

Inyo California Towhee
(Pipilo crissalis eremophilus)
[=Inyo Brown Towhee
(Pipilo fuscus eremophilus)]

**5-Year Review:
Summary and Evaluation**



Photo by Herbert Clarke

**U.S. Fish and Wildlife Service
Ventura Fish and Wildlife Office
Ventura, California**

September 2008

5-YEAR REVIEW

Species reviewed: Inyo California Towhee (*Pipilo crissalis eremophilus*)

I. GENERAL INFORMATION

On August 3, 1987, the U.S. Fish and Wildlife Service (Service) listed the Inyo brown towhee (*Pipilo fuscus eremophilus*) as a threatened subspecies and simultaneously designated critical habitat. Following the American Ornithologists' Union (1989), we now recognize this subspecies as the Inyo California towhee (*Pipilo crissalis eremophilus*) and refer to it as such in this review. The Inyo California towhee is a desert species found in the southern Argus Mountains of the Mojave Desert in Inyo County, California. It requires areas of dense riparian habitat to provide nesting substrate, protection from predators, and shade from the desert sun; adjacent upland habitat provides the principal foraging grounds as well as nesting habitat. The Inyo California towhee was listed as threatened as a result of habitat loss and degradation from: grazing by feral burros (*Equus asinus*) and horses (*Equus caballus*), water diversion, off-highway vehicle (OHV) use, and recreational and military activities (U.S. Fish and Wildlife Service 1998).

I.A. Methodology used to complete this review:

On March 22, 2006, we published a *Federal Register* (FR) notice (71 FR 14538) announcing our initiation of a 5-year review of the Inyo California towhee and asked the public for information. We reviewed the information in our files regarding the Inyo California towhee including scientific papers, survey reports, and letters to and from the Ventura Fish and Wildlife Office. We spoke with Inyo California towhee experts and knowledgeable individuals regarding new information that has been acquired since its listing as well as any other pertinent information regarding this subspecies. We incorporated all comments and information from our files and the public into our review as appropriate. The Ventura Fish and Wildlife Office received public comments on May 24, 2006, in a letter dated May 18, 2006, from the Center for Biological Diversity (Center). These comments expressed concern over the limited range of this subspecies and its dependency on the scarce desert riparian habitat, and threats such as off-highway vehicle activity, limited habitat at Great Falls Basin in the Argus Mountains, current water diversions in Surprise Canyon, and possible future water diversions at Great Falls Basin. The Center also stated these threats need to be carefully considered during the 5-year review process. Additionally, the Center stated that, before any decisions are made on delisting, additional surveys would need to be performed to confirm the status of the towhee, and binding agreements are in place to continue management practices that have allowed the subspecies to recover so that these important gains are not reversed soon after delisting.

I.B. Reviewers

Lead Regional Office – Contact name(s) and phone numbers:

Diane Elam, Deputy Division Chief for Listing, Recovery, and Habitat Conservation Planning, and Jenness McBride, Fish and Wildlife Biologist, Region 8, California and Nevada; (916) 414-6464.

Gjon Hazard (on detail from Carlsbad Fish and Wildlife Office) (760) 431-9440.

Lead Field Office – Contact name(s) and phone numbers:

Robert McMorran, Fish and Wildlife Biologist, and Michael McCrary, Listing and Recovery Coordinator, Ventura Fish and Wildlife Office; (805) 644-1766.

Cooperating Field Office(s) – N/A

I.C. Background

I.C.1. FR Notice citation announcing initiation of this review:

The initial FR notice was published on March 22, 2006 (71 FR 14538). This notice initiated a 60-day request for information which closed on May 22, 2006.

I.C.2. Listing history:

Original Listing

FR notice: 52 FR 28780

Date listed: August 3, 1987

Entity listed (*species, subspecies, DPS*): Subspecies

Classification (*threatened or endangered*): Threatened

I.C.3. Associated actions:

Critical habitat was designated on August 3, 1987 (52 FR 28780) concurrently with the final listing. Additional critical habitat was proposed in the final rule on August 3, 1987 (52 FR 28780) but has not yet been designated.

I.C.4. Review History:

This is the first in-depth agency status review conducted for this subspecies since its listing in 1987.

I.C.5. Species' Recovery Priority Number at start of review:

The recovery priority number for the Inyo California towhee is 9C. This indicates a subspecies facing a moderate degree of threat and a high recovery potential. The "C" indicates a potential conflict with economic activities.

I.C.8. Recovery Plan Outline:

Name of Plan: *Recovery Plan for Inyo California Towhee*

Date issued: April 10, 1998

Dates of previous revisions: There have been no revisions to this plan.

II. REVIEW ANALYSIS

II.A. Application of the 1996 Distinct Population Segment (DPS) policy

The Endangered Species Act defines "species" as including any subspecies of fish or wildlife or plants, and any distinct population segment (DPS) of any species of vertebrate wildlife. This definition of species under the Act limits listing as distinct population segments to species of vertebrate fish or wildlife. The 1996 Policy Regarding the Recognition of Distinct Vertebrate Population Segments under the Endangered Species act (61 FR 4722, February 7, 1996) clarifies the interpretation of the phrase "distinct population segment" for the purposes of listing, delisting, and reclassifying species under the Act.

II.A.1. Is the species under review listed as a DPS?

No, the entire subspecies is listed.

II.A.4. Is there relevant new information that would lead you to consider listing this species as a DPS in accordance with the 1996 policy?

No.

II.B. Recovery Criteria

II.B.1. Does the species have a final, approved recovery plan containing objective, measurable criteria?

Yes.

II.B.2. Adequacy of recovery criteria.

II.B.2.a. Do the recovery criteria reflect the best available and most up-to-date information on the biology of the species and its habitat?

Yes.

II.B.2.b. Are all of the 5 listing factors that are relevant to the species addressed in the recovery criteria (and is there no new information to consider regarding existing or new threats)?

