican bobcat belongs to the mammalian family Felidae. Range information and subspecies information has been a controversial topic for many species, and the designation of 11 to 14 subspecies within *Lynx rufus* has been questioned. *Lynx rufus escuinapae* is the southernmost race of bobcat found in Mexico. No population estimates are available, but the Mexican government has stated that this subspecies is widespread and numerous, is not specialized in its habitat requirements, and is highly ecologically adaptable (68 FR 39591). Little information is available on utilization of the subspecies in Mexico, but local hunting and trapping for subsistence is possible. There is no indication of illegal trade and no reported potential trade threats (68 FR 39591).

The Mexican bobcat was listed as an endangered species on June 14, 1976 (41 FR 24064). It was previously included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Appendix I of CITES includes all species threatened with extinction or affected by international trade. In 1992, the Mexican bobcat was transferred to Appendix II, based on the bobcat's widespread and stable status in Mexico and questionable taxonomy (68 FR 39591). Appendix II includes species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled. It also includes so-called "look-alike species," i.e., species of which the specimens in trade look like those of species listed for conservation reasons.

In response to a July 8, 1996 petition submitted by the National Trappers Association, Inc., Bloomington, Illinois, the USFWS reviewed the taxonomic information on the Mexican bobcat. In the 90-day finding dated July 2, 2003, the USFWS determined that it is unclear whether the subspecies is valid (68 FR 39590). If the subspecies designation is not valid, the USFWS will evaluate whether the listed entity meets the DPS policy (61 FR 4722), and if so, whether this population of bobcat should remain listed. (Refer to DPS policy reviewed in the above discussion of the Columbian white-tailed deer Douglas County DPS.)

The finding for the petition indicates that the petition presented substantial information to warrant a delisting action. Because of this, the USFWS was required to promptly commence a review of the status of the species. In the finding, the USFWS requested any additional information, comments, and suggestions from the public, governmental agencies, the scientific community, industry, and any other interested parties concerning the status of the Mexican bobcat throughout its range in Mexico.

As an outcome of the USFWS review, it was determined that the Mexican bobcat did not constitute a distinct population segment and may not constitute a separate subspecies. Consequently, on May 19, 2005 the USFWS proposed (FR 70 28895) that the Mexican bobcat be delisted.

Delisting Based on New Information

Preble's meadow jumping mouse (Zapus hudsonius preblei)

The Preble's meadow jumping mouse is a small rodent with a range originally thought to be limited to four counties in Colorado and two in Wyoming, and is known to occur on DoD (i.e., U.S. Air Force) installations within its range. The subspecies is associated with riparian areas that are subject to high levels of residential and agricultural use throughout its range. The subspecies was named in a petition dated August 9, 1994, by the Biodiversity Legal Foundation to be listed as threatened or endangered and that critical habitat be designated. Upon review, on May 15, 1995, the USFWS issued a 90-day finding that listing of the subspecies might be warranted (60 FR 13950). The USFWS continued to review the status of the mouse, and on March 25, 1997, put forth a proposal to list the subspecies as endangered, requested comment on the proposal (62 FR 14093), and conducted public hearings on the proposal (62 FR 24387). The USFWS indicated that habitat destruction or alteration and the inadequacy of existing regulatory mechanisms were the primary threats to the subspecies. At that time designation of critical habitat was not proposed. Based on information gathered by public comment and other sources, the

USFWS proposed on May 13, 1998 (63 FR 26517) that the subspecies be given threatened status effective June 12, 1998. At that time the USFWS recognized that there were uncertainties with the taxonomy of the species.

With the designation as threatened and the resultant administrative and other burdens therefore placed on many units of local, State, and Federal agencies, the USFWS proposed special standards for implementing the conservation of the mouse (63 FR 66777, December 3, 1998). These special standards, which are tailored to the individual species, are allowed for under Section 4(d) of the Act. These special conservation measures, which addressed rodent control, agricultural activities, landscaping, and water rights, were finalized on May 22, 2001 to remain in effect through May 22, 2004 (65 FR 39117, amended in 66 FR 28125).⁵ Subsequent USFWS rules allowed for exemption from Section 9 take provisions for certain noxious weed control and drainage ditch maintenance activities (66 FR 45829, 67 FR 61531).

On June 9, 2000, the Biodiversity Legal Foundation, Biodiversity Associates, South Dakota Resources Coalition, David C. Jones, and David C. Williams filed a suit in U.S. District Court against the USFWS for failure to designate critical habitat and prepare a recovery plan for the mouse. A subsequent court-mediated settlement was reached on June 4, 2002 for the identification and designation of critical habitat with the claim that the USFWS failed to prepare a recovery plan being dismissed. On July 17, 2002, the USFWS proposed the designation of critical habitat for the subspecies (67 FR 47154) and subsequently arranged for public hearings on the proposal (67 FR 225). The USFWS recognized that because of the existence of Installation Natural Resources Management Plans (INRMPs)⁶ and the associated protection provided, critical habitat designation on military installations was not necessary. Public comment on the draft economic analysis and the draft environmental assessment was requested on January 28, 2003 (68 FR 4160) with critical habitat being formally designated and in effect on July 23, 2003 (68 FR 37276).

On June 20, July 26, and August 27, 1999, the USFWS received petitions to delist the mouse.⁷ These petitions were not “formally” acted upon because upon receipt of

⁵ On February 24, 2004 the USFWS proposed (69 FR 8359) and subsequently finalized extending the amended special regulations (69 FR 29101).

⁶ Also Habitat Conservation Plans (HCPs) on non-Federal lands, as allowed for under Section 10 of the Act. (See for example City and County of Denver HCP, FR 68 6756).

⁷ The petitions were from Wyoming Senators Craig Thomas (R) and Mike Enzi (R), Representative Barbara Cubin (R) of Wyoming, and Governor Jim Geringer. See Table 4.

a petition to list a species, the USFWS has statutory obligations under the Act to complete the petition process. In listing the subspecies the USFWS reopened comment periods twice, held three public hearings, and used the best scientific information available at the time (68 FR 70523). In their 90-day notice of petition finding (68 FR 70523, March 31, 2004) the USFWS initiated a status review to include 12-month and 5-year review.

Currently (as of February 2005, 70 FR 21) the USFWS has announced a 12-month finding that proposes, based on the best scientific and commercial information available, to delist Preble's meadow jumping mouse. This proposed action is based in part on new scientific information, a part of which was derived from studies supported by DoD, that indicate that Preble's appears to lack distinct morphological and genetic differences and is not likely a valid species within the definition allowed by the Act (see also Arizona agave case study below).

Delisting Resulting from Petition by Another Federal Agency

Arizona agave (Agave arizonica)

The Arizona agave is a member of the Agave family with limited distribution in Arizona. In fact, the plant had been reported only from a very small area in central Arizona in and around the Tonto National Forest. The plant was initially proposed for inclusion on the list of endangered plants on June 16, 1976 (41 FR 24532). Implementation of the 1978 Amendments to the ESA effectively resulted in the USFWS in 1983 (48 FR 22757) reproposing to list the plant as endangered based on extremely low (only 13 populations) numbers of the plant with threats from habitat destruction or modification, harvest for ornamental uses, cattle grazing, and inadequate protection. Based on the best scientific and commercial information available at the time, the plant was formally listed as endangered June 18, 1984 (49 FR 21055).

After its listing, on May 7, 1985, the U.S. Department of Agriculture, through the U.S. Forest Service (USFS), petitioned the USFWS to remove the taxa from endangered and threatened status. As justification the USFS submitted reports that supported the possibility that the taxa might actually be a hybrid and therefore not a species, as defined by the ESA (ESA § 3(15)), appropriate for listing. Based on subsequent peer review and review of all available data concerning the plant, the USFWS decided that the information was inconclusive (52 FR 2239, January 21, 1987) and delisting at that time was not warranted. However, further taxonomic and ecologic investigations were planned with the intent to establish if the plant supported species status.

From the mid-1980s through 1994 a number of studies were initiated or finalized addressing the species status of Arizona agave. Taken together all of the scientific information available currently indicates that *Agave arizonica* is most likely a first generation hybrid between two other agave species (*Agave chrysantha* and *Agave toumeyana* var. *bella*), and does not sexually reproduce by itself. It is therefore not a taxa or species for which ESA protection is allowed. Based on this, the USFWS has proposed (70 FR 1858, January 11, 2005) that the plant be delisted.

Unsuccessful Petitions

Mexican spotted owl (Strix occidentalis lucida)

The Mexican spotted owl was listed as a threatened species on April 15, 1993 (58 FR 14248). This action was taken due to the present or threatened destruction, modification, or curtailment of its habitat or range, the inadequacy of existing regulatory mechanisms, the potential for catastrophic wildfire, competition pressures, and predation.

The Board of Supervisors of Apache County, Arizona, submitted a petition to delist the Mexican spotted owl to the USFWS on June 25, 1993. The petitioners cited the loss of jobs, business, education, recreation, wildlife, fisheries, forest health, fire danger, and watershed conditions as reasons to delist the owl. The impacts of listing the Mexican spotted owl on jobs etc. cannot be considered in making listing determinations (50 CFR 424.11(b), see Appendix A, page 40). These impacts can, however, be considered when designating critical habitat for a listed species.

The petitioners referred to forest health and fire susceptibility as reasons to delist the Mexican spotted owl. They stated that forests are currently denser compared to pre-European settlement, and timber stands are at great risk of disease and catastrophic fire. Accumulations of both standing and downed fuels were also cited as factors causing high risk to forest health (58 FR 49467). The petitioners also stated that the listing of the Mexican spotted owl and the habitat area required under the “recovery strategy” would hamper efforts to manage for healthy forest and reduce accumulated fuels and dense forest understories caused by decades of fire suppression (58 FR 49467).

The USFWS responded to these issues in the 90-day finding on the petition (58 FR 49467). They agreed with the petitioners that many areas of the Southwest are at substantial risk of catastrophic fire, a risk cited as a factor for listing the subspecies in the final rule (58 FR 14248). The USFWS indicated that consideration of fuel loading and long-term forest health would be essential in the development of a com-

prehensive plan to conserve the Mexican spotted owl. They acknowledged the need to address all aspects of forest health during the recovery planning process. Furthermore, the USFWS stated that because forest health and fire risk were associated with subspecies persistence, the listing of the Mexican spotted owl would be expected to promote forest health.

The USFWS consequently found that the petition, publications referenced in the petition, or information available to them, did not present substantial information indicating that the petition action be warranted (58 FR 14248).

Vernal pool fairy shrimp (Branchinecta lynchi) and vernal pool tadpole shrimp (Lepidurus packardii)

On September 19, 1994, the final rule to list the vernal pool fairy shrimp and vernal pool tadpole shrimp as threatened and endangered, respectively, was published in the Federal Register (59 FR 48136). These fresh-water crustacean species are endemic to vernal pool habitats in California and southwestern Oregon. Each is about the size of a dime and live a brief life within vernal pools, seasonal wetlands that fill with water during the fall and winter rains. The vernal pool fairy shrimp and vernal pool tadpole shrimp were listed due to human-induced threats to their ephemeral habitats, primarily urban development and conversion of land to agricultural use.

The Fairy Shrimp Study Group submitted a petition to the USFWS to delist the vernal pool fairy shrimp and vernal pool tadpole shrimp on February 29, 1996. The Fairy Shrimp Study Group was identified as the California Chamber of Commerce, Granite Construction, Teichert Aggregates, Sares-Regis Group, the California Cattlemen's Association, the Western Growers Association, and the California Farm Bureau Federation. The USFWS replied to the petition on March 8, 1996, notifying the group that due to a lack of funds, the response to their petition would be delayed. This was due to resolutions in effect from November 14, 1995, to January 26, 1996, resulting in the suspension of the listing program and reassignment of listing personnel to other activities. On October 22, 1997, the petitioner filed a case in Federal court challenging the failure of the USFWS to address the delisting petition (65 FR 18026). In a settlement with the petitioner reached on October 26, 1999, the USFWS agreed to evaluate the best scientific and commercial information available. The data and information evaluated were to include relevant geographic information on the location of vernal pools and fairy shrimp, including information generated in Section 7 consultations since 1996.

The petition asserted that delisting the vernal pool fairy shrimp and vernal pool tadpole shrimp was warranted because the original data used for classification was

in error. The petition contended the listing was erroneous for four general reasons: (1) the original data and studies supporting the listing, including the original petitions to list the species, were inadequate; (2) the original information relied upon was not subjected to independent peer review; (3) new studies indicate that California has widespread vernal pool habitat that is under little or no threat; and (4) the original listing information did not correctly establish the threats to the species and their vernal pool habitat.

The USFWS commented on the petition and its assertions. It found that, in every case, the petitioners did not identify or provide any alternative information to demonstrate the original finding was in error. Based on their review of information on the vernal pool crustaceans added to their files since the time of listing and the information that the petitioner asked them to review, it was determined that no substantial information existed to warrant the delisting of the vernal pool fairy shrimp and vernal pool tadpole shrimp.

Successful Petition – But Species Status Unchanged

Peirson's milk-vetch (Astragalus magdalenae var. peirsonii)

Peirson's milk-vetch is a short-lived perennial in the Pea family (Fabaceae) (68 FR 52785). It was listed as a threatened species on October 6, 1998 (63 FR 53596) after the State of California listed it as an endangered species under the California Endangered Species Act in 1979.

