Mariposa pussypaws
(*Calyptridium pulchellum*)

5-Year Review:
Summary and Evaluation

U.S. Fish and Wildlife Service/
Sacramento Fish and Wildlife Office
Sacramento, California

December 2007

5-YEAR REVIEW
Mariposa pussypaws (*Calyptridium pulchellum*)

I. GENERAL INFORMATION

I.A. Methodology used to complete the review: This review was conducted by a staff biologist within the Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service (Service), based on peer-reviewed journal articles; California Natural Diversity Database (CNDDB) information; personal communications with California Department of Fish and Game, California Native Plant Society, and U.S. Forest Service personnel; our database that tracks Endangered Species Act (ESA) section 7 consultations and other projects; and our files.

I.B. Contacts

Lead Regional or Headquarters 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

Lead Field Office – Contact name(s) and phone numbers: Kirsten Tarp, Senior Staff Biologist, Recovery Branch, Sacramento Fish and Wildlife Office, 916-414-6600.

I.C. Background

I.C.1. FR Notice citation announcing initiation of this review: On July 7, 2005, we announced initiation of the 5-year review for *Calyptridium pulchellum* and asked for information from the public regarding the species' status (70 FR 39327). We published a second notice announcing the 5-year review and extending the request for information on November 3, 2005 (70 FR 66842). We received no response to the request for information.

I.C.2. Listing History
Original Listing
FR notice: 63 FR 49022
Date listed: September 14, 1998
Entity listed: Species, *Calyptridium pulchellum*
Classification: Threatened

I.C.3. Associated Rulemakings: None (e.g., no critical habitat has been designated for this species).

I.C.4. Review History: No status reviews have been conducted since the species was listed in 1998.

I.C.5. Species' Recovery Priority Number at start of review: The recovery priority for this species is 8, indicating that it is a full species with moderate threats and a high recovery potential.

I.C.6. Recovery Plan or Outline

Name of plan: *Draft Recovery Plan for Fifteen Plants from Southern Sierra Foothills, California* (in development)

II. REVIEW ANALYSIS

Calyptridium pulchellum is an annual member of the Portulacaceae (purslane family) that grows in sparsely-vegetated areas such as granite domes and gravelly openings within foothill woodland communities (J. Clines, Sierra National Forest, *in litt*. 1998; CNDDB 2006). At the time of listing in 1998, of only 6 hectares (14 acres) over about 64 kilometers (40 miles) in Fresno, Madera, and Mariposa Counties, California (CNDDB 1997, 2006; 63 FR 49022).

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

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

____ ***Yes****, go to section II.A.2.*
_X__ ***No****, go to section II.A.4.*

The ESA defines species as including any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate wildlife. This definition limits listing as distinct population segments (DPS) to vertebrate species of fish and wildlife. Because the species under review is a plant and the DPS policy is not applicable, the application of the DPS policy to the species listing is not addressed further in this review.

II.B. Recovery Criteria

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

____ ***Yes***
_X__ ***No***

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:

No evidence exists that the historical range of *Calyptridium pulchellum* was ever wider than the current range. *Calyptridium pulchellum* is reported from 9 or 10 occurrences in Mariposa, Madera, and Fresno Counties, occurring within a range of approximately 64 kilometers (40 miles) (CNDDB 2006). The main center of distribution for *C. pulchellum* is in Mariposa County, south of the town of Mariposa. Although this area of concentration includes only Element Occurrences 1 and 2, it incorporates more than half of the individual plants. An Element Occurrence is the location record for a site which contains an individual, population, or stand. Populations, individuals, or colonies located within one-fourth of a mile of each other generally constitute a single occurrence (CNDDB 2006). A third population may exist in this center of concentration, if Hoover's (1940) collection site is in fact different from Element Occurrence 1. Another area of concentration for the species is near Coarsegold in Madera County (Element Occurrences 4, 5, 8, and 9, although Element Occurrences 4 and 5 may be extirpated (see section II.C.1.b., below). A minor area of concentration is the Jose Basin in Fresno County (Element Occurrence 6 and one unnumbered site that was found in 2003 on the Sierra National Forest [Consortium of California Herbaria 2006]). The remaining occurrence (Element Occurrence 3) is isolated near Ahwahnee in Madera County. The two Fresno County occurrences are on public land managed by the Sierra National Forest; all other occurrences are on private land.

Population trends of *Calyptridium pulchellum* are difficult to determine because the number of plants in a population fluctuates from year to year. These fluctuations most likely occur because the conditions for seed germination and seedling survival vary depending on weather conditions (E. Cypher, California Department of Fish and Game, pers. comm., 2007). One example is Element Occurrence 6 in Fresno County, which contained only 58 plants in 1991, reached a maximum of 770 plants in 1992, dropped to 59 plants in 1995, then rebounded to 607 plants by 1998 (J. Clines *in litt.* 1998; CNDDB 2006). Not all populations reach their maximum size in the same year (J. Clines *in litt.* 1998; CNDDB 2006). Most *C. pulchellum* occurrences are on private land, and several were last evaluated at least 10 years ago. Currently, the population trends for occurrences that have been reported to the California Natural Diversity Database are: 5 unknown, 2 declining, and 1 fluctuating (CNDDB 2006). One of the populations (the Ahwahnee site) only had 3 plants in 1998, down from several hundred in 1996. The reason for this population's decline is unclear, but the surrounding live oak shrubs may be encroaching into the gravelly opening where *C. pulchellum* grows, changing the microclimate (U.S. Forest Service 2003).