No. In general, the existing criteria are not strictly threats-based because they are not specifically framed in terms of the five listing factors. Additionally, new threats have been identified, including flood and fire, which were not considered in the recovery plan (see section II.C.2.e).

II.B.3. List the recovery criteria as they appear in the recovery plan, and discuss how each criterion has or has not been met, citing information. For threats-related recovery criteria, please note which of the 5 listing factors* are addressed by that criterion. If any of the 5 listing factors are not relevant to this species, please note that here.

The *Recovery Plan for the Inyo California Towhee* (USFWS 1998) states:

“Delisting could be considered for the Inyo California towhee when the population has been sustained at a minimum of 400 individuals for a 5-year period. This numerical goal for recovery is based on the estimated carrying capacity, the maximum number of Inyo California towhees the habitat can support without detrimental effects. At this goal, the population should be reproductively self-sustaining and distributed throughout its range, the threats to its habitat managed, reduced, or eliminated, and all degraded habitat restored, where possible.”

This statement in the plan addresses Factors A, D, and E. The final listing rule for the towhee stated that there were no threats related to either Factor B or C.

In 1998 a survey of the entire range of the towhee was conducted, which determined there were 640 adult towhees (LaBerteaux and Garlinger 1998). However, at the present time there has not been another range-wide towhee survey. In 2004, LaBerteaux conducted a towhee survey of Bureau of Land Management (BLM) and State lands (see map) covering approximately 31 percent

* A) Present or threatened destruction, modification or curtailment of its habitat or range;
B) Overutilization for commercial, recreational, scientific, or educational purposes;
C) Disease or predation;
D) Inadequacy of existing regulatory mechanisms;
E) Other natural or manmade factors affecting its continued existence.

of the known towhee range. This survey found about 200 towhees in this relatively limited portion of the range. Using the results of these two surveys (1998 and 2004), LaBerteaux (2004) extrapolated the total population of towhees for the entire range at 640 to 725 individuals. In 2007, LaBerteaux (2008) conducted towhee surveys on Naval Air Weapons Station (NAWS), China Lake, land (see map) only (68 percent of the towhee's range). Based on the results of the 2007 surveys, in combination with the 2004 surveys on BLM and State lands, LaBerteaux (2008) estimated the current Inyo California towhee population to be 706 to 741 adults. Therefore, over the 9-year period from 1998 to 2007 the towhee population ranged from about 640 to 741 adults.

The results of these surveys, which employed the same methodology, indicate that the numerical goal for delisting the towhee has been met and exceeded. In the five-factor analysis later in this review we discuss the current status of threats to the towhee.

II.C. Updated Information and Current Species Status

II.C.1. Biology and Habitat

II.C.1.a. Abundance, population trends (e.g., increasing, decreasing, stable), demographic features (e.g., age structure, sex ratio, family size, birth rate, age at mortality, mortality rate, etc.), or demographic trends:

In 1987 when the towhee was listed (52 FR 28780), it was thought that there were no more than 175 individuals (LaBerteaux 1994; Laabs et al. 1995). Surveys conducted in 1994 and 1995 (LaBerteaux 1994; Laabs et al. 1995) indicated that there were no more than 200 individuals. In 1998, a survey was conducted on NAWS China Lake, BLM, and State lands covering most of the potential habitat in the southern Argus Mountains (LaBerteaux and Garlinger 1998). Based on results from this 1998 survey, approximately 464 individuals occurred on NAWS China Lake, 176 individuals occurred on BLM and State lands, and 4 individuals occurred on privately-owned lands.

In 2004, LeBerteaux conducted towhee surveys of BLM and State lands only; the larger NAWS China Lake area was not included in the 2004 towhee survey. In 1998, LeBerteaux and Garlinger surveyed a total of 85 sites on BLM and State lands, whereas in 2004, 93 sites were surveyed. Occupancy was generally the same 2004 as it had been in 1998; 71 of the 85 sites were occupied in 1998 (LaBerteaux and Garlinger 1998), while 70 of the 93 sites surveyed in 2004 were occupied (LeBerteaux 2004).

Regardless of differences in the number of sites surveyed in 2004 compared to 1998, the total population of Inyo California towhees on

BLM and the State lands increased from 176 to 200 adults (about 13.6 percent) in the intervening 6 years. LaBerteaux (2004) noted an even greater increase since the 1998 surveys in two areas located on BLM land: Great Falls Basin (21.8 percent higher) and Bruce Canyon (27.8 percent higher) (see map).

Based on the number of adults found on BLM and State land and extrapolating to the entire range of the subspecies including unsurveyed NAWS China Lake land, LaBerteaux (2004) estimated the total Inyo California towhee population to be 725 individuals. In 2007 LeBerteaux (2008) conducted towhee surveys of NAWS China Lake land only. Based on the number of adults found on NAWS China Lake land and extrapolating to the entire range including BLM and State land last surveyed in 2004 (LeBerteaux 2004), LeBerteaux (2008) estimated the total Inyo California towhee population to be 741 adults. Although both LeBerteaux's 2004 and 2007 estimates are based on extrapolations from one portion of the range that was actually surveyed to the entire range, we believe these estimates are valid indicators of both the current rangewide population of towhees and population trends because LeBerteaux used the same survey methodology in 1998, 2004, and 2007. LeBerteaux's results show that towhees are now much more widespread throughout the Argus Mountains compared to when the species was listed (see map), which corresponds with a substantial increase in towhee abundance since listing. Currently, the population is stable or may possibly still be increasing. This pattern of increasing distribution, abundance, and stability is consistent with the increase in the amount and quality of towhee habitat that has occurred since listing.

II.C.1.b. Genetics, genetic variation, or trends in genetic variation (e.g., loss of genetic variation, genetic drift, inbreeding):

There is no new information available on the genetics of the Inyo California towhee.