A petition to delist Peirson's milk-vetch was submitted by David P. Hubbard, Ted J. Griswold, and Philip J. Giacinti, Jr. of Procopio, Cory, Hargreaves & Savitch, LLP, on behalf of the American Sand Association (ASA), the San Diego Off-Road Coalition, and the Off-Road Business Association (ASA et al. 2001, Appendix 1). The USFWS received the petition on October 25, 2001. The petition asserted that the original decision to list Peirson's milk-vetch was in error and cited the following reasons: (1) the original listing decision was made without an actual plant count, (2) the original listing relied on data developed prior to the implementation of the California Desert Protection Act (CDPA), (3) the original listing decision relied on field studies that the Bureau of Land Management (BLM) has since determined were biased and scientifically unsound, (4) monitoring studies indicate that *A. magdalenae* var. *personii* is abundant and thriving; and (5) plant counts confirm that the Imperial Sand Dunes support more than 100,000 individual plants and a healthy seed bank.

On November 6, 2002, the USFWS received a 60-day notice of intent to sue from the ASA et al. The notice cited the failure by the USFWS to act on the petition as required by the ESA (ESA §4). In August 2003 a settlement was reached, calling for the USFWS to make a 90-day finding by August 29, 2003, and if the 90-day finding is that the petition contained substantial information that delisting may be warranted, a 12-month finding by May 31, 2004.

After reviewing the petition, literature cited in and provided with the petition, and other information in their files, the USFWS found that the petition presented substantial information indicating that delisting Peirson's milk-vetch may be warranted (68 FR 52786). At that time, they solicited information and comment on Peirson's milk-vetch and the 90-day finding to initiate a status review to determine if delisting the species is warranted (68 FR 52784). In concert with that status review, the USFWS proposed to designate critical habitat for the species (August 5, 2003; 68 FR 46143) and requested comments on the draft economic analysis for the designation of that critical habitat.⁸

In the May 28, 2004, 12-month finding (69 FR 31523) the USFWS found that the petitioned action (i.e., to delist the species) was not warranted. Subsequently, the USFWS proposed and designated, effective Sept. 3, 2004, the establishment of over 21,000 acres of critical habitat (69 FR 47330).

Successful Petition – Species Delisted

Johnston's frankenia (Frankenia johnstonii)

This species of plant was first collected in 1966 in Zapata County, Texas. Johnston's frankenia is a low, somewhat sprawling, perennial shrub. It grows on open or sparsely vegetated, rocky, gypseous hillsides or saline flats. Johnston's frankenia was listed as an endangered species on August 7, 1984, due to the following vulnerabilities: (1) low numbers and restricted distribution of populations; (2) low numbers of individual plants; (3) threats to the integrity of the species' habitat; (4) direct loss from construction associated with highways, residential development, and oil- and natural gas-related activities; and (5) the species' low reproductive potential.

⁸ The ESA § 4 requires consideration of economic and other relevant impacts prior to making a decision on the designation of critical habitat.

On February 8, 1997, the USFWS received a petition from the National Wilderness Institute to delist *Frankenia johnstonii* from the List of Endangered and Threatened Wildlife and Plants on the basis of original data error. The USFWS was unable to respond to the petition due to funding issues. In 1998, delisting activities were placed within Tier 2 of the Fiscal Years 1998 and 1999 Listing Priority Guidance (63 FR 25502). Under this guidance, the USFWS began to process the *Frankenia johnstonii* petition. The petition cited the Report to Congress on the Endangered and Threatened Species Recovery by the USFWS in 1990 as stating, “new populations have been found in the lower Rio Grande Valley, and this species now appears to be more abundant and widespread than previously thought.”

The USFWS indicated that the petitioner referred to sufficient information to validate the request, but the level of data they refer to was not available to the USFWS at the time of listing. The USFWS also did not have locality maps, size, or viability information for all the known populations, nor the data to analyze threats of the populations. The USFWS received a report of an ongoing study of the species from the Texas Parks and Wildlife Department (TPWD) in the spring of 2000. Based on the information in the report and other information acquired since the listing rule, on May 22, 2003, the USFWS proposed to delist *Frankenia johnstonii* (68 FR 27961). It is currently on the list of species proposed for status change.

Successful Petition – Species Downlisted

Missouri bladderpod (Lesquerella filiformis)

The Missouri bladderpod is an annual plant restricted to shallow soils of limestone glades in southwestern Missouri and northwestern Arkansas and, occasionally, dolomite glades in north-central Arkansas (68 FR 34569). It was listed as endangered January 8, 1987, due to the following threats identified by the USFWS: (1) vulnerability of small populations to overcollecting and human disturbance, (2) lack of research on proper management techniques necessary to maintain and promote populations of the species, (3) potential impacts of annual maintenance activities to populations located on highway rights-of-way, (4) seed destruction by insects and fungal infections, and (5) inadequate protection or management on public and private property necessary for the species' continued existence. Other threats were later identified, including exotic plant encroachment and habitat destruction due to urban expansion (68 FR 34570).

The Missouri Department of Conservation (MDC) submitted a petition to the USFWS to reclassify the plant from endangered to threatened. On March 18, 1998, the USFWS responded to the petition, indicating that based on the USFWS Listing

Priority Guidance (published December 5, 1996, 61 FR 64475; see also 64 FR 57114, October 22, 1999), the petition could not be addressed until other higher priority listing actions were resolved. The petition to reclassify the Missouri bladder pod was subsequently considered and the 90-day finding and the 12-month finding indicated that the petition action was warranted (68 FR 34569, June 10, 2003).

In the recovery plan for the species the following delisting criteria were given: 30 self-sustaining populations, 15 of which are in secure ownership, must be at least one-half acre in size each and show self-sustaining populations for at least 7 years. In the status review process the USFWS referred to the recovery plan and noted the following management actions: (1) an inventory of suitable habitat for new populations, (2) the protection and management of existing populations, (3) the continued monitoring of populations and initiation of research on the species, (4) the development and initiation of management programs on protected sites, (5) the establishment of new populations on public land, and (6) the development of public awareness and support to further the conservation of the species. Although there were some information gaps concerning the life history requirements of the Missouri bladderpod, the USFWS determined that research conducted since the species was listed in 1987 significantly improved the understanding of the species. Extensive research through Truman State University, Missouri, and the National Park Service at Wilson's Creek National Battlefield proved to be an integral part to that understanding.

Section 4 of the ESA and regulations (50 CFR 424, see Appendix A, page 40) published to implement the listing provisions of the ESA, describe the procedures for determining whether to add, reclassify, or remove a species from the List of Endangered and Threatened Plants using five factors. In both the proposed and final rules to reclassify the Missouri bladderpod as threatened, the USFWS explained these factors and their application to the Missouri bladderpod (68 FR 34571 and 68 FR 59340). After explaining these factors, giving a summary of the species' status, and outlining available conservation measures in the proposed rule, the USFWS requested public comment concerning the reclassification of the species. The USFWS also published legal notices in the *Arkansas Democrat-Gazette*, the *Kansas City Star*, and *The News-Leader* out of Springfield, Missouri. The USFWS also contacted elected officials, local governments, Federal and State agencies, scientific organizations, and interest groups through a press release and related fact sheets, faxes, mailed announcements, telephone calls, and e-mails. Only four responses were received (one from a State agency and three from peer reviewers). MDC expressed support for the reclassification of the Missouri bladderpod based on the decline of threats, efforts taken to protect and conserve the species, and the discovery of new populations (68 FR 59339). All three of the peer reviewers submitted comments that supported the reclassification. They also brought up key issues such as

the importance of long-term population monitoring, exotic species encroachment, lack of management on non-public lands, and fire suppression.

Because of the Missouri bladderpod's significant progress toward recovery, the USFWS determined that the endangered designation no longer correctly reflected its status. The final rule (October 15, 2003, 68 FR 59337) changed the status of *Lesquerella filiformis* from endangered to threatened, and it now receives Federal protection and recovery provisions provided by the ESA for threatened plants.

5 Conclusions and Implications for Delisting Species on Military Lands

Delisting of threatened or endangered species occurring on military lands would provide the best alternative for reducing potential conflicts between Federal requirements for (1) protection and recovery of listed species, and (2) nationally essential and other Army operations. Simply put, delisting of species or populations occurring on Army lands would satisfy the goals and intent of the ESA and at the same time relieve much of any related regulatory burden and operational constraints on military mission activities. As noted in this report, delisting can be due to extinction, new information on population status or taxonomic affiliation, or recovery of the species. For any species, and most certainly those occurring on military lands, delisting due to extinction is intrinsically unacceptable and, for species present on Army lands, has not occurred. Delisting due to new status information or taxonomic review is relatively infrequent. New information can include not only information directly relative to the species (e.g., numbers, range), but also information on the status (e.g., extent, magnitude, imminence) of threats to survival and recovery. Nonetheless, the possibility of delisting due to new information illustrates the importance of continued scientific and other review and inquiry, including that by the military. This situation can be illustrated by that of the Preble's meadow jumping mouse. In this instance, new genetic information, derived from continued efforts by multiple public agencies, including those within the DoD, indicates that continued listing of that taxon may not be warranted (70 FR 5404, Feb. 2, 2005). This review is particularly noteworthy because, in final analysis, previously established critical habitat will no longer be identified as such. A similar situation existed with the Arizona agave. In this instance, direct involvement by the USFS can be considered to have led to the removal of that plant from the list.

Although delisting of endangered species is a relatively uncommon occurrence, the opportunities for delisting species occurring on Army lands may be greater than the overall record indicates. In some cases populations on Army lands are at or above recovery objectives for their recovery region (e.g., black-capped vireo and golden-cheeked warbler populations). On many installations populations are increasing and are projected to achieve recovery objectives within a few years (e.g., red-cockaded woodpeckers [RCW] on Fort Benning, GA, Fort Bragg, NC, Fort Polk, LA, and Fort Stewart, GA). Progress toward recovery of some listed populations on Army installations suggests a consideration for Army wildlife biologists, planners,

and policymakers in initiating and/or participating in delisting petition actions. Issues, constraints, and opportunities for Army participation in the delisting process are discussed below.

Criteria for Delisting

Species Recovery

Successful petitions for delisting species based on recovery focus on documenting attainment of recovery objectives, as identified in the established recovery plan for that species. The case study for the Mexican spotted owl shows that citing factors other than recovery status will not result in a successful petition. As applied to military installations, citing factors such as impact on training readiness or economic costs could not be considered favorably in petition reviews. Also inadequate, credible information on population status as shown in the vernal pool fairy shrimp and tadpole shrimp case study would result in an unsuccessful petition. On Army lands, however, status of listed populations occurring on installation lands is relatively well known. Installations are required to implement management and monitoring programs for these populations through the installation Endangered Species Management Plan (ESMP) component of the INRMP. Depending on the species, on many installations population status is determined on an annual basis and monitoring programs have been conducted for a number of years, providing a historical trend for these populations. A potential limitation of monitoring programs on Army lands as it relates to petitions for delisting is that population status will only be known for lands under Army management. Recovery objectives that rely on populations managed by other public agencies or private entities will require adequate documentation for those populations also. In those cases where Army installation populations comprise the entire designated recovery population, information on the status of populations on non-installation lands would not be a limiting factor.

Successful petitions also must document that any threats that contributed to listing no longer jeopardize the species. Many of the common threats cited in species recovery plans such as habitat loss, urbanization, and agricultural practices are not commonly present on Army lands. Army lands are typically and in effect “refugia” from many of the development and other risks that contribute to a species being listed. Species recovery plans do not cite military training as a threat to the continued existence of species. Thus, military training and general installation operations might not be a critical determinant for delisting actions. However, the requirements for continued monitoring of populations after delisting would likely include tracking of effects of training and testing operations on populations on military lands.

Range-wide versus Recovery by Population

Army lands rarely encompass the entire range of a listed species known distribution. Populations typically are distributed across a range of governmental and private land holdings. Recovery objectives in recovery plans usually reflect this population distribution across diverse land management authorities.

The RCW recovery plan is a case in point. This recovery plan delineates 13 primary core populations, 10 secondary core populations, and 16 essential support populations, all with designated recovery goals. Within a primary core population for example, there may be several contributing land management agencies or authorities with their own individual recovery goals. Army installations contribute significantly to 4 of the 13 primary core RCW populations. Forts Stewart and Benning comprise the sole land management authority designated for their respective recovery unit populations. However, Forts Bragg and Polk share recovery responsibility with other Federal, State and non-governmental land management authorities for their primary recovery unit population. The advisability of a DoD-lead initiative to delist a species would likely depend on the proportion of the populations over which DoD had management authority. In the example for the RCW, it is evident that a delisting petition would require extensive partnering across a broad spectrum of land ownerships and management authorities. Even if the Fort Benning and Fort Stewart populations reached the stated recovery goal, those populations could not be delisted because they are part of larger identified recovery units and furthermore are not considered distinct population segments.