Joanna Clines, the Sierra National Forest Botanist, has continued searching appropriate habitat when circumstances permit (J. Clines, Sierra National Forest, *in litt.* 1993*b*; J. Clines, Sierra National Forest, pers. comm. 2001). A survey of National Forest land conducted under contract resulted in the discovery of an additional population in Fresno County in 2003 (J. Clines, Sierra National Forest, pers. comm. 2004; Consortium of

California Herbaria 2006). The southern Sierra Nevada foothills contain many areas of apparently suitable habitat in which *Calyptridium pulchellum* has not been discovered, despite intensive surveys (J. Clines, Sierra National Forest, *in litt.* 1993*a,* 1993*b*; J. Stebbins, Sierra Foothill Conservancy, *in litt.* 2002).

In summary, seven populations of *Calyptridium pulchellum* were considered to be extant when the species was listed in 1998. Since listing, one occurrence (unnumbered) has been newly discovered on the Sierra National Forest and another in Madera County near Coursegold (Element Occurrence 9). Two occurrences (Element Occurrences 4 and 5) may be extirpated. Additionally, a third occurrence may exist in the main center of concentration south of Mariposa, if Hoover's (1940) collection site is in fact different from Element Occurrence 1

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

The habitat for *Calyptridium pulchellum* is becoming more fragmented. A road had been constructed through the Ahwahnee population (Element Occurrence 3) before Hamon first discovered it in 1980 (Hamon 1981); he surmised that the plants remaining in 1980 were just a remnant of the former population (CNDDB 2006). In recent years (1993 through the present), dirt bikes have been creating trails through the *C. pulchellum* habitat and driving over the plants (J. Clines *in litt.* 1993*a*; J. Clines, pers. comm. 2001; A. Mendershausen pers. comm. 2001). Construction of a firebreak has further damaged this population (J. Clines *in litt.* 1998).

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

Calyptridium pulchellum grows in sparsely-vegetated areas such as granite domes and gravelly openings within foothill woodland communities (J. Clines *in litt.* 1998; CNDDB 2006). Although trees such as *Pinus sabiniana* (foothill pine*)*, *Quercus douglasii* (blue oak*)*, and *Q. wislizenii* (interior live oak) comprise the surrounding woodlands, *C. pulchellum* is restricted to treeless areas (Hoover 1940; CNDDB 2006). The Fresno County occurrence is on a granite outcrop that was once covered with chaparral vegetation but has been converted to grassland (J. Clines *in litt.* 1993*a*; CNDDB 2006). Additionally, shading from encroaching shrubs and trees apparently has reduced the suitability of the habitat for *C. pulchellum* (J. Clines *in litt.* 1998; A. Mendershausen, pers. comm. 2001).

In growth chambers, *Calyptridium pulchellum* is capable of growing on other soil types (J. Stebbins, Sierra Foothill Conservancy, pers. comm. 2001), suggesting that it is restricted to certain soil types in nature because it competes poorly with other species on more fertile soils (J. Stebbins *in litt*. 2002). Occurrences range in elevation from a low of

442 meters (1,450 feet) in Mariposa County to a high of 1,097 meters (3,600 feet) in Fresno County (D. Hamon, Sierra National Forest, *in litt*. 1980; CNDDB 2006).

Calyptridium pulchellum typically grows in association with the rare species *Lupinus citrinus*. *Calyptridium pulchellum* co-occurs *with L. citrinus* var. *citrinus* (orange lupine) at five locations and with *L. citrinus* var. *deflexus* (Mariposa lupine) at two locations. *Mimulus layneae* (Layne's monkeyflower) is the second most common associate, occurring with *C. pulchellum* at four sites. Other frequent associates include *Lupinus stiversii* (harlequin lupine) and *Streptanthus diversifolius* (varied-leaved jewelflower), which grow with *C. pulchellum* at three sites each, and *Arctostaphylos viscida* ssp. *mariposa* (Mariposa manzanita), *Camissonia sierrae* ssp. *sierrae* (Sierra sun-cups), and *Mimulus gracilipes* (slender-stalked monkeyflower) at two sites each (Hoover 1940; Hamon 1981; J. Clines *in litt*. 1993*a*; J. Clines *in litt.* 1998; CNDDB 2006). The site near Ahwahnee is unusual in that *C. pulchellum* does not co-occur with either variety of *Lupinus citrinus*, although some of the other common associates do grow at the site (J. Clines *in litt*. 1998).

Indicators of potentially suitable habitat such as soil type and plant associates have been used to search for new populations, with some success. The areas have not been mapped so the total extent and trends of availability are not known. See discussion under II.C.1. a. for further details regarding surveys.

II.C.1.d. Genetics, genetic variation, or trends in genetic variation (e.g., loss of genetic variation, genetic drift, inbreeding, etc.) and taxonomic classification or changes in nomenclature:

Some people have suggested changing the genus name from *Calyptridium* to *Cistanthe* and renaming the species *Cistanthe pulchella*. Hershkovitz (1990) combined members of the genera *Calyptridium, Calandrinia, Claytonia, Lewisia*, and *Talinum* into the single genus *Cistanthe*. This treatment was not accepted in the Jepson Manual (Wilken and Kelley 1993), or by the Consortium of California Herbaria (2006). The Hershkovitz system has not been accepted widely, although it has been adopted by the U.S. Department of Agriculture and (1999), and in the Flora of North America (2004). This new generic assignment is not relevant to the species' conservation status, as *Cistanthe pulchella* has exactly the same circumscription as *Calyptridium pulchellum.*

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:

When *Calyptridium pulchellum* was listed in 1998, we identified impacts from development projects and other human activities as threats to its habitat or range (63 FR 49022). These threats are still an important factor impacting the species' recovery.

The human populations of Madera and Mariposa Counties, where *Calyptridium pulchellum* occurs on private lands, are expected to increase by 49 percent and 20 percent, respectively, between 2000 and 2020 (Hickey *et al.* 2005). The region of Madera