II.C.1.c. Taxonomic classification or changes in nomenclature:

The Inyo California towhee (*Pipilo crissalis eremophilus*) is considered a subspecies of the California towhee (*Pipilo crissalis*). The California towhee has been variously considered a separate species from the canyon towhee (*Pipilo fuscus*) or combined with it (Johnson and Haight 1996, Kunzmann et al. 2002). When considered together, the California and canyon towhees are referred to as the brown towhee (American Ornithologist's Union 1989). As a result of a number of studies (summarized in Kunzmann et al. 2002), the American Ornithologists Union's Committee on Classification and Nomenclature currently

considers the California towhee and canyon towhee as separate species (American Ornithologist's Union 1998).

We originally listed this subspecies as the Inyo brown towhee (*Pipilo fuscus eremophilus*) (U.S. Fish and Wildlife Service 1987). To conform to the accepted nomenclature, we changed the name of this listed subspecies to Inyo California towhee (*Pipilo crissalis eremophilus*) on the list of endangered and threatened wildlife (50 CFR 17.11).

The Inyo California towhee was first described by van Rossem (1935) from six specimens he collected in Mountain Springs Canyon, Argus Mountains, Inyo County, California. He classified this population of California towhees as a new subspecies due to differences in color. However, Patten et al. (2003) and Kunzmann et al. (2002) have questioned the validity of this and other subspecies of the California towhee. Patten et al. (2003) provide little information to support their conclusion; however, Kunzmann et al. (2002) provide additional information but there are only scant details presented. It appears that a re-examination of fresh-plumaged specimens did not support van Rossem's conclusions; however, we can not judge the validity of the concerns raised by Patten et al. (2002) until a detailed analysis has been conducted.

II.C.1.d. Spatial distribution, trends in spatial distribution (e.g., increasingly fragmented, increased numbers of corridors), or historic range (e.g., corrections to the historical range, change in distribution of the species' within its historic range):

At the time of listing, the known range of the Inyo California towhee was thought to be restricted to desert riparian environments of the Argus Mountains, Inyo County, California (52 FR 28780). The current core distribution of the Inyo California towhee generally overlaps four types of land ownerships (see map). The western portion of its range, approximately 68 percent, is within the boundaries of NAWS China Lake, while the remaining eastern portion is found on BLM lands (26 percent), State-owned lands (5 percent), and privately-owned lands (less than 1 percent) (LaBerteaux and Garlinger 1998).

Although more information is needed, Inyo California towhees appear to have expanded their range since being listed. Single birds have been observed in Surprise Canyon in the Panamint Mountains approximately 12 miles (20 km) east of the Argus Mountains (S. Ellis, Bureau of Land Management, pers. comm. 2006), an area not previously known to be occupied by towhees. However, birds have not been observed nesting in this area so far. According to Cord and Jehl (1979), because of its limited and largely inaccessible range, which is rarely visited by ornithologists, very little is known about the biology, requirements, or population size of

this isolated, desert-dwelling race. Because of past disturbances to habitat within the “expansion” area such as off-highway vehicles and feral equines, available habitat for towhees was reduced and in some places completely eliminated, and therefore, would no longer support towhees. Off-highway vehicle activity in Surprise Canyon has been suspended while BLM prepares a resource management plan and associated environmental impact statement for the area (S. Ellis, pers. comm. 2007). In addition, the fact that more than 11,600 feral burros and 2,400 feral horses in the Argus Mountains and nearby Coso Mountains have been removed since 1980 (LaBerteaux and Garlinger 1998; S. Ellis, pers. comm. 2006), it may be that these birds are simply reoccupying habitat that occurred within their historical range. There is also a historical 1919 record of a pair near Lone Pine, Inyo County (Smith 1919), which was later attributed to this subspecies by Grinnell and Miller (1944). Additional potential habitat is available in mountain ranges near the Argus Mountains, and with the apparent increase in Inyo California towhee individuals, this subspecies may be able to establish breeding populations in the Panamint Mountains as well as the Coso Mountains, which lies approximately 12 miles (20 km) towards the west (LaBerteaux 2004).

II.C.1.e. Habitat or ecosystem conditions (e.g., amount, distribution, and suitability of the habitat or ecosystem):

The Inyo California towhee occurs on the west and east slopes of the southern Argus Mountains of the Mojave Desert. The Argus Mountains are a north-south oriented range located between the Sierra Nevada to the west and the Panamint and Slate Mountains to the east. Elevations range from approximately 2,680 to 6,200 feet (817 to 1,890 meters) above sea level. The climate is severe with temperatures in summer regularly exceeding 100 degrees Fahrenheit (38 degrees Celcius), accompanied by strong winds and infrequent rainfall. Winter conditions are equally extreme; temperatures often fall below freezing with occasional snowfall. Decomposed granite with little soil or litter makes up the substrate. Surface water is limited to seeps, springs and creek flow (Wilbur 1981, U.S. Fish and Wildlife Service 1998).

Nesting and foraging of the Inyo California towhee occurs in areas of dense riparian vegetation and adjacent upland habitats. These riparian environments are dominated by willows (*Salix* spp.), Fremont cottonwood (*Populus fremontii*), and desert olive (*Forestiera neomexicana*). Squaw waterweed (*Baccharis sergiloides*) and rubber rabbit brush (*Chrysothamnus nauseosus*) are also usually present within these riparian environments. Upland vegetation adjacent to riparian environments consists of Mojave creosote bush (*Larrea tridentata*) scrub or Mojave mixed woody scrub. Towhees use this upland habitat as their primary foraging grounds as well as for nesting. The creosote bush community

consists of plants such as burrobrush (*Ambrosia dumosa*), allscale (*Atriplex polycarpa*), and indigo bush (*Psoralea arborescens* var. *minutiflora*). The mixed shrub community consists of a wide variety of plants including antelope brush (*Purshia tridentata* var. *glandulosa*), green ephedra (*Ephedra viridis*), Nevada ephedra (*Ephedra nevadensis*), bush lupine (*Lupinus excubitus* var. *excubitus*) blackbrush (*Coleogyne ramosissima*), bush pea (*Lotus rigidus*), big sagebrush (*Artemisia tridentata*), bladder sage (*Salazaria mexicana*), and brittlebrush (*Encelia actoni*) (LaBerteaux 1994, U.S. Fish and Wildlife Service 1998).