Species can be delisted by geographical region or subpopulation if those populations are considered distinct (i.e., distinct population segments). Although the brown pelican and Columbian white-tailed deer were listed prior to the implementation of the distinct population segment concept and policy, those species' case studies presented in this report provide examples of delisting of distinct regional or subpopulations. Where an installation population represents a significant proportion of a listed species population, it may be feasible for DoD to initiate a delisting action. Fort Hood, TX, provides an example where these criteria may be met. This installation supports significant populations of both the endangered golden-cheeked warbler and black-capped vireo. Current populations on the installation are more than double the recovery objectives for these species in the population region⁹ in which

⁹ As used in this report, the various populations or population regions identified in the golden-cheeked warbler recovery plan can be considered analogous to "recovery units" as identified in the recovery plan for the red-cockaded woodpecker.

Fort Hood occurs. Fort Hood is the only significant Federal land holding in this “recovery unit” and is recognized as the predominant recovery population in this “recovery unit.” Under criteria discussed in the Columbian white-tailed deer case study, the Fort Hood population could not be considered for delisting as a distinct population segment since it would not be considered discontinuous with other populations across the range. However the Fort Hood population would meet criteria similar to that applicable to the brown pelican in that the population exceeds recovery objectives for that portion of the species’ range and threats to the continued existence of these populations (cowbird parasitism and habitat loss) have been mitigated and minimized. A determinative factor that may preclude delisting of the Fort Hood populations by region is the consideration that Fort Hood populations may not be sustainable without recovery of populations in other recovery units, i.e. if the “best scientific data available” suggests or fails to determine that the Fort Hood populations would be self-sustaining.

Policy and Procedural Considerations for Initiating a Delisting Petition

Nothing in the ESA or implementing Federal Regulations precludes the Army from initiating a petition to delist a species. Many of the criteria necessary for consideration by the Army to initiate a petition to delist a species are discussed earlier. From the policy and procedure standpoint, Army decisionmakers should consider several factors before deciding to proceed with a delisting petition. First, as shown in the snail darter case study, there is potential for extensive and extended litigation associated with petition actions. The petitioner (e.g., Army, DoD) should be prepared to precisely follow procedural requirements and have adequate data to support determinative facts of the petition. Second, the petitioning process has a fairly long time frame. Resources must be allocated to develop the initial petition and then to see it through the review process. The duration of the review process under the best of circumstances can be considered to be at least 1 year. Finally, unilateral submission of a petition to delist by the Army or DoD would be advisable only under a very limited set of circumstances. Most successful petitions to delist involve numerous petitioners and stakeholders since in most cases the species/populations under consideration occur across a range of land management authorities. Being out front on a petition action could expose the DoD as a lightning rod for dissenting interests. While this in and of itself should not be the reason for not proceeding with a delisting petition, it does underscore the need for a critical review of data and information relative to, reason for, and benefits to be derived from delisting. Conversely, initiating delisting or downlisting petition actions based on demonstrated species recovery, removal of threats, habitat or population improvement, or other factors directly attributable to Army species management actions would provide public and other exposure and demonstration of Army efforts and success in implementing the Act

while providing for national security. Most certainly, if new and substantive information on species status becomes available, the Army should actively consider initiating delisting or downlisting petitions.

Resources, in terms of dollars, time, and data, might be limiting factors for a petition to delist species. Providing this logistical support may be a potential role for the Army and DoD, with other stakeholders taking the primary lead in the petitioning process. Although delisting effectively eliminates the requirement of ESA Section 7 consultation, Army planners should also understand that although delisting may alleviate conflicts with military operations, there could still be substantial resources required to continue monitoring populations and/or other management actions after delisting. In most cases reviewed, the delisting action required continued population monitoring to provide information to ascertain if populations were at least continuing with numbers sufficient to maintain nonlisted status. However, there are and can be exceptions to this. The Arizona agave and Preble's meadow jumping mouse delisting activities discussed earlier are cases in point. In these instances, because of the reason for delisting (i.e., new information and that being that the species was not valid) no delisting monitoring by Federal or other entities would be necessary.

Summary

The following items summarize the critical issues related to delisting endangered species occurring on military lands based on reviews and information presented in this report:

1. Recovery of species and subsequent delisting on military lands is the best-case resolution to conflicts between military operations and requirements for threatened and endangered species under the ESA.
2. Army petitions for delisting should only be initiated when the status of populations warrants such a determination and defensible supporting documentation are available.
3. In most if not all cases petitions to delist range-wide or by geographic or population unit will require participation of multiple stakeholders.
4. The petition process requires significant financial resources and commitment of time and personnel.
5. Delisting of a species will still require subsequent commitment of resources to continue monitoring and management.
6. A petition to delist a species can be expected to have high public visibility and involvement.

References

- American Sand Association, San Diego Off-Road Coalition, Off-Road Business Association. 2001. Petition to remove the Peirson's milkvetch (*Astragalus magdalenae* var. *personii*) from the federal list of threatened and endangered species. Submitted to the United States Secretary of the Interior.
- Environmental Defense Fund v. Tennessee Valley Authority, 339 F.Supp. 806, 6th Cir. 1972.
- Public Law 108-136. 2003. The National Defense Authorization Act for FY 2004. 24 November 2003.
- Rubino, J., S. Sekscienski, B. Woodson, and T. Wills. 2005. Installation summaries from the FY 2004 survey of threatened and endangered species on army lands. Report SFIM-AEC-TS-TR-2005008, U.S. Army Environmental Center, Aberdeen Proving Ground, MD.
- Schreiber, E.R. and M.A. Reed. 1999. *Installation summaries from the 1998 survey of threatened and endangered species on army lands*, technical report (TR) 99/78, ADA369718, USACERL, September 1999.
- Tennessee Valley Authority v. Hill, 437 U.S. 153, 173, Supreme Court 1978.
- U.S. Fish and Wildlife Service. 2000. The petition process. [WWW document] URL <http://endangered.fws.gov/listing/petition.pdf>.
- U.S. Fish and Wildlife Service. 2001. The military and the endangered species act, interagency cooperation. [WWW document] URL <http://endangered.fws.gov/DOD>.
- U.S. Fish and Wildlife Service. 2004a. Delisted species report. [WWW document] URL http://ecos.fws.gov/tess_public/TESSWebpageDelisted?listings=0.
- U.S. Fish and Wildlife Service. 2004b. Reclassified species report. [WWW document] URL http://ecos.fws.gov/tess_public/TESSWebpageReclass.
- U.S. Fish and Wildlife Service. 2004c. Proposed status change/delisting species report. [WWW document] URL http://ecos.fws.gov/tess_public/TESSWebpageProposedDr.

Appendix A: Title 50: Wildlife and Fisheries

Electronic Code of Federal Regulations (e-CFR):

Title 50: Wildlife and Fisheries

PART 424—LISTING ENDANGERED AND THREATENED SPECIES AND DESIGNATING CRITICAL HABITAT

Authority: Pub. L. 93–205, 87 Stat. 884; Pub. L. 95–632, 92 Stat. 3751; Pub. L. 96–159, 93 Stat. 1225; Pub. L. 97–304, 96 Stat. 1411 (16 U.S.C. 1531 et seq.).

Source: 49 FR 38908, Oct. 1, 1984, unless otherwise noted.

Subpart A—General Provisions

§ 424.01 Scope and purpose.

(a) Part 424 provides rules for revising the Lists of Endangered and Threatened Wildlife and Plants and, where appropriate, designating or revising their critical habitats. Criteria are provided for determining species to be endangered or threatened and for designating critical habitats. Procedures for receiving and considering petitions to revise the lists and for conducting periodic reviews of listed species also are established.

(b) The purpose of these rules is to interpret and implement those portions of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), that pertain to the listing of species and the determination of critical habitats.

§ 424.02 Definitions.

(a) The definitions of terms in 50 CFR 402.02 shall apply to this part 424, except as otherwise stated.

(b) Candidate means any species being considered by the Secretary for listing as an endangered or a threatened species, but not yet the subject of a proposed rule.

(c) Conservation, conserve, and conserving mean to use and the use of all methods and procedures that are necessary to bring any endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

(d) Critical habitat means (1) the specific areas within the geographical area currently occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection, and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon a determination by the Secretary that such areas are essential for the conservation of the species.

(e) Endangered species means a species that is in danger of extinction throughout all or a significant portion of its range.

(f) List or lists means the Lists of Endangered and Threatened Wildlife and Plants found at 50 CFR 17.11(h) or 17.12(h).

(g) Plant means any member of the plant kingdom, including, without limitation, seeds, roots, and other parts thereof.

(h) Public hearing means an informal hearing to provide the public with the opportunity to give comments and to permit an exchange of information and opinion on a proposed rule.

(i) Secretary means the Secretary of the Interior or the Secretary of Commerce, as appropriate, or their authorized representatives.

(j) Special management considerations or protection means any methods or procedures useful in protecting physical and biological features of the environment for the conservation of listed species.

(k) Species includes any species or subspecies of fish, wildlife, or plant, and any distinct population segment of any vertebrate species that interbreeds when mature.

Excluded is any species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of the Act would present an overwhelming and overriding risk to man.

(l) State agency means any State agency, department, board, commission, or other governmental entity that is responsible for the management and conservation of fish, plant, or wildlife resources within a State.

(m) Threatened species means any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

(n) Wildlife or fish and wildlife means any member of the animal kingdom, including without limitation, any vertebrate, mollusk, crustacean, arthropod, or other invertebrate, and includes any part, product, egg, or offspring thereof, or the dead body or parts thereof.

Subpart B—Revision of the Lists

§ 424.10 General.

The Secretary may add a species to the lists or designate critical habitat, delete a species or critical habitat, change the listed status of a species, revise the boundary of an area designated as critical habitat, or adopt or modify special rules (see 50 CFR 17.40–17.48 and parts 222 and 227) applied to a threatened species only in accordance with the procedures of this part.

§ 424.11 Factors for listing, delisting, or reclassifying species.

(a) Any species or taxonomic group of species (e.g., genus, subgenus) as defined in §424.02(k) is eligible for listing under the Act. A taxon of higher rank than species may be listed only if all included species are individually found to be endangered or threatened. In determining whether a particular taxon or population is a species for the purposes of the Act, the Secretary shall rely on standard taxonomic distinctions and the biological expertise of the Department and the scientific community concerning the relevant taxonomic group.

(b) The Secretary shall make any determination required by paragraphs (c) and (d) of this section solely on the basis of the best available scientific and commercial in-

formation regarding a species' status, without reference to possible economic or other impacts of such determination.

(c) A species shall be listed or reclassified if the Secretary determines, on the basis of the best scientific and commercial data available after conducting a review of the species' status, that the species is endangered or threatened because of any one or a combination of the following factors:

- (1) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (2) Over utilization for commercial, recreational, scientific, or educational purposes;
- (3) Disease or predation;
- (4) The inadequacy of existing regulatory mechanisms; or
- (5) Other natural or manmade factors affecting its continued existence.

(d) The factors considered in delisting a species are those in paragraph (c) of this section as they relate to the definitions of endangered or threatened species. Such removal must be supported by the best scientific and commercial data available to the Secretary after conducting a review of the status of the species. A species may be delisted only if such data substantiate that it is neither endangered nor threatened for one or more of the following reasons:

- (1) Extinction. Unless all individuals of the listed species had been previously identified and located, and were later found to be extirpated from their previous range, a sufficient period of time must be allowed before delisting to indicate clearly that the species is extinct.
- (2) Recovery. The principal goal of the U.S. Fish and Wildlife Service and the National Marine Fisheries Service is to return listed species to a point at which protection under the Act is no longer required. A species may be delisted on the basis of recovery only if the best scientific and commercial data available indicate that it is no longer endangered or threatened.
- (3) Original data for classification in error. Subsequent investigations may show that the best scientific or commercial data available when the species was listed, or the interpretation of such data, were in error.

(e) The fact that a species of fish, wildlife, or plant is protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (see part 23 of this title 50) or a similar international agreement on such species, or has been identified as requiring protection from unrestricted commerce by any foreign nation, or to be in danger of extinction or likely to become so within the foreseeable future by any State agency or by any agency of a foreign nation that is responsible for the conservation of fish, wildlife, or plants, may constitute evidence that the species is endangered or threatened. The weight given such evidence will vary depending on the international agreement in question, the criteria pursuant to which the species is eligible for protection under such authorities, and the degree of protection afforded the species. The Secretary shall give consideration to any species protected under such an international agreement, or by any State or foreign nation, to determine whether the species is endangered or threatened.

(f) The Secretary shall take into account, in making determinations under paragraph (c) or (d) of this section, those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species, whether by predator control, protection of habitat and food supply, or other conservation practices, within any area under its jurisdiction, or on the high seas.

§ 424.12 Criteria for designating critical habitat.

(a) Critical habitat shall be specified to the maximum extent prudent and determinable at the time a species is proposed for listing. If designation of critical habitat is not prudent or if critical habitat is not determinable, the reasons for not designating critical habitat will be stated in the publication of proposed and final rules listing a species. A final designation of critical habitat shall be made on the basis of the best scientific data available, after taking into consideration the probable economic and other impacts of making such a designation in accordance with §424.19.

(1) A designation of critical habitat is not prudent when one or both of the following situations exist:

(i) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of such threat to the species, or

(ii) Such designation of critical habitat would not be beneficial to the species.

(2) Critical habitat is not determinable when one or both of the following situations exist:

(i) Information sufficient to perform required analyses of the impacts of the designation is lacking, or

(ii) The biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat.

(b) In determining what areas are critical habitat, the Secretary shall consider those physical and biological features that are essential to the conservation of a given species and that may require special management considerations or protection. Such requirements include, but are not limited to the following:

(1) Space for individual and population growth, and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally;

(5) Habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

When considering the designation of critical habitat, the Secretary shall focus on the principal biological or physical constituent elements within the defined area that are essential to the conservation of the species. Known primary constituent elements shall be listed with the critical habitat description. Primary constituent elements may include, but are not limited to, the following: roost sites, nesting grounds, spawning sites, feeding sites, seasonal wetland or dry land, water quality or quantity, host species or plant pollinator, geological formation, vegetation type, tide, and specific soil types.

(c) Each critical habitat will be defined by specific limits using reference points and lines as found on standard topographic maps of the area. Each area will be referenced to the State(s), county(ies), or other local governmental units within which all or part of the critical habitat is located. Unless otherwise indicated within the critical habitat descriptions, the names of the State(s) and county(ies) are provided for information only and do not constitute the boundaries of the area. Ephemeral reference points (e.g., trees, sand bars) shall not be used in defining critical habitat.

(d) When several habitats, each satisfying the requirements for designation as critical habitat, are located in proximity to one another, an inclusive area may be designated as critical habitat.

Example: Several dozen or more small ponds, lakes, and springs are found in a small local area. The entire area could be designated critical habitat if it were concluded that the upland areas were essential to the conservation of an aquatic species located in the ponds and lakes.

(e) The Secretary shall designate as critical habitat areas outside the geographical area presently occupied by a species only when a designation limited to its present range would be inadequate to ensure the conservation of the species.

(f) Critical habitat may be designated for those species listed as threatened or endangered but for which no critical habitat has been previously designated.

(g) Existing critical habitat may be revised according to procedures in this section as new data become available to the Secretary.

(h) Critical habitat shall not be designated within foreign countries or in other areas outside of United States jurisdiction.

§ 424.13 Sources of information and relevant data.

When considering any revision of the lists, the Secretary shall consult as appropriate with affected States, interested persons and organizations, other affected Federal agencies, and, in cooperation with the Secretary of State, with the country or countries in which the species concerned are normally found or whose citizens harvest such species from the high seas. Data reviewed by the Secretary may include, but are not limited to scientific or commercial publications, administrative reports, maps or other graphic materials, information received from experts on the subject, and comments from interested parties.

§ 424.14 Petitions.

(a) General. Any interested person may submit a written petition to the Secretary requesting that one of the actions described in §424.10 be taken. Such a document must clearly identify itself as a petition and be dated. It must contain the name, signature, address, telephone number, if any, and the association, institution, or business affiliation, if any, of the petitioner. The Secretary shall acknowledge in writing receipt of such a petition within 30 days.

(b) Petitions to list, delist, or reclassify species. (1) To the maximum extent practicable, within 90 days of receiving a petition to list, delist, or reclassify a species, the Secretary shall make a finding as to whether the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted. For the purposes of this section, “substantial information” is that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted. The Secretary shall promptly publish such finding in the Federal Register and so notify the petitioner.

(2) In making a finding under paragraph (b)(1) of this section, the Secretary shall consider whether such petition—

(i) Clearly indicates the administrative measure recommended and gives the scientific and any common name of the species involved;

(ii) Contains detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved and any threats faced by the species;

(iii) Provides information regarding the status of the species over all or a significant portion of its range; and

(iv) Is accompanied by appropriate supporting documentation in the form of bibliographic references, reprints of pertinent publications, copies of reports or letters from authorities, and maps.

The petitioner may provide information that describes any recommended critical habitat as to boundaries and physical features, and indicates any benefits and/or adverse effects on the species that would result from such designation. Such information, however, will not be a basis for the determination of the substantiality of a petition.

(3) Upon making a positive finding under paragraph (b)(1) of this section, the Secretary shall commence a review of the status of the species concerned and shall make, within 12 months of receipt of such petition, one of the following findings:

(i) The petitioned action is not warranted, in which case the Secretary shall promptly publish such finding in the Federal Register and so notify the petitioner.

(ii) The petitioned action is warranted, in which case the Secretary shall promptly publish in the Federal Register a proposed regulation to implement the action pursuant to §424.16 of this part, or

(iii) The petitioned action is warranted, but that—

(A) The immediate proposal and timely promulgation of a regulation to implement the petitioned action is precluded because of other pending proposals to list, delist, or reclassify species, and

(B) Expeditious progress is being made to list, delist, or reclassify qualified species,

in which case, such finding shall be promptly published in the Federal Register together with a description and evaluation of the reasons and data on which the finding is based.

(4) If a finding is made under paragraph (b)(3)(iii) of this section with regard to any petition, the Secretary shall, within 12 months of such finding, again make one of the findings described in paragraph (b)(3) with regard to such petition, but no further finding of substantial information will be required.

(c) Petitions to revise critical habitat. (1) To the maximum extent practicable, within 90 days of receiving a petition to revise a critical habitat designation, the Secretary shall make a finding as to whether the petition presents substantial scientific information indicating that the revision may be warranted. The Secretary shall promptly publish such finding in the Federal Register and so notify the petitioner.

(2) In making the finding required by paragraph (c)(1) of this section, the Secretary shall consider whether a petition contains—

(i) Information indicating that areas petitioned to be added to critical habitat contain physical and biological features essential to, and that may require special management to provide for, the conservation of the species involved; or

(ii) Information indicating that areas designated as critical habitat do not contain resources essential to, or do not require special management to provide for, the conservation of the species involved.

(3) Within 12 months after receiving a petition found under paragraph (c)(1) of this section to present substantial information indicating that revision of a critical habitat may be warranted, the Secretary shall determine how he intends to proceed with the requested revision, and shall promptly publish notice of such intention in the Federal Register.

(d) Petitions to designate critical habitat or adopt special rules. Upon receiving a petition to designate critical habitat or to adopt a special rule to provide for the con-

servation of a species, the Secretary shall promptly conduct a review in accordance with the Administrative Procedure Act (5 U.S.C. 553) and applicable Departmental regulations, and take appropriate action.

§ 424.15 Notices of review.

(a) If the Secretary finds that one of the actions described in §424.10 may be warranted, but that the available evidence is not sufficiently definitive to justify proposing the action at that time, a notice of review may be published in the Federal Register. The notice will describe the measure under consideration, briefly explain the reasons for considering the action, and solicit comments and additional information on the action under consideration.

(b) The Secretary from time to time also may publish notices of review containing the names of species that are considered to be candidates for listing under the Act and indicating whether sufficient scientific or commercial information is then available to warrant proposing to list such species, the names of species no longer being considered for listing, or the names of listed species being considered for delisting or reclassification. However, none of the substantive or procedural provisions of the Act apply to a species that is designated as a candidate for listing.

(c) Such notices of review will invite comment from all interested parties regarding the status of the species named. At the time of publication of such a notice, notification in writing will be sent to State agencies in any affected States, known affected Federal agencies, and, to the greatest extent practicable, through the Secretary of State, to the governments of any foreign countries in which the subject species normally occur.

§ 424.16 Proposed rules.

(a) General. Based on the information received through §§424.13, 424.14, 424.15, and 424.21, or through other available avenues, the Secretary may propose revising the lists as described in §424.10.

(b) Contents. A notice of a proposed rule to carry out one of the actions described in §424.10 shall contain the complete text of the proposed rule, a summary of the data on which the proposal is based (including, as appropriate, citation of pertinent information sources), and shall show the relationship of such data to the rule proposed. If such a rule designates or revises critical habitat, such summary shall, to the maximum extent practicable, include a brief description and evaluation of those activities (whether public or private) that, in the opinion of the Secretary, if undertaken, may adversely modify such habitat, or may be affected by such designation.

Any proposed rule to designate or revise critical habitat shall contain a map of such habitat. Any such notice proposing the listing, delisting, or reclassification of a species or the designation or revision of critical habitat shall also include a summary of factors affecting the species and/or critical habitat.

(c) Procedures—(1) Notifications. In the case of any proposed rule to list, delist, or reclassify a species, or to designate or revise critical habitat, the Secretary shall—

(i) Publish notice of the proposal in the Federal Register;

(ii) Give actual notice of the proposed regulation (including the complete text of the regulation) to the State agency in each State in which the species is believed to occur, and to each county or equivalent jurisdiction therein in which the species is believed to occur, and invite the comment of each such agency and jurisdiction;

(iii) Give notice of the proposed regulation to any Federal agencies, local authorities, or private individuals or organizations known to be affected by the rule;

(iv) Insofar as practical, and in cooperation with the Secretary of State, give notice of the proposed regulation to list, delist, or reclassify a species to each foreign nation in which the species is believed to occur or whose citizens harvest the species on the high seas, and invite the comment of such nation;

(v) Give notice of the proposed regulation to such professional scientific organizations as the Secretary deems appropriate; and

(vi) Publish a summary of the proposed regulation in a newspaper of general circulation in each area of the United States in which the species is believed to occur.

(2) Period of public comments. At least 60 days shall be allowed for public comment following publication in the Federal Register of a rule proposing the listing, delisting, or reclassification of a species, or the designation or revision of critical habitat. All other proposed rules shall be subject to a comment period of at least 30 days following publication in the Federal Register. The Secretary may extend or reopen the period for public comment on a proposed rule upon a finding that there is good cause to do so. A notice of any such extension or reopening shall be published in the Federal Register, and shall specify the basis for so doing.

(3) Public hearings. The Secretary shall promptly hold at least one public hearing if any person so requests within 45 days of publication of a proposed regulation to list, delist, or reclassify a species, or to designate or revise critical habitat. Notice of the

location and time of any such hearing shall be published in the Federal Register not less than 15 days before the hearing is held.

§ 424.17 Time limits and required actions.

(a) General. (1) Within 1 year of the publication of a rule proposing to determine whether a species is an endangered or threatened species, or to designate or revise critical habitat, the Secretary shall publish one of the following in the Federal Register:

(i) A final rule to implement such determination or revision,

(ii) A finding that such revision should not be made,

(iii) A notice withdrawing the proposed rule upon a finding that available evidence does not justify the action proposed by the rule, or

(iv) A notice extending such 1-year period by an additional period of not more than 6 months because there is substantial disagreement among scientists knowledgeable about the species concerned regarding the sufficiency or accuracy of the available data relevant to the determination or revision concerned.

(2) If an extension is made under paragraph (a)(1)(iv) of this section, the Secretary shall, within the extended period, take one of the actions described in paragraphs (a)(1) (i), (ii), or (iii) of this section.

(3) If a proposed rule is withdrawn under paragraph (a)(1)(iii) of this section, the notice of withdrawal shall set forth the basis upon which the proposed rule has been found not to be supported by available evidence. The Secretary shall not again propose a rule withdrawn under such provision except on the basis of sufficient new information that warrants a reproposal.

(b) Critical habitat designations. A final rule designating critical habitat of an endangered or a threatened species shall to the extent permissible under §424.12 be published concurrently with the final rule listing such species, unless the Secretary deems that—

(1) It is essential to the conservation of such species that it be listed promptly; or

(2) Critical habitat of such species is not then determinable,

in which case, the Secretary, with respect to the proposed regulation to designate such habitat, may extend the 1-year period specified in paragraph (a) of this section by not more than one additional year. Not later than the close of such additional year the Secretary must publish a final regulation, based on such data as may be available at that time, designating, to the maximum extent prudent, such habitat.

§ 424.18 Final rules—general.

(a) Contents. A final rule promulgated to carry out the purposes of the Act will be published in the Federal Register. This publication will contain the complete text of the rule, a summary of the comments and recommendations received in response to the proposal (including applicable public hearings), summaries of the data on which the rule is based and the relationship of such data to the final rule, and a description of any conservation measures available under the rule. Publication of a final rule to list, delist, or reclassify a species or designate or revise critical habitat shall also provide a summary of factors affecting the species. A rule designating or revising critical habitat will also contain a description of the boundaries and a map of such habitat and will, to the maximum extent practicable, be accompanied by a brief description and evaluation of those activities (whether public or private) that might occur in the area and which, in the opinion of the Secretary, may adversely modify such habitat or be affected by such designation.

(b) Effective date. A final rule shall take effect—

(1) Not less than 30 days after it is published in the Federal Register, except as otherwise provided for good cause found and published with the rule; and

(2) Not less than 90 days after (i) publication in the Federal Register of the proposed rule, and (ii) actual notification of any affected State agencies and counties or equivalent jurisdictions in accordance with §424.16(c)(1)(ii).

(c) Disagreement with State agency. If a State agency, given notice of a proposed rule in accordance with §424.16(c)(1)(ii), submits comments disagreeing in whole or in part with a proposed rule, and the Secretary issues a final rule that is in conflict with such comments, or if the Secretary fails to adopt a regulation for which a State agency has made a petition in accordance with §424.14, the Secretary shall provide such agency with a written justification for the failure to adopt a rule consistent with the agency's comments or petition.