II.C.2. Five Factor Analysis (threats, conservation measures and regulatory mechanisms)

II.C.2.a. Present or threatened destruction, modification or curtailment of its habitat or range:

Under Factor A in the final listing rule (52 FR 28780), we stated that threats to the Inyo California towhee and its habitat include animal grazing (particularly by feral burros), recreational activities, water diversion, and mining. Since listing, LaBerteaux (2008) has also identified nonnative and invasive plants as potential threats. Additionally, fire and flood have been recognized as threats to the towhee and its habitat; however, we discuss these threats in further detail in the “Other Natural or Manmade Factors Affecting Its Continued Existence” section below. All of the above threats affect the towhee through degradation, fragmentation, and destruction of its habitat.

Inyo California towhees are scattered over a relatively small area (approximately 108,000 acres (43,700 hectares), within approximately 32 miles (51.5 kilometers) of canyons (U.S. Fish and Wildlife Service 1998, LaBerteaux and Garlinger 1998) of the Argus Mountains, with the exception of single birds observed in the Panamint Mountains (see map). The actual amount of towhee habitat within this area, although it has not been quantified, is much smaller because towhees are restricted to areas in or near dense riparian vegetation. Such vegetation is limited in extent naturally in the arid Mojave Desert, but can be further reduced by decreases in water supply needed to support the vegetation, or by events that destroy or degrade the existing vegetation (52 FR 28780).

One of the most serious threats to the Inyo California towhee at the time of listing was loss or degradation of habitat (52 FR 28780). According to Cord and Jehl (1979) and Laabs et al. (1992), most springs that supported Inyo California towhees or riparian vegetation were degraded by feral burro use and/or human activities (e.g., mining and cattle grazing). At the time of listing, grazing was widespread throughout the towhee’s range and had substantially reduced the ability of these habitats to support towhees.

Grazing by feral burros, and to a lesser extent cattle and feral horses, damages and destroys habitat through trampling and browsing of the vegetation (52 FR 28780). Feral burros are particularly destructive due to their practice of creating “burro baths.” Up to 10 feet (3 meters) in diameter, these baths destroy vegetation and create miniature dust bowls (Cord and Jehl 1979).

The threat of grazing has been dramatically reduced by NAWS China Lake and BLM through a substantial reduction in the number of feral burros and feral horses within the range of the Inyo California towhee. Roundups funded by NAWS China Lake and BLM beginning in 1980 have resulted in the removal of 11,600 feral burros and 2,400 feral horses in the Argus Mountains and nearby Coso Mountains (LaBerteaux and Garlinger 1998; S. Ellis, pers. comm. 2006). The BLM and NAWS China Lake plan to work together to remove feral equines from the Argus Mountains, with the goal to eliminate feral burros (R. Parker, Bureau of Land Management, pers. comm. 2008). Additionally, NAWS China Lake and BLM have further protected riparian habitat from feral grazers by fencing some of the larger springs where feasible. Although vandals and erosion occasionally compromise the integrity of fencing, BLM periodically monitors the condition of fences and makes repairs when necessary (Ellis 2006, p. 1). The NAWS China Lake is closed to public access.

Other threats to the towhee and its habitat that are less widespread compared to grazing include recreational use, water diversion, and mining. Recreation (hiking, camping, hunting, and OHV use) may result in loss and degradation of habitat through crushing by vehicles; trampling by hikers, hunters, and campers; cutting for firewood; and soil compaction. Recreational impacts occur on BLM and State lands and to a lesser extent on NAWS China Lake by trespassers. According to LaBerteaux and Garlinger’s 1998 survey (1998), springs receiving a “severe” (i.e., widespread impact on vegetation, numerous foot trails and OHV paths or tracks, several heavily used campsites) rating occurred on BLM and State lands at four locations where heavy OHV use and camping activities were noted. However, results from the 2004 survey (LaBerteaux 2004) indicate that recreational impacts at these same four locations were reduced or eliminated; three of the four springs were fenced to exclude feral grazers which also exclude recreational users. No springs located on BLM or State lands received a rating of “severe” from human impacts in 2004; the majority of springs received ratings of “low” (i.e., slight impact on vegetation; few foot trails, but no OHV activity; no heavily used campsites) or “not applicable” (no use) (LaBerteaux 2004). On NAWS China Lake land 96 percent of the water sources received a rating of “low” or “not applicable” in relation to human impacts in 2008 (LaBerteaux 2008).

Water diversion can reduce the amount of water available to maintain riparian vegetation, resulting in negative impacts to the habitat of the towhee. Since towhees center their breeding activities around riparian, squaw water weed, or wash habitats (LaBerteaux 2004), the availability of water to sustain these habitats is necessary for the survival of the towhee. Water rights have been appropriated on some springs situated on BLM-administered lands for such activities as livestock grazing and mining (52 FR 28780). According to LaBerteaux (LaBerteaux and Garlinger 1998), water diversions were occurring at six springs, three of which were within critical habitat. By 2007, water diversions were only occurring from two towhee occupied springs on BLM land (LaBerteaux 2008). Although NAWS China Lake may occasionally use spring water for certain activities, such as dust abatement during construction or maintenance activities, ongoing water diversion only occurs at one spring occupied by towhees on NAWS China Lake (LaBerteaux 2008).