§ 424.19 Final rules—impact analysis of critical habitat.

The Secretary shall identify any significant activities that would either affect an area considered for designation as critical habitat or be likely to be affected by the designation, and shall, after proposing designation of such an area, consider the probable economic and other impacts of the designation upon proposed or ongoing activities. The Secretary may exclude any portion of such an area from the critical habitat if the benefits of such exclusion outweigh the benefits of specifying the area as part of the critical habitat. The Secretary shall not exclude any such area if, based on the best scientific and commercial data available, he determines that the failure to designate that area as critical habitat will result in the extinction of the species concerned.

§ 424.20 Emergency rules.

(a) Sections 424.16, 424.17, 424.18, and 424.19 notwithstanding, the Secretary may at any time issue a regulation implementing any action described in §424.10 in regard to any emergency posing a significant risk to the well-being of a species of fish, wildlife, or plant. Such rules shall, at the discretion of the Secretary, take effect immediately on publication in the Federal Register. In the case of any such action that applies to a resident species, the Secretary shall give actual notice of such regulation to the State agency in each State in which such species is believed to occur. Publication in the Federal Register of such an emergency rule shall provide detailed reasons why the rule is necessary. An emergency rule shall cease to have force and effect after 240 days unless the procedures described in §§424.16, 424.17, 424.18, and 424.19 (as appropriate) have been complied with during that period.

(b) If at any time after issuing an emergency rule, the Secretary determines, on the basis of the best scientific and commercial data available, that substantial evidence does not then exist to warrant such rule, it shall be withdrawn.

§ 424.21 Periodic review.

At least once every 5 years, the Secretary shall conduct a review of each listed species to determine whether it should be delisted or reclassified. Each such determination shall be made in accordance with §§424.11, 424.16, and 424.17 of this part, as appropriate. A notice announcing those species under active review will be published in the Federal Register. Notwithstanding this section's provisions, the Secretary may review the status of any species at any time based upon a petition (see §424.14) or upon other data available to the Service.

Appendix B: Petition

PETITION
TO REMOVE THE PEIRSON’S MILKVETCH
(*Astragalus magdalenae* var. *personii*)
FROM THE FEDERAL LIST
OF THREATENED AND ENDANGERED SPECIES

Submitted to the United States Secretary of the Interior by
the American Sand Association, the San Diego Off-Road Coalition
and the Off-Road Business Association

October 24, 2001

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I. INTRODUCTION

Pursuant to Section 4(b)(3) of the Endangered Species Act¹ and Title 5, Section 553(e) of Administrative Procedures Act,² the American Sand Association, San Diego Off-Road Coalition and the Off-Road Business Association hereby submit this petition to remove the Peirson’s milkvetch (*Astragalus Magdalanae* var. *peirsonii*) from the Federal list of threatened and endangered species. The Peirson’s milkvetch (“PMV”) is a perennial desert plant that resides in the Imperial

¹ 16 U.S.C. § 1533(b)(3).

² 5 U.S.C. § 553(e).

Sand Dunes of south-eastern California, on lands under the control of the Bureau of Land Management (“BLM”), an agency within the Department of the Interior (“DOI”).

On October 6, 1998, the DOI listed PMV as a “threatened” plant species. The listing identified off-highway vehicle (“OHV”) use in the Imperial Sand Dunes as the primary threat to the PMV’s survival. However, data developed since the 1998 listing decision indicate that: (1) the PMV population is thriving in its traditional range, despite continued OHV use; (2) the PMV population consists of more than 100,000 individual plants and a healthy seed bank; and (3) the original listing was in error. These recent findings demonstrate that the PMV is *not* threatened and should be removed from the Federal list of threatened and endangered species.

II. SUMMARY OF ARGUMENT

Petitioners’ argument in support of this request to remove the PMV from the list of “threatened” species can be summarized as follows:

A. The Original Listing Was Made Without an Actual Plant Count

When the DOI adopted the Final Rule listing the PMV as threatened, it did so without benefit of “abundance data” showing how many PMV plants actually exist. In various letters and memoranda, staff from both BLM and the United States Fish & Wildlife Service (“USFWS”) expressed concern over this critical shortcoming and stressed the need for abundance data when making a listing decision.

B. The Original Listing Relied On Data Developed Prior to Implementation of the California Desert Protection Act

The Final Rule listing the PMV as threatened — though not issued until October 6, 1998 — relied entirely on data developed between 1976 and 1990, all of which pre-dated the implementation of the California Desert Protection Act (the “CDPA”). The CDPA designated more than 32,000 acres of the Imperial Sand Dunes as a Wilderness Area where roads and motor vehicles are not allowed. Many of the densest PMV colonies are located within this Wilderness Area. The protected status of these PMV colonies was not accounted for in the plant studies DOI relied on when making the listing decision.

C. The Original Listing Relied On Field Studies Which the BLM Has Since Determined Were Biased and Scientifically Unsound

Of the technical material used in the PMV listing decision, DOI relied most heavily on a 1990 study by ECOS, Inc. (the “1990 ECOS Study”), which concluded that the PMV was in sharp decline as a result of OHV use in the Imperial Sand Dunes. However, in a report published in November 2000, the BLM determined that the 1990 ECOS Study (which BLM had commissioned and paid for) was biased in its methodology and flawed in its analysis and conclusions. For this reason, BLM abandoned the 1990 ECOS study and the monitoring protocol it had recommended.

BLM's decision in this regard demonstrates that the 1990 ECOS study provides an insufficient basis for listing the PMV as a threatened species.

D. Monitoring Studies Published by BLM in 2000 and 2001 Indicate That the PMV Is Abundant and Thriving, But Becomes Dormant During Periods of Drought

After discarding the 1990 ECOS Study, BLM in 1998 embarked on a new survey program for the PMV and other special status plants in the Imperial Sand Dunes. The results of the surveys were published in November 2000 and again in June 2001. In both instances, BLM concluded that the PMV is (1) at least as abundant and widespread as it was in 1977; (2) at least as abundant in the areas *open* to OHV use as in the areas *closed* to OHV use; (3) capable of lying dormant for years in "seed-state" until sufficient rainfall triggers germination; and (4) affected more by climatic fluctuations than by human activities.

E. Plant Counts Conducted in Spring 2001 Confirm That the Imperial Sand Dunes Support More Than 100,000 Individual PMV Plants and a Healthy Seed Bank

In November 2000, BLM "temporarily" closed approximately 49,000 acres of the Imperial Sand Dunes to OHV recreation pursuant to an settlement agreement with the Center for Biological Diversity. In response to the "temporary closure," the American Sand Association, in the spring of 2001, retained biologists from Thomas Olsen Associates ("TOA") to conduct a comprehensive census of all PMV plants in the Imperial Sand Dunes. In the areas open to OHV use, TOA counted more than 71,000 PMV. TOA also conducted low-altitude helicopter surveys of the *closed* areas and found that they supported PMV plants in numbers similar to those observed in the open areas. These data reflect a thriving plant species with more than 100,000 individuals, ample seed stores, and a high probability of continued reproductive success.

F. The PMV No Longer Meets The Five Criteria For Listing

To be placed on the threatened or endangered species list — or to remain on that list — an animal or plant must be threatened by (1) the present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) the inadequacy of existing regulatory mechanisms; or (5) other natural or manmade factors affecting its continued existence. In this case, the PMV no longer meets any of these five listing criteria. It thrives in sufficient number (100,000+) throughout its range and, despite misinformation to the contrary, is not threatened by OHV use or alleged habitat alteration. Nor is it threatened by overutilization for recreational purposes or by disease. Further, the regulatory mechanisms in place since 1977, as modified over time, clearly have been adequate to protect the species. Finally, no other man-made or natural factor threatens the PMV's continued existence.

III. FACTUAL BACKGROUND

A. The PMV and Its Habitat

The PMV is a “stout, short-lived perennial reaching 20 to 70 cm (8 to 27 inches) high.”³ Its stems and leaves are covered with fine silky hairs, and the leaves themselves are 5 to 15 cm (2 to 6 inches) long, with 8 to 12 oblong leaflets.⁴ When the PMV blooms in late spring, its flowers are a dull purple, arranged in 10 to 17-flowered racemes.⁵ The seed pods of the PMV are 2 to 3.5 cm (0.8 to 1.4 inches) long, inflated, with a triangular beak.⁶ Among the various *Astragalus* species that inhabit the deserts of the southwest United States, the PMV has the largest seeds, each measuring 4.5 to 5.5 mm in length.⁷

The PMV occurs on slopes and hollows of windblown dunes in the Sonoran Desert, which includes the Imperial Sand Dunes of southeastern California, also known as the Algodones Dunes.⁸ The Imperial Sand Dunes form a dune “belt” some 40 miles long and 3 to 6 miles wide.⁹ The same winds that rake the dunes and create the habitat necessary for the PMV also scatter the plant’s seed pods and seeds, depositing them in the sand, where they will lie dormant until sufficient precipitation causes them to germinate.¹⁰ Although no one has determined how long a PMV seed can remain dormant and still reproduce when favorable conditions arise, circumstantial evidence — *e.g.*, an explosive germination event following years of drought — suggest that the plant’s seeds can remain dormant for three to ten seasons without loss of reproductive potential.¹¹ The PMV is a so-called “short-lived” perennial which germinates and blossoms in the spring and then largely dies off by the beginning of the hot summer months.¹² In a given year, tens of thousands of plants may be visible during April and May, but nearly all of them will be gone by

³ Final Rule, October 6, 1998, *Federal Register*, Vol. 63, No. 193, at p. 53599. A true and correct copy of the Final Rule is Attached as Exhibit 1 to this Petition. [Editor’s Note: None of the Exhibits to the Petition are included In this ERDC/CERL document.]

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

⁷ *Ibid.*

⁸ Thomas Olsen Associates, *Biology, Distribution, and Abundance of Peirson's Milkvetch and Other Special Status Plants of the Algodones Dunes, California*, 2 July 2001 (the “TOA Report”), at p. 1. A true and correct copy of the TOA Report is attached as Exhibit 2 to this Petition.

⁹ *Ibid.*

¹⁰ *Id.*, at pp 10-11.

¹¹ *Id.*, at pp 10-11.

¹² *Ibid.*

July.¹³ However, the disappearance of the plants does not occur until *after* seed pods have developed and been dropped to the ground, guaranteeing another generational cycle for the PMV.¹⁴ In the Imperial Sand Dunes, the PMV shares vast tracts of land with OHV recreationists. However, some of the densest PMV colonies in the Imperial Sand Dunes are found in the designated Wilderness Area north of State Highway 78 (“SR-78”), where motor vehicles are prohibited.¹⁵ As to the *open* dune areas, OHV travel patterns rarely intrude into PMV colonies. The BLM acknowledged this fact in a November 2000 report entitled, *Monitoring of Special Status Plants in the Algodones Dunes, Imperial County, California* (the “November 2000 Monitoring Study”):

“Although all 6 species [including the PMV] appear to be at least as widespread and abundant in the entire open area in 1998 as they were in 1977, *this likely results from the fact that OHV use in the open areas does not encroach — at least very intensively — on much of the habitat of the plants in relatively large portions of the open area away from OHV staging areas.*” (November 2000 Monitoring Study, BLM, at p. v.)¹⁶ (*Emphasis added.*)

Note that the PMV, while widespread throughout the dune system, is highly habitat specific, growing in identifiable colonies where conditions are suitable.¹⁷ The plant is not randomly distributed, except to the extent that appropriate habitat for PMV colonies occurs in a large number of areas in both the open and closed portions of the dunes.¹⁸

B. Attempts to List the PMV as “Threatened”

1. Proposed Listing in 1992

On May 8, 1992, the USFWS issued a proposed rule for listing seven desert plants of the taxa *Astragalus* — including the PMV — as either threatened or endangered. In the proposed rule, USFWS asserted that the PMV is “[threatened by] the alteration of habitat from off-road vehicle

¹³ *Ibid.*

¹⁴ *Ibid.*

¹⁵ Memorandum from BLM State Director to USFWS Field Supervisor, dated November 1, 1996, at p. 1. A true and correct copy of this memorandum is attached as Exhibit 3 to this Petition.

¹⁶ A true and correct copy of the November 2000 Monitoring Study is attached as Exhibit 4 to this Petition.

¹⁷ TOA Report, at pp. 3-5.

¹⁸ *Ibid.*

activity.”¹⁹ The proposed rule also concluded that the plant is “threatened with stochastic extinction due to the limited size of its population.”²⁰ However, the proposed rule did not indicate how many PMV plants existed in the Imperial Sand Dunes or elsewhere in the Sonoran Desert. Nor did the proposed rule refer to any studies that could provide such abundance data. However, before the proposed listing became final, the Federal government issued a moratorium on all species listings, halting efforts to designate the PMV as threatened. This moratorium remained in effect until approximately 1996.

2. Final Approved Listing in 1998

When the listing moratorium was lifted, USFWS restarted its efforts to list the PMV and four other milkvetch plants as threatened or endangered. As in 1992, the USFWS had no actual plant counts for the PMV. Despite requests to BLM and others for “abundance data,” neither BLM nor any other source had the kind of information USFWS was looking for. Nevertheless, on October 6, 1998, USFWS issued a Final Rule designating the PMV as threatened, and identifying OHV use as the primary cause of PMV population declines.²¹

C. The Center For Biological Diversity v. BLM Lawsuit — March 2000

In March 2000, the Center for Biological Diversity (“CBD”) filed suit against the BLM alleging that BLM had failed to consult with USFWS regarding the effects of the California Desert Conservation Area Plan (“CDCA Plan”) on species that have been listed as threatened or endangered since the plan’s adoption in 1980. According to CBD, this failure to consult constituted a violation of Section 7 of the federal Endangered Species Act. The lawsuit involved nearly all lands in the California desert under BLM control, including the Imperial Sand Dunes. To resolve the litigation, BLM entered into five separate stipulations, one of which related to the PMV and the dunes. Specifically, on November 3, 2000, BLM agreed to (1) initiate formal Section 7 consultation with USFWS regarding impacts on the PMV, and (2) temporarily close more than 49,000 acres of the dunes to OHV use until the Section 7 process was concluded. The new “interim” closure zones were in addition to the North Algodones Wilderness Area, where motor vehicles are strictly prohibited. The North Algodones Wilderness Area consists of approximately 32,000 acres and was established in 1994 as part of the CDPA. It is located immediately north of SR-78 and

¹⁹ Proposed Rule, May 8, 1992, Federal Register, Vol. 57, No. 90, at p. 19846. A true and correct copy of the Proposed Rule is attached as Exhibit 5 to this Petition.

²⁰ *Ibid.*

²¹ Final Rule, October 6, 1998, Federal Register, vol. 63, No. 193, at p. 53606.

supports approximately 25% of all PMV stands known to exist in BLM's jurisdiction.²² Combined, the "interim" closure area and the Wilderness Area constitute approximately 81,000 acres of dune habitat.

It is important to note, however, that neither BLM nor CBD submitted evidence to the Court showing that the PMV was in jeopardy and required an "emergency" closure.²³ On the contrary, just when BLM and CBD were executing the "closure and consultation" stipulation regarding the PMV, BLM was poised to publish its November 2000 Monitoring Study, which concluded that the PMV had "increased significantly" in both abundance and frequency between 1977 and 1998, and that the plant actually fared better in the OHV-open area than it did in the Wilderness Area that is closed to all OHV use.²⁴ As explained below in Section IV. B., this November 2000 Monitoring Study dismantles the key assumptions and findings set forth in the October 6, 1998 Final Rule listing the PMV as threatened.

D. American Sand Association Commissions PMV Plant Count (Spring 2001)

In response to the BLM's decision to "temporarily" close an additional 49,000 acres of the Imperial Sand Dunes, the American Sand Association retained Thomas Olsen Associates, a consulting firm with desert biologists on staff, to conduct a census of the PMV in both the open and closed areas of the dunes. TOA's report, issued on July 2, 2001 under the title *Biology, Distribution and Abundance of Peirson's Milkvetch and Other Special Status Plants of the Algodones Dunes, California* (the "TOA Report"), indicated that 71,926 individual PMV plants had been observed in the OHV-open area alone.²⁵ And although TOA staff could not perform actual ground counts in the closed areas, they did conduct low-altitude fly-overs in a helicopter to identify PMV colonies in these portions of the dunes.²⁶ According to the TOA Report, the PMV colonies in the closed areas — as observed from the air — were similar in size, number and density to the PMV colonies in the open areas.²⁷

²² See, BLM Memorandum, November 1, 1996. (Exhibit 3.)

²³ See, "Order Approving Final Consent Decrees Re Bighorn Sheep and Re All Further Injunctive Relief," March 20, 2001, at p. 13. See also, "Amendment to Final Judgment," April 20, 2001. True and correct copies of both court documents are attached as Exhibits 6 and 7, respectively, to this Petition.

²⁴ The November 2000 Monitoring Study, at pp. v, 14, 30-31, 35-36. (Exhibit 4.)

²⁵ TOA Report at 6. (Exhibit 2.)

²⁶ *Ibid.*

²⁷ *Id.*, at 13.

IV. ARGUMENT: THE PMV SHOULD BE REMOVED FROM THE LIST OF THREATENED SPECIES

A. Legal Standard and Procedure for Delisting

Under the Endangered Species Act and its implementing regulations, interested persons may petition the DOI to have plants and animals removed from the list of threatened and endangered species. 16 U.S.C. § 1533(b)(3)(A). Moreover, an individual's right to challenge a final rule by a federal agency — such as an endangered species listing by the DOI — is guaranteed under the Administrative Procedures Act. 5 U.S.C. § 553(e).

In most respects, DOI must process a petition to *remove* a species from the threatened and endangered list in the same way it processes a petition to *add* a species to that list. Within 90 days of receiving a petition to list or “delist” a particular species, the Secretary of the Interior (the “Secretary”) “shall make a finding as to whether the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted.” 16 U.S.C. § 1533(b)(3)(A). If the Secretary determines that the petition does, in fact, present such information, “the Secretary shall promptly commence a review of the status of the species concerned.” *Ibid.* Note that both findings by the Secretary must be published in the *Federal Register*. *Ibid.* Within 12 months after the petition is filed, the Secretary must determine that either (1) the petitioned action is warranted, in which case she must publish a proposed rule designating the species for protection or, in the case of delisting, recommending removal of the species' protective designation; (2) the petition action is not warranted; or (3) the petitioned action is warranted but immediate promulgation of a rule is precluded by other pending proposals. 16 U.S.C. § 1533(b)(3)(B); *Center for Biological Diversity v. Norton (Sec. Of Interior)* 254 F.3d 833, 835 (9th Cir. 2001). If the Secretary finds that the action is “warranted but precluded,” she must promptly publish that finding along with a “description and evaluation of the reasons and data on which the finding is based.” *Ibid.* A finding that a petitioned action is not warranted or is “warranted but precluded” is subject to judicial review. 16 U.S.C. § 1533(b)(3)(C)(ii).

Under 50 CFR Part 424.11, five factors must be considered before a species can be listed, reclassified, or delisted:

1. The present or threatened destruction, modification, or curtailment of its habitat or range.
2. Overutilization for commercial, recreational, scientific, or educational purposes.
3. Disease or predation.
4. The inadequacy of existing regulatory mechanisms.
5. Other natural or manmade factors affecting the continued existence of the species.

As with *listing* a species, the decision to *delist* a species must be “supported by the best scientific and commercial data available to the Secretary after conducting a review of the status of the species.” 40 CFR Part 424.11(d). A species may be delisted “if such data substantiate that the species is neither endangered nor threatened” for one or more of the following three reasons: (1) the species is extinct; (2) the species has recovered to such a point that federal protection is no longer necessary to guarantee its survival; or (3) the original listing was in error. *Ibid.*

B. The Original Decision to List the PMV Was in Error

In the case of the PMV, “de-listing” is warranted under ground (3) — *i.e.*, the original listing was in error. Not only was the initial listing decision based on inadequate “plant abundance data” and defective technical studies, recent plant surveys demonstrate that the PMV was not threatened in 1998 and is not threatened now. Although the 1998 Final Rule claimed the PMV was declining in population due to OHV use in the dunes, data developed since publication of the Final Rule have proved this claim false. The PMV is thriving. Its population is large and constantly replenished by a well-stocked seed bank. Moreover, the PMV colonies in the OHV-open area are just as healthy as the PMV colonies in the OHV-closed area. As demonstrated below, the PMV does not meet — and has never met — the five “listing” criteria necessary to qualify as “threatened,” and the plant should be removed from the federal list.

1. The Original Listing Decision Was Made Without Adequate Plant “Abundance Data”

The fundamental defect of the October 6, 1998 Final Rule listing the PMV as “threatened,” is that it was issued without benefit of census data showing how many PMV plants actually exist in the Imperial Sand Dunes. The USFWS knew about this “data gap” in 1996, when the four-year moratorium on listings was lifted and efforts to list the PMV were reinitiated. For example, on September 3, 1996, USFWS officially reopened the public comment period on the proposed rule by publishing a notice in the Federal Register.²⁸ The notice specifically requested updated information regarding threats to the PMV and other *Astragalus* taxa, as well as data on the size, number and distribution of each plant’s respective population. According to the notice, this information was necessary to fill data gaps that may have developed during the four-year moratorium on listings:

²⁸ Proposed Rule, Reopening of Public Comment Period on Proposed Threatened and Endangered Status for Seven Desert Milk-Vetch Taxa from California and Nevada, September 3, 1996, Federal Register, Vol. 61, No. 171, at p. 46431. A true and correct copy of this Proposed Rule Reopening Public Comment Period is attached as Exhibit 8 to this Petition.

“Due to the length of time that has elapsed since the close of the initial comment period, changing procedural and biological circumstances and the need to review the best scientific and commercial information available during the decision-making process, the comment period is being reopened. The Service particularly seeks information that has become available in the last four years, concerning:

- (1) Biological, commercial or other relevant data on any threat
(or lack thereof) to these species;
- (2) Additional information on the size, number or distributions
of populations; and
- (3) Whether one or more of these plant species are subject to
conservation agreements or other protection
instruments, and their possible impacts to
such species.”²⁹

With respect to the PMV, one of the “changed circumstances” bearing on the listing question was passage of the 1994 California Desert Protection Act (“CDPA”), which, among other things, designated the North Algodones Dunes (appx. 32,000 acres) as a Wilderness Area, forever making it “off-limits” to motorized vehicles. BLM staff estimated that some of the richest PMV habitat and the densest PMV colonies were (and are) located in the newly-designated Wilderness Area.³⁰ Accounting for the protective benefits of the CDPA, however, was only a small part of USFWS’s reevaluation process. The larger and more difficult task was obtaining updated, credible abundance data for the seven plants. This proved especially daunting with respect to the PMV, as evidenced by memoranda and correspondence from USFWS staff desperately searching for plant counts on the PMV. For example, in a memorandum to the BLM Area Manager in El Centro, dated November 14, 1996, USFWS Field Supervisor, Diane K. Noda, made the following statement:

We have reviewed the information we have received on Peirson’s milkvetch (*Astragalus magdalenae* var. *peirsonii*) following the proposed

²⁹ *Ibid.*

³⁰ Memorandum from BLM State Director to USFWS Field Supervisor, dated November 1, 1996, at p. 1 (“Using results from the Survey of Sensitive Plants of the Algodones Dunes (WESTEC, 1977), we concluded that approximately 25% of the highest relative abundance patches of Peirson’s milkvetch occur in the Wilderness Area.”) See, Exhibit 3 to this Petition.

listing. There appears to be a lack of data on the abundance of this taxon in the *Imperial San Dunes, an area managed by the Bureau of Land Management (BLM)*. Because a large part of the habitat of the milk-vetch is open to off-highway vehicles, population trend and abundance data is particularly important; *the lack of such data severely impairs the ability of the Fish and Wildlife Service (Service) to assess whether the milk-vetch warrants listing under the Endangered Species Act*. We request clarification on whether or not there exists additional information on the abundance of Peirson's milk-vetch on BLM lands. *(Emphasis added.)*³¹

Ms. Noda, in her memorandum, went on to say that she and her staff had reviewed the 1977 WESTEC survey maps, the 1990 ECOS report, and the 1993 survey performed by USFWS for the All-American Canal Project, but had found them inadequate to her purpose, which was to determine with some specificity the number of PMV plants inhabiting the Imperial Sand Dune system.³² She then directed four questions to the BLM Area Manager in El Centro:

- “(1) The key to the relative abundance symbols for the 1977 WESTEC map uses terms such as ‘moderate numbers...’ and ‘moderately high numbers...’, without indicating what these numbers might be. Does the BLM have information that defines these terms more explicitly?
- “(2) Did ECOS provide any field notes on population sizes or make any counts of plant numbers other than those that are included in their report?
- “(3) The ECOS report contains a reference to a 1978-1979 report by Romspert and Burk titled ‘Algodones Dunes Sensitive Plant Project.’ Does this report provide data on abundance/population size for Peirson's milkvetch?

³¹ A true and correct copy of Ms. Noda's memorandum is attached to this Petition as Exhibit 9.

³² Noda Memorandum.

“(4) Does BLM have documents, other than those cited above, that provide estimates of abundance for this species, either recently or in the past 30 years?”³³

The PMV listing file (maintained at the USFWS Field Office in Ventura, California) includes no written response from BLM to Ms. Noda’s four questions. However, we have reviewed the 1977 WESTEC report, the 1990 ECOS report, and the 1978-1979 Romsper and Burk article, and none of the three studies provides the kind of abundance data USFWS felt it needed in order to determine whether the PMV should or should not be listed as threatened.