Mining was considered a threat at the time of listing and likely degraded the habitat of the towhee historically. Mining operations usually require the use of water, and at the time of listing, numerous mining claims on BLM land occurred within the range of the towhee and were often associated with springs (52 FR 28780). However, we do not consider mining to be a threat to the towhee at this time. Only one mining claim still exists on BLM land (R. Parker, pers. comm. 2006), and it is not currently active. Mining was eliminated entirely from NAWS China Lake in 1943 (52 FR 28780).

A potential threat suggested subsequent to listing, which may possibly affect the towhee, is encroachment of invasive and nonnative plant species (LaBerteaux 2008). Disturbed areas, such as those caused by grazers, allow for the establishment of invasive and nonnative plant species including salt cedar (*Tamarix* spp.) and carrizo (*Phragmites australis*), which may choke out the native riparian vegetation and may not be optimal habitat for towhees. Although the impact of invasive and nonnative plants on towhees is unknown, the occurrence of these plants is increasing (LaBerteaux 2004).

In summary, the threats to the towhee identified under Factor A in the 1987 listing rule (52 FR 28780) have all been reduced. Habitat destruction from grazing has been dramatically reduced through actions taken by NAWS China Lake and BLM. Although feral burros and feral horses remain within the range of the towhee, and not all riparian areas occupied by towhees have been fenced, the current level of grazing does not appear to be a major threat to the continued survival of the towhee. Habitat losses from recreation have also been reduced in many riparian areas by closures and restrictions on OHV use and fencing installed to

protect them from grazing. Water diversion is limited currently to only two springs on BLM land and one on NAWS China Lake land, and does not appear to be having a major impact on the towhee and its habitat. There are also no longer any active mining operations within the range of the towhee, although at least one mining lease still exists on BLM land and could become active in the future. Invasive and nonnative plants are becoming more prevalent within riparian habitat; however, their effect on the towhee is unknown. Although we have no specific data on either the number of acres of riparian habitat that has been restored or the expansion of riparian habitat resulting from conservation measures, the observed increase in towhee abundance indicates that these measures have been largely successful. The BLM currently uses photo-monitoring as a means to document increases in riparian vegetation and plans to develop a protocol to evaluate the effectiveness of their actions (R. Parker, pers. comm. 2008).

II.C.2.b. Overutilization for commercial, recreational, scientific, or educational purposes:

Overutilization for commercial, recreational, scientific, or educational uses was not mentioned as a threat when the Inyo California towhee was listed (52 FR 28780), and we are not aware that such threats exist at the present time. The Inyo California towhee is protected from such threats by the Migratory Bird Treaty Act (MBTA) and its implementing regulations (see discussion of the MBTA in “The Inadequacy of Existing Regulations” section below). Furthermore, most of the towhee habitat occurs in areas of critical environmental concern (ACEC), wilderness areas, or military lands which offer an elevated level of protection and would require additional permitting for any activities or research. Therefore, we do not believe overutilization will endanger the Inyo California towhee throughout all of its range.

II.C.2.c. Disease or predation:

Disease or predation was not mentioned as a threat when the Inyo California towhee was listed (52 FR 28780-28786), and we are not aware that such threats exist at the present time.

II.C.2.d. Inadequacy of existing regulatory mechanisms:

Most of the habitat for the Inyo California towhee is administered by NAWS China Lake and BLM, 68 percent and 26 percent respectively, while only 5 percent is located on State-managed lands and less than 1 percent on private lands (LaBerteaux and Garlinger 1998). Designating the Inyo California towhee as a threatened subspecies invoked the authorities and prohibitions of the Endangered Species Act, which also

provided protection to its habitat. Critical habitat designated for the Inyo California towhee is all located on Federal lands with the exception of one critical habitat unit located on State-managed lands. Prior to its listing, the Inyo California towhee was, and still remains, protected under the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*) and is listed as endangered by the California Endangered Species Act.

State Protections

California Endangered Species Act (CESA): This species is listed as endangered under the California Endangered Species Act of 1984 (CESA; California Fish and Game Code, section 2080 *et seq.*). CESA and the Native Plant Protection Act (NPPA; Division 2, Chapter 10, section 1908) prohibit the unauthorized take of State-listed threatened or endangered species, including plants. CESA requires State agencies to consult with the California Department of Fish and Game (CDFG) on activities that may affect a State-listed species and mitigate for any adverse impacts to the species or its habitat. Unlike the Federal ESA take prohibition, the State CESA prohibition includes plants; however, landowners are exempt from this prohibition for plants destroyed through habitat modification. Where landowners have been notified by the State that a rare or endangered plant is growing on their land, the landowners are required only to notify CDFG 10 days in advance of changing land use in order to allow salvage of listed plants (NPPA Division 2, Chapter 10, section 1913).

California Environmental Quality Act (CEQA): CEQA requires review of any project that is undertaken, funded, or permitted by the State or a local governmental agency. If significant effects are identified, the lead agency has the option of requiring mitigation through changes in the project or to decide that overriding considerations make mitigation infeasible (CEQA section 21002). In the latter case, projects may be approved that cause significant environmental damage, such as destruction of listed species or their habitat. Protection of listed species through CEQA is, therefore, dependent upon the discretion of the lead agency involved.

Natural Communities Conservation Planning Act (NCCP): The purpose of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land uses, including urban development. NCCPs identify and provide for the regional or area-wide protection of plants, animals, and their habitats, including listed species, while allowing compatible and appropriate economic activity.

California Lake and Streambed Alteration Program: The Lake and Streambed Alteration Program (California Fish and Game Code sections 1600-1616) may promote the recovery of listed species in some cases.

This program provides a permitting process to reduce impacts to fish and wildlife from projects affecting important water resources of the State, including lakes, streams, and rivers. This program also recognizes the importance of riparian habitats to sustaining California's fish and wildlife resources, including listed species, and helps prevent the loss and degradation of riparian habitats.

Federal Protections

National Environmental Policy Act (NEPA): NEPA (42 U.S.C. 4371 *et seq.*) provides some protection for listed species that may be affected by activities undertaken, authorized, or funded by Federal agencies. Prior to implementation of such projects with a Federal nexus, NEPA requires the agency to analyze the project for potential impacts to the human environment, including natural resources. In cases where that analysis reveals significant environmental effects, the Federal agency must propose mitigations that could offset those effects (40 C.F.R. 1502.16). These mitigations are usually developed in coordination with the Service during ESA section 7 consultations and usually provide some protection for listed species. However, NEPA does not require that adverse impacts be fully mitigated, only that impacts be assessed and the analysis disclosed to the public.

Endangered Species Act (ESA): The ESA is the primary Federal law providing protection for this species. Since its listing, the Service has analyzed the potential effects of Federal projects under section 7(a)(2), which requires Federal agencies to consult with the Service prior to authorizing, funding, or carrying out activities that may affect listed species. A jeopardy determination is made for a project that is reasonably expected, either directly or indirectly, to appreciably reduce the likelihood of both the survival and recovery of a listed species in the wild by reducing its reproduction, numbers, or distribution (50 C.F.R. § 402.02). A non-jeopardy opinion may include reasonable and prudent measures that minimize the amount or extent of incidental take of listed species associated with a project. Incidental take refers to taking of listed species that results from, but is not the purpose of, carrying out an otherwise lawful activity by a Federal agency or applicant (50 C.F.R. § 402.02). In cases where some incidental take is unavoidable, the Service works with the agency to include additional conservation measures to minimize negative impacts. For projects without a Federal nexus that may negatively impact listed species, the Service may issue incidental take permits pursuant to section 10(a)(1)(B). To qualify for an incidental take permit, applicants must develop, fund, and implement a Service-approved habitat conservation plan (HCP) that details measures to minimize and mitigate the project's adverse impacts to listed species. Regional HCPs in some areas now provide an additional layer of regulatory protection for

covered species, and these HCPs are coordinated with the related NCCP-State program.

Sikes Act: The Sikes Act (16 U.S.C. 670) authorizes the Secretary of Defense to develop cooperative plans with the Secretaries of Agriculture and the Interior for natural resources on public lands. The Sikes Act Improvement Act of 1997 requires Department of Defense installations to prepare Integrated Natural Resource Management Plans (INRMP) that provide for the conservation and rehabilitation of natural resources on military lands consistent with the use of military installations to ensure the readiness of the Armed Forces. INRMPs incorporate, to the maximum extent practicable, ecosystem management principles and provide the landscape necessary to sustain military land uses. While INRMPs are not technically a regulatory mechanism because their implementation is subject to funding availability, they can be an added conservation tool in promoting the recovery of endangered and threatened species on military lands.

The NAWS China Lake, which encompasses approximately two-thirds of the Inyo California towhees range, has developed an INRMP (Naval Air Weapons Station, China Lake 2000) that clearly sets objectives and guidelines to aid in the recovery of the Inyo California towhee. Through this program, NAWS has reduced grazing and trampling threats to Inyo California towhees by initiating management prescriptions to eliminate burros and wild horses from riparian habitats. NAWS China Lake has also been withdrawing all mineral extraction operations and has closed Navy lands to most public uses.

Migratory Bird Treaty Act (MBTA): MBTA affords certain regulatory protections to native bird species, even those not listed under the ESA, including the prohibition of take, capture, killing, or possession of migratory birds, their eggs, parts, and nests. MBTA does not protect habitat except where activities would directly kill or injure birds (such as felling a tree with an active nest), and does not provide regulatory procedures for permitting incidental take. Executive Order 13186 (January 10, 2001) was issued to address the responsibilities of Federal agencies to protect migratory birds. This Executive Order directed Federal agencies whose actions have a measurable negative impact on migratory bird populations to develop Memoranda of Understanding (MOU) with the Service to promote the conservation of migratory birds. For example, under the July 31, 2006, MOU between the Service and the Department of Defense, migratory birds will receive certain benefits on military lands by incorporation of migratory bird conservation into INRMPs, including developing and implementing monitoring programs. The MOU also provides for habitat protection on Department of Defense installations, with specific attention to riparian habitats, fire and fuels

management, and invasive species management. Like INRMPs, the MOU is subject to budgetary limits; however, it provides an added level of recognition to the importance of conserving migratory birds and their habitats that are not listed under the ESA.

Federal Land Policy and Management Act (FLPMA): FLPMA is the primary Federal law governing most land uses on BLM lands, and BLM owns about 26 percent of the range of the Inyo California towhee. In FLPMA the Congress set forth 13 policies for the administration of public lands administered by BLM. Among these are the following:

- The national interest will be best realized if the public lands and their resources are periodically and systematically inventoried and their present and future use is projected through a land use planning process coordinated with other Federal and State planning efforts;
- The public lands will be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use; and
- Regulations and plans for the protection of public land areas of critical environmental concern will be promptly developed.

The FLPMA designated the California Desert Conservation Area (CDCA) (Sec 601 (c)), which includes the range of the Inyo California towhee, and directed the Secretary of the Interior to “prepare and implement a comprehensive, long-range plan for management, use, development, and protection of the public lands within the California Desert Conservation Area.” The purpose as specified by Congress was “to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple-use and sustained yield, and the maintenance of environmental quality.”

The FLPMA defined areas of critical environmental concern (ACECs) as “areas within the public lands where special management attention is required ... to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards” (Sec. 103 (a).). In the development and revision of land use plans, BLM is to “give priority to the designation and protection of areas of critical environmental concern” (Sec. 202 (c) (3).).

The BLM's Great Fall Basin-Argus Mountains Area of Critical Environmental Concern (ACEC) was primarily established to benefit the Inyo California towhee. According to BLM (Ellis 2006, p. 1), this ACEC is accomplishing its intended purpose of protecting the towhee and its habitat. For example, fencing around springs drastically reduced the destruction of riparian areas from feral burros, feral horses, and off-road vehicle use as well as other recreational activities that might affect them.