As for question (1), regarding quantitative definitions of certain “relative abundance” terms used in the WESTEC study, no such definitions exist. WESTEC did not perform – or at least did not report – actual plant counts throughout the dune system. Instead, WESTEC developed “relative abundance units” to distinguish dense plant colonies from sparse plant colonies; but no definitive plant numbers were given.³⁴

With respect to question (2), regarding plant counts that may have been performed as part of the 1990 ECOS study, the answer again is that no such census data were compiled.³⁵ To make matters worse, the 1990 ECOS surveys were not in any way comprehensive. The ECOS biologists only ran transects that were close to established roads so that observers could conduct the survey quickly and easily.³⁶ As a result, ECOS did not survey large areas of PMV habitat in the more remote regions of the open area.³⁷

As to Ms. Noda’s question (3), regarding the 1978-1979 Romsper/Burk report and *its* PMV abundance data, this study also did not involve dune-wide plant counts. Indeed, the Romsper

³³ *Ibid.*

³⁴ A true and correct copy of the 1977 WESTEC Study is attached as Exhibit 10 to this Petition. WESTEC performed its survey by running transects and then mapping the distribution and relative density of each plant species. (WESTEC 1977, at p. 1, 41-45.) Within each survey quadrant, WESTEC staff estimated the density of the particular taxa using a ranking system of 1 to 4. (*Id.*, at 44.) According to WESTEC’s report: “It should be emphasized that no absolute number is intended by this ranking system.” (*Id.*, at 44.)

The four “abundance units” that corresponded to the “density ranking system” provided only the barest outline of the actual plant populations in the dunes. For example, the abundance units were broken down as follows:

- Abundance unit one: One to five inflorescences were observed, with most being dried up;
- Abundance unit two: Six to twenty inflorescence were observed, some still with flowers;
- Abundance unit three: Over twenty inflorescences in stand, but localized;
- Abundance unit four: Over thirty inflorescences in stand, many in flower state and well distributed in depression or vegetation habitat zone. (*Id.*, at 45.)

³⁵ A true and correct copy of the 1990 ECOS Study is attached as Exhibit 11 to this Petition.

³⁶ November 2000 Monitoring Study (BLM) and pp. 4-5. (Exhibit 4.)

and Burk report – in addition to being almost 20 years old – appears to have been more limited in geographical scope than was the 1990 ECOS study.³⁸

Finally, with respect to question (4), regarding additional BLM documents that might provide abundance data on the PMV, nothing in the PMV listing file suggests that such documents existed in 1996 or at any time prior to the October 1998 listing decision. It appears that BLM did not develop and publish new abundance data on the PMV until November 2000 – two years *after* adoption of the Final Rule listing the PMV as threatened.

The absence of abundance data did not, however, prevent BLM from taking a position on whether the PMV should be listed. In fact, BLM felt the creation of the North Algodones Dunes Wilderness Area, along with BLM's adaptive management strategies in the open dune area south of Highway 78, would adequately protect large tracts of high-grade PMV habitat. In a memorandum dated November 1, 1996, BLM's State Director stated that BLM had reversed its initial position regarding the PMV's status, and was now recommending that the plant *not* be listed at all:

“This responds to the subject proposed rule, published September 3, 1996, in the *Federal Register*. We commented previously on this listing package. Our previous comments still hold, ***except for Peirson's milk-vetch, for which the comments below should be substituted . . .***

“With the North Algodones Dunes Wilderness Area, resulting in the protection of a substantial portion of the species distribution, and BLM's commitment to monitor the population of this species in the south dunes and respond accordingly to proposed projects, ***we believe listing of the species is not necessary at this time.***” (*Emphasis added.*)³⁹

But then a curious thing happened. Despite the lack of data showing how many or how few PMV plants actually inhabit the dunes, despite having no seed bank data by which to judge the PMV's latent reproductive potential, and despite BLM's recommendation that the species not be listed as threatened, USFWS decided to list the PMV anyway.

³⁷ *Ibid.*

³⁸ The copy of the Romspert/Burk report maintained in the USFWS listing file for the PMV is incomplete, so it has not been reproduced here or attached as an exhibit to this Petition.

³⁹ BLM Memorandum, November 1, 1996. See Exhibit 3 to this Petition.

2. The 1998 Listing Decision Was Based on Studies Later Found to Be Biased and Technically Unsupportable

In making its 1998 listing decision, USFWS relied heavily on the 1990 ECOS study. For example, the Final Rule cites the 1990 ECOS study in support of the following assertions: (1) PMV populations have declined sharply since 1977; and (2) OHV use is the primary threat to the continued survival of the PMV.⁴⁰ Ultimately, these two critical findings formed the basis for USFWS's decision to list the PMV. However, as we will demonstrate below, BLM later concluded that the 1990 ECOS study was biased and scientifically unsound.

This key development requires some elaboration.

In the spring and summer of 1998, BLM embarked on a monitoring program for sensitive plant species in the Imperial Sand Dunes (Algodones). BLM staff ran transects throughout the open and closed areas of the dunes and gathered abundance and distribution data on six desert plants, including the PMV. The results of this monitoring effort were published in a November 2000 report entitled *Monitoring of Special Status Plants in the Algodones Dunes, Imperial County, California* (the "November 2000 Monitoring Study").⁴¹

As the first technical report to provide dune-wide abundance data on the PMV since 1977, the November 2000 Monitoring Study allowed BLM to detect long-term trends in the population stability of the plant. Ironically, whereas the Final Rule listing the PMV as threatened stated the plant was in decline, the November 2000 Monitoring Study drew the opposite conclusion. For example, in the open areas, the number of PMV jumped sharply in the twenty years since the 1977 WESTEC surveys.⁴² According to the November 2000 Study, "[m]ean transect abundance class values [in the open area] **increased significantly** between 1977 and 1998 for *Astragalus magdelanae* var. *peirsonii*, *Croton wigginsii*, *Helianthus niveus* ssp. *Tephrodes*, and *Palafoxia arida* var. *gigantea*."⁴³ The report also determined that the PMV's "frequency rating" in the open area had improved over the last twenty-one years: "Mean transect frequency **increased significantly** in the open area between 1977 and 1998 for *Astragalus magdelanae* var. *peirsonii*, *Croton wigginsii*, *Helianthus niveus* ssp. *Tephrodes*, and *Palafoxia arida* var. *gigantea*."⁴⁴ However, the surveys also detected a decline — albeit statistically insignificant — in the PMV populations

⁴⁰ Final Rule, FR Vol. 63, No. 193, at p. 53606. (Exhibit 1.)

⁴¹ See Exhibit 4 to this Petition.

⁴² November 2000 Monitoring Study, at 14, 30-31.

⁴³ *Id.*, at 30.

in the *closed* area.⁴⁵ In other words, the plant was doing better in the OHV-open area than it was in the OHV-closed area. This finding runs directly counter to the conclusions set forth in the 1998 Final Rule and the 1990 ECOS study on which it relied.⁴⁶

What accounts for this radical discrepancy? The answer lies in the methodology employed by ECOS when it performed its plant survey in 1990. BLM, which had originally commissioned the ECOS study, later determined that ECOS's analytical approach was technically unsound and incapable of producing credible data on the health of sensitive plants throughout the entire dune system. In the November 2000 Monitoring Study, BLM described the defects of the 1990 ECOS study as follows:

“In 1990 BLM contracted with the consulting firm ECOS to design a monitoring study that could be used to regularly monitor the effects of the OHVs on the special status plants in the dunes. The idea was for the contractor to design the study and collect the first year's data, which would then serve as a baseline. BLM personnel would then continue the monitoring in future years.

“The contractor designed and implemented the monitoring study and presented BLM with a report (ECOS 1990). *Unfortunately, the study design was flawed in several ways. As a result it was not continued. The most serious flaw involved the selection of study sites. Study sites were subjectively located near roads to make them readily accessible by observers. This does not allow inferences to be made to the entire dune system. The study also did not adequately sample the open area. Although the study purported to make inferences to the entire open area, the four study sites chosen for this purpose were all within 1 mile of potential OHV access sites. Because these areas are close to potential staging areas for OHVs, results from these sites will be biased toward relatively heavy OHV use (as opposed to the situation if at least some of the sites had been located in the more interior portions of the open area). Moreover, there was very poor dispersion of study sites through-*

⁴⁴ *Id.*, at 31.

⁴⁵ *Id.*, at 12, 14, 30.

⁴⁶ See, FR Vol. 63, No. 193, at 53606. (Exhibit 1.)

out the open area: ***the entire southern and eastern portion of the open area were unsampled.***” (BLM, November 2000 Monitoring Study, at pp. 4-5.) (*Emphasis added.*)

As a result of the flaws discovered in the 1990 ECOS study, BLM abandoned the ECOS monitoring protocol and worked with USFWS and the California Native Plant Society to develop a new one. It was this new monitoring method that produced the results set forth in the November 2000 Monitoring Study.

3. BLM’s November 2000 Monitoring Study Documents Healthy PMV Populations Throughout Dune System

BLM’s 1998 survey method differed from ECOS approach in two key respects. First, BLM did not limit its survey to areas near roads and trails where sampling could be conducted easily by the paid observer. Instead, BLM ran transects over wide areas of the dunes, including areas that are relatively remote. Second, BLM conducted its survey following a winter of average rainfall, whereas the 1990 ECOS study had been conducted following years of drought. The importance of this distinction was explained by BLM in the November 2000 Monitoring Study:

“Another problem with the ECOS study was that it was conducted during a poor rainfall year. Precipitation at Gold Rock Ranch, just east of the southern half of the dunes (see Map 4), was 1.86 inches between July 1989 and June 1990, less than half of the average of 3.89 inches. Moreover, 1.3 inches of that total fell in July 1989; only 0.56 inches fell between August 1989 and June 1990. Six of the seven months between September 1989 and April 1990 were completely dry; only January, with 0.23 inches, had any effective precipitation (Figure 2). As a result, few of the target plant species [including the PMV] were found. Although all special status plants are perennials, few to no above-ground plants will be found if there has been no rainfall.”⁴⁷

That great numbers of PMV and other desert perennials will not germinate and grow above-ground during drought conditions should have been known to ECOS in 1990 and to USFWS in 1998. Yet neither group of professionals gave proper weight to this critical factor in the PMV’s reproductive cycle.

⁴⁷ *Id.*, at 5.

However, by November 2000, it was clear to BLM and other specialists in desert botany that precipitation — more than any other factor — dictates how many PMV plants will germinate and break into flower in a given season. During drought conditions, the PMV seeds simply lie dormant beneath the sand, awaiting the storms that periodically drop heavy rain on the Imperial Sand Dunes (Algodones).⁴⁸ Only when there is adequate precipitation will the plants grow above the ground where they can be observed.⁴⁹

However, the most startling finding in the November 2000 Monitoring Study is that OHV use does not pose a serious threat to the PMV or the other plants surveyed by BLM. Though the number of people engaged in OHV recreation during holiday weekends (when attendance is highest) increased from 15,000 in 1977 to 90,000 in 1998, the PMV nevertheless showed “significant” increases in both abundance and frequency during that 21-year period.⁵⁰ BLM explained this phenomenon as follows:

“Although all 6 species [including the PMV] appear to be at least as widespread and abundant in the entire open area in 1998 as they were in 1977, this likely results from the fact that OHV use in the open area does not encroach — at least very intensively — on much of the habitat of the plants in relatively large portions of the open area away from OHV staging areas.”⁵¹

The November 2000 Monitoring Study also included a “vehicle track” map (Map 24) showing the OHV travel patterns in the Imperial Sand Dunes (Algodones).⁵² According to this vehicle track map, many of the interior portions of the open area — where there are impressive stands of PMV — receive very little OHV traffic.⁵³

4. BLM’s June 2001 Monitoring Study Confirms that the PMV is Abundant in the Algodones Dunes

BLM’s second monitoring study, published in June 2001 (the “June 2001 Monitoring Study”), built upon the November 2000 survey by including plant abundance data gathered during the

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*

⁵⁰ *Id.*, at 2, 30-31.

⁵¹ November 2000 Monitoring Study, at 35-36.

⁵² *Id.*, at 36.

⁵³ *Id.*, at 36.

1999 and 2000 growing seasons.⁵⁴ Although 1999 and 2000 were much drier than 1998 had been, the June 2001 Monitoring Study still concluded that most of the plant species under review, including the PMV, were at least as abundant in 1999 and 2000 as they were in 1977.⁵⁵ The June 2001 Monitoring Study also reiterated BLM's earlier finding that OHVs rarely have contact with sensitive plants, because most of the plant colonies are located in areas where OHV use is quite light.⁵⁶ Ultimately, the June 2001 Monitoring Study concluded as follows:

“The response of *Astragalus magdalenae* var. *peirsonii*, a short-lived perennial, is closely tied to precipitation. It was most abundant in 198, the highest rainfall year, and least abundant in 2000, the lowest rainfall year. Responses of the species were similar in both the closed and open areas across all four years of monitoring.”⁵⁷

In other words, fluctuations in the PMV population were driven by precipitation, not by alleged “habitat alteration” from OHV activity.

5. Spring 2001 Plant Counts Further Confirm That the PMV is Abundant and Thriving Throughout the Imperial Sand Dunes

In the November 2000 Monitoring Study, BLM acknowledged that its 1998 surveys, while providing an important gauge for assessing general trends in plant populations, could not give a full accounting of actual plant numbers:

“One of the limitations of both the WESTEC study and the current study is that the results give only an index of abundance of the 6 species. **Monitoring that results in estimates of actual population size would be better.** Given current funding and personnel capabilities, however, the WESTEC methodology of using abundance classes was chosen for the current study because it allows more complete coverage of the dunes than would be possible if actual density estimation was attempted.” (*Emphasis added.*)⁵⁸

⁵⁴ This study, entitled Monitoring of Special Status Plants in the Algodones Dunes, Imperial County, California, 1977, 1998, 1999, and 2000, is attached to this Petition as Exhibit 12.