A portion of the Inyo California towhee's range owned by BLM has been designated as a wilderness area. In 1964 Congress enacted the Wilderness Act with the intent of establishing a National Wilderness Preservation System composed of federally owned wilderness areas to be protected in their natural condition for the use and enjoyment of the people of the United States. As originally enacted, only the Secretary of Agriculture was directed to identify areas suitable for wilderness in the National Forests. In FLPMA, Congress directed the Secretary of the Interior to identify areas suitable for wilderness on BLM lands.

Biological resources in wilderness areas are afforded the highest level of protection due to restriction on uses. The general management goals which apply to wilderness areas require that BLM provide for and manage wilderness areas for long-term protection and preservation of wilderness, scenic, cultural, and natural characteristics for recreation, scientific, and educational purposes. To maintain the primeval character and provide for solitude, a variety of activities are prohibited by the Wilderness Act within designated wilderness areas. Among these prohibitions are the following: no roads, no structures, no commercial activities, no use of motorized vehicles or equipment, and no landing of aircraft.

In summary, if the towhee were to be delisted in the future, several State and Federal laws and regulations would still act to protect it. Much of the range of the towhee is under the jurisdiction of NAWS China Lake and is protected through the Sikes Act. As noted earlier, BLM has established an ACEC to protect the towhee. The towhee is also afforded some protection under the MBTA. Finally, there are State laws, including CESA and CEQA, that provide protections to the towhee.

II.C.2.e. Other natural or manmade factors affecting its continued existence:

We did not list any threats to the Inyo California towhee under Factor E in the final listing rule (52 FR 28780). However, disturbances such as flooding, erosion, and fires may reduce the habitat of the Inyo California towhee in some areas until the habitat recovers. In 2005, flooding and erosion washed away willows (*Salix* spp.) from at least one spring on NAWS China Lake (S. Pennix, pers. comm. 2006). Fires in 2005 also

burned some towhee habitat. The overall impact of these and similar events on the habitat of the towhee is unknown, but we expect any impacts on towhees to be relatively short-term as riparian areas are dynamic and vegetation generally recovers completely over time. Within 1 year, the willows affected by the 2005 events on NAWS China Lake were already showing signs of recovery (S. Pennix, pers. comm. 2006). The NAWS China Lake has also updated their wild land fire response to include Inyo California towhee habitat as a protection priority (S. Pennix, pers. comm. 2006). Although these threats may have been significant when towhee numbers were low and riparian habitat had been reduced and degraded, towhees have increased in abundance and now have a wider distribution. At the present time, we consider these natural factors to have the potential for short-term (i.e. one to two breeding seasons) effects on a few pairs of towhees in a few localized areas at any one time. We do not believe these factors pose a range-wide threat to the continued existence of the species.

II.D. Synthesis:

The *Recovery Plan for the Inyo California Towhee* (U.S. Fish and Wildlife Service 1998) states:

“Delisting could be considered for the Inyo California towhee when the population has been sustained at a minimum of 400 individuals for a 5-year period. This numerical goal for recovery is based on the estimated carrying capacity, the maximum number of Inyo California towhees the habitat can support without detrimental effects. At this goal, the population should be reproductively self-sustaining and distributed throughout its range, the threats to its habitat managed, reduced, or eliminated, and all degraded habitat restored, where possible.”

Overall, the population of the Inyo California towhee has increased substantially since it was listed, and the towhee may be expanding its range. At the time of listing in 1987, it was estimated to have a population of not more than 175 individuals. Surveys conducted in 1994 and 1995 (LaBerteaux 1994; Laabs et al. 1995) indicated that there were no more than 200 individuals. During a 1998 rangewide survey, the population was considerably higher, with 640 adult towhees; however, this was the last range-wide towhee survey that has been conducted. Extrapolating from 2004 survey results from a small portion (BLM, State, and private lands) of the range, the towhee population over the entire range was estimated to be as many as 725 adults that year (LaBerteaux 2004), which is well above the 400 recommended by the recovery plan. Similarly, the total Inyo California towhee population in 2007 was estimated to be 741 adults based on an extrapolation from a large portion (NAWS China Lake) of the towhee’s range surveyed in 2007 (LeBerteaux 2008). LeBerteaux’s results show that a substantial increase in towhee abundance has occurred since listing and that the population is stable or may possibly still be increasing. This pattern of increasing abundance and stability is consistent with the increase in the amount and quality of towhee habitat that has occurred since listing.

Additionally, there have been a few observations of towhees outside their historical range, which may indicate the range of the towhee is expanding. However, further research is needed to determine the status of these birds. Based on the above, we can conclude that the status of the towhee has clearly improved.

The reasons for the population decline of the Inyo California towhee and the listing of the towhee as threatened were habitat loss and degradation from animal grazing, recreational use, water diversion, and mining. As stated previously, about 94 percent of the towhee's range is owned by NAWS China Lake and BLM. Conservation measures conducted by NAWS China Lake and BLM to reduce or eliminate grazing, recreational use, water diversions, and mining throughout most of the towhee's range have improved the habitat of the towhee, which in turn, increased towhee abundance. Since 1980, NAWS China Lake and BLM have removed about 14,000 feral grazers and have fenced some of the larger springs occupied by towhees to exclude grazers. The NAWS China Lake is closed to the public, and BLM has reduced recreational impacts on its land through closures, fencing, and enforcement. Water diversion has been eliminated from all but a few springs. The NAWS China Lake is closed to mining, and there is no active mining on BLM land at this time. These conservation measures have been highly effective in the recovery and protection of the towhee's riparian habitat and have resulted in a major increase in towhee abundance, from about 200 in 1994 (LaBerteaux 1994) to as many as 741 in 2007 (LaBerteaux 2008). The towhee and its habitat are expected to continue to be protected through ongoing conservation measures and existing laws and regulations. We therefore recommend that the Inyo California towhee be delisted.