⁵⁵ June 2001 Monitoring Study, at v-vi, 20-27, 30.

⁵⁶ *Id.*, at 31.

⁵⁷ *Id.*, at 30.

⁵⁸ November 2000 Monitoring Study, at 36-37.

BLM's June 2001 Monitoring Study expressed the same opinion regarding the WESTEC methodology.⁵⁹

Then, in the spring of 2001, the American Sand Association retained the consulting firm of Thomas Olsen Associates, Inc. ("TOA") to eliminate the "plant count" data gap identified by BLM in its two survey reports — at least with respect to the PMV.⁶⁰

It is important to stress that TOA purposely abandoned the "relative abundance" survey method used by WESTEC in 1977 and by BLM in 1998, 1999 and 2000. Instead, the TOA biologists conducted a "multi-stage non-probabilistic survey" of the PMV, counting every plant they encountered.⁶¹ This eliminated the need for a sampling methodology and statistical extrapolations: "Sampling methodology was not included in the survey design, since the purpose of the investigation was to locate as many occurrences of the subject plants as possible, and to completely census every area in which they were discovered."⁶² This survey approach made sense because:

"Peirson's milk-vetch occurs in highly clustered, specialized habitats within the dunes, and a large portion of the Algodones Dunes does not contain habitat suitable for these plants. For the study of this type of population, many researchers (Redman 1974; Schiffer and House 1977; Schiffer et al. 1978; Plog et al. 1978; Wilson 1996) have determined that non-probabilistic research strategies are preferable to random or stratified random methods (which are generally more effective for the study of normally distributed populations). Schiffer et al. have argued that '[random] sampling techniques . . . do not facilitate . . . population estimation of rare or highly clustered elements.'"⁶³

TOA had hoped to conduct this on-the-ground plant census in both the open and closed areas of the dunes, but BLM twice denied TOA's request for vehicle access into the five closed parcels.⁶⁴

⁵⁹ June 2001 Monitoring Study, at 28.

⁶⁰ The "TOA Report", is attached to this petition as Exhibit 2.

⁶¹ TOA Report, at p. 3.

⁶² TOA Report, at p. 3.

⁶³ *Ibid.*

⁶⁴ TOA Report, at 4.

As a result, TOA biologists surveyed the closed areas by helicopter, noting the GPS coordinates of each PMV colony they observed.⁶⁵

The heavy rains in the fall of 2000, and cooler, wet weather in the winter of 2001, gave TOA the opportunity to survey the PMV during an especially productive germination period.⁶⁶ As a result of these favorable weather conditions, the number of PMV plants observed was startling. In the open areas, TOA counted 71,926 PMV individuals, the vast majority of which had already produced seeds to be dropped or scattered in the dunes when the summer heat dries (and often kills) the plants.⁶⁷

As for the closed areas, TOA determined from helicopter overflights that PMV colonies in the closed dunes also support large numbers of individual plants:

“A helicopter survey of the closed areas revealed many occurrences, especially within the southern portion of the large central closure. These sites could not be censused, but they appeared to be similar in number and abundance of plants to adjacent open areas.”⁶⁸

Apart from the extremely large number of PMV individuals observed by TOA — approximately 72,000 in the open area and similar numbers in the closed area — the TOA report includes three other important findings. First, TOA confirmed what other researchers had suspected in the past — that the PMV, although technically a perennial, behaves more like an annual plant and is extremely susceptible to fluctuations in rainfall. According to TOA:

“The vast majority of Peirson’s milkvetch plants observed were of a uniform age and in their first year. Peirson’s milkvetch is a short-lived perennial that explosively germinates when favorable moisture conditions occur (Barneby, 1964; Bowers, 1986), in this case an abundance of fall moisture in October 2000. Only five individuals were found that appeared to be older than the current growing season.” (TOA, at p. 10.)⁶⁹

The second finding, tied closely to the first, is that the PMV’s reproductive success is not dependent on the longevity of individual plants, but on each plant’s ability to produce and drop

⁶⁵ TOA Report, at 4-5.

⁶⁶ TOA Report, at 1, 10.

⁶⁷ TOA Report, at 10-11.

⁶⁸ TOA Report, at p. 13.

⁶⁹ *Id.*, at 10. This finding is consistent with similar findings set forth in BLM’s June 2001 Monitoring Study. (June 2001 Monitoring Study, at v, 21, 30.)

seeds in their first year of life. In other words, it is the PMV's collective seed bank that determines its overall viability as a species:

"Although the Peirson's milkvetch is potentially a perennial, most plants that germinated in October 2000 were flowering in March 2001 and setting fruit by May. This means that they contributed to the replenishment and enhancement of the seed bank during their initial growing season; many may not survive if dry conditions occur during the following winter, but their survival is not necessary for the preservation of the species since they have already reproduced

"The potential for a desert annual or short-lived perennial rests not in the plants that are actively growing at any particular time but in the seed bank, the dormant seeds resting in the soil awaiting the return of brief, favorable conditions for their germination (Pavlik and Barbour, 1988; Venable and Pake, 1999). Dormant seeds in the soil allow plants to survive long periods

of unfavorable growing conditions, both seasonal and annual. The contribution of the 2000-2001 cohort of Peirson's milkvetch to replenishing the seed bank is impressive."⁷⁰

Ultimately, the TOA biologists concluded that, with respect to the PMV and other desert-dwelling perennials, "it is impossible to ascertain the status of such plants without either studying them during a rare germination event, or by analyzing the seed bank."⁷¹

TOA's discussion on the PMV seed bank warrants a full quotation:

"The potential for a desert annual or short-lived perennial rests not in the plants that are actively growing at any particular time but in the seed bank, the dormant seeds resting in the soil awaiting the return of brief, favorable conditions for their germination (Pavlik and Barbour 1988; Venable and Pake 1999). Dormant seeds in the soil allow plants to survive long periods of unfavorable growing conditions, both seasonal and annual. The contribution of the 2000-2001 cohort of Peirson's milkvetch to replenishing the seed bank is impressive. The largest

⁷⁰ TOA, at pp. 10-11.

⁷¹ *Id.*, at 12. On behalf of ASA, TOA is in the process of conducting a PMV seed bank survey in the Imperial Sand Dunes. The results should be available by January 2002.

site censused in March 2001, before the secondary germination event, contained

3,738 plants, 90% of which were noted as reproductive. If each plant produced 5 pods, and each pod contained 14 seeds, the contribution to the seed bank at that site alone would be more than 235,000 seeds. The largest site counted was 3,994 plants in early April. The proportion of plants estimated to be reproductive when this site was censused was only 20%, reflecting the March germination event. Making the same assumptions as above, the 2001 seed bank contribution of this site would be nearly 56,000 seeds. By the time of our April trip, many plants had shed their pods, and seeds were plainly visible on the sand surface. The large, flat black seeds contrast strongly with the light-colored sand, and at several sites observers noted that seeds were ‘all over the place.’ In these cases the pods had not been dispersed far before they broke open and shed their seeds.”⁷²

The third finding, which relates directly to the “threats” identified in USFWS’s 1998 listing decision, is that less than 1% of the 71,926 PMV plants observed in the open areas showed signs of contact with OHVs, and most of these plants suffered no permanent damage.

“The total number of plants that showed any evidence of having been affected by OHVs was 667, or 0.93% of all Peirson’s milkvetch plants counted. It was apparent that nearly all plants that were run over were resilient, and popped back up with no damage to the stems or the flowers. As soon as wind obliterated the tracks there was no sign of any effect. The proportion of plants that had been affected by OHVs was small primarily because drivers avoid vegetated basins due to the potential tire damage from woody stems of shrubs, and wood scattered on the ground from dead plants. Even though tire damage would not occur from running over a first-year milkvetch, they are protected by their location in general proximity with shrubs.”⁷³

Ultimately, TOA determined that “[t]he occurrence of dune plants and heavy use areas for vehicles is to a large extent mutually exclusive.”⁷⁴ This conclusion is consistent with similar statements in BLM’s monitoring reports from November 2000 and June 2001:

⁷² *Id.*, at 11.

⁷³ *Id.*, at 12.

⁷⁴ *Ibid.*

“Although all 6 species [including the PMV] appear to be at least as widespread and abundant in the entire open area in 1998 as they were in 1977, this likely results from the fact that OHV use in the open area does not encroach – at least very intensively – on much of the habitat of the plants in relatively large portions of the open area away from OHV staging areas.”⁷⁵

“Although all six species [including the PMV] . . . appear to be responding similarly in both the closed and open areas, this likely results from the fact that OHV use in the open areas does not encroach – at least very intensively – on much of the habitat of the plants in relatively large portions of the open area away from OHV staging areas.”⁷⁶

When read together, the BLM monitoring studies and the TOA Report demonstrate that the PMV is thriving in the open and closed portions of the Imperial Sand Dunes (Algodones), and will continue to do so regardless of OHV use in these areas. There is, in short, no scientific basis for continuing to list the PMV as threatened.

6. Data Developed Since 1998 Demonstrate that the PMV No Longer Satisfies Listing Criteria

When reviewing this delisting Petition, the Secretary of the Interior must evaluate the “best scientific and commercial data available” on the PMV. 50 CFR Part 424.11. In doing so, the Secretary must then consider whether the PMV is still vulnerable to the five “threats” identified by 16 U.S.C. § 1533 (a)(1) and 50 CFR Part 424.11:

- (1) the present or threatened destruction, modification, or curtailment of its habitat or range;
- (2) overutilization for commercial, recreational, scientific, or educational purposes;
- (3) disease or predation;
- (4) the inadequacy of existing regulatory mechanisms; or
- (5) other natural or manmade factors affecting its continued existence.

As shown by the November 2000 Monitory Study, the June 2001 Monitoring Study, and the July 2001 TOA Report, the PMV is abundant throughout its range. Any perceived threats to the plant’s habitat have not materialized. Despite increases in OHV use between 1977 and 2001,

⁷⁵ November 2000 Monitoring Report, at p. v.

⁷⁶ June 2001 Monitoring Report, at p. vii.

PMV abundance has “increased significantly” during this 24-year period. More important, these increases have been more dramatic in the open areas than in the closed areas. All three of the most recent PMV surveys have concluded that OHVs do not play a major role in PMV population fluctuations. In short, OHV use does not threaten the PMV or its habitat.

There also is no evidence that the PMV is threatened with “overutilization” for commercial, recreational, or scientific purposes. The plant data set forth in the TOA Report indicates that more than 71,000 PMV individuals inhabit the open dune area, with similar numbers of individuals inhabiting the closed areas. The seed bank is also well-stocked. Clearly, the plant is not being overutilized or over-consumed.

As for “disease and predation,” the PMV is largely free of these threats. Although the PMV will lie dormant during drought years — thus giving the appearance of poor species health — this is, in fact, a normal part of the PMV’s reproductive cycle. The PMV seeds will lie in a protective state below the sand, and then germinate when there is sufficient rainfall. Note also that OHV use apparently does not interfere with this process.

The data also suggest that the PMV has received adequate regulatory protection from BLM since 1977. BLM can only govern human activities, and these have not been a major factor in the reproductive success of the PMV. Precipitation is the primary determinant; and precipitation cannot be “regulated.”

Finally, as to other “natural or manmade” threats to the PMV, there simply are none. Even drought is not so much a threat to the PMV’s “continued existence” as it is a natural phenomena “built into” the PMV’s reproductive process. The PMV’s seeds are designed to conserve their reproductive potential during dry years and to release that potential when more favorable (*i.e.*, wet) conditions arise. The number of PMV plants and seeds observed in March/May 2001 demonstrate that no manmade or natural “agent” is interfering with the “continued existence” of the PMV. Therefore, the plant is not threatened and should be removed from the federal list.

V. CONCLUSION

For the foregoing reasons, the American Sand Association, the San Diego Off-Road Coalition, and the Off-Road Business Association request that the Secretary of the Interior publish findings in support of removing the PMV from the federal list of threatened and endangered species.

Dated: October 25, 2001

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14. ABSTRACT The Endangered Species Act (ESA) states that all Federal agencies are responsible for conserving threatened and endangered species as part of their normal activities. As a result, Department of Defense agencies play an important role in the conservation of many rare plant and animal populations. Presently, more than 175 of the approximately 1,290 taxa of plants and animals protected under the ESA are known to inhabit Army lands. Protection of species under the ESA can constrain Army mission activities, thereby reducing defense readiness. As the number of listed species increases, mission constraints will increase. The purpose of the ESA is to prevent species extinction and promote recovery by providing protection to imperiled plants and animals. Delisting species is the ultimate goal of implementing the ESA; it is the best alternative for reducing conflicts between the Army's mission and endangered species protection. Recovery and delisting of species on military lands will provide the maximum flexibility for the conduct of training and testing operations while achieving the goals of environmental protection and sustainment. This report reviews the delisting/downlisting process of the Endangered Species Act and provides a roadmap for consideration of the <u>delisting process with application to species on military lands.</u>					
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