III. RESULTS:

III.A. Recommended Classification:

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

III.B. New Recovery Priority Number: 9 (changed from 9C in the recovery plan).

Because less than 1 percent of the towhee's range is located on private land, and the remaining 99 percent is located on State (5 percent) and Federal (94 percent) lands where minimal economic conflict occurs, we have removed the "C" from the Recovery Priority Number.

IV. RECOMMENDATIONS FOR FUTURE ACTIONS

We believe the conservation measures conducted by NAWS China Lake, BLM, and the State (CDFG) have been largely successful and that the status of the Inyo California towhee has improved to the point where we recommend it be delisted. In order for the status of the towhee to remain stable or improve, however, these same conservation measures must continue. For example, feral burros and horses remain within the range of

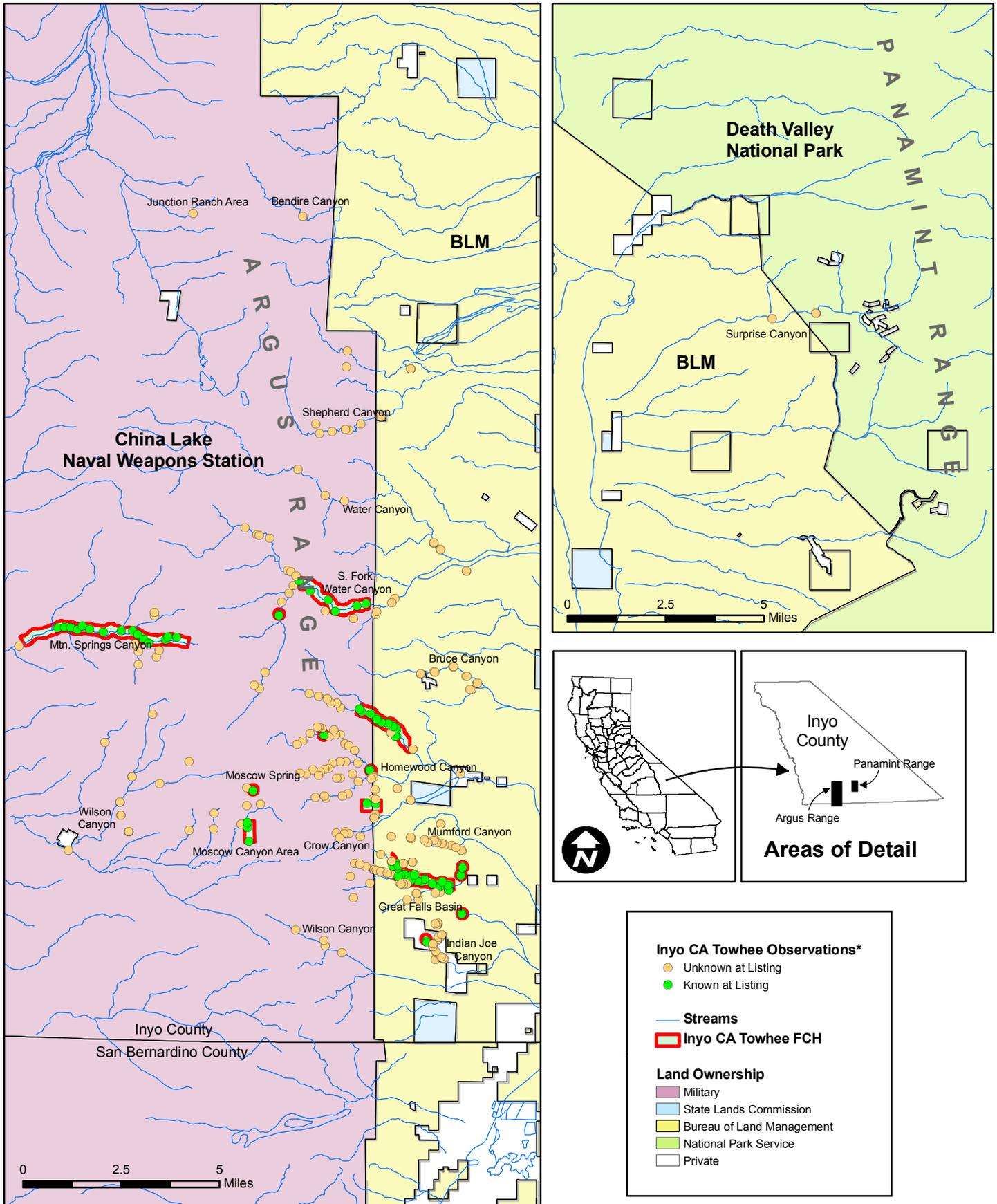
the towhee, and their numbers must continue to be reduced so that they do not have an impact on towhee habitat. Therefore, we recommend that the Service work with NAWS China Lake, BLM, and CDFG to develop a cooperative agreement to continue conservation measures for the towhee after it is delisted.

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Inyo California Towhee Critical Habitat With Observation Records for the Species



U.S. Fish & Wildlife Service
 Ventura Fish & Wildlife Office GIS May, 2007

*Inyo California towhee observations: In the Argus Range by D. LaBerteaux (1998 and 2004);
 In the Panamint Range by D. Racine, A. Disbrow, S. Ellis, D. Burnette (2004).

U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of Inyo California towhee (*Pipilo crissalis eremophilus*)

Current Classification: Threatened
Recommendation resulting from the 5-Year Review

X Delist

Appropriate Listing/Reclassification Priority Number 4

Review Conducted By: Robert McMorran and Michael McCrary

FIELD OFFICE APPROVAL:

Lead Field Supervisor, Fish and Wildlife Service

Approve Diane LeVine Date 9/29/08

REGIONAL OFFICE APPROVAL:

Lead Regional Director, Fish and Wildlife Service

Approve Michael F. ... Date 7/31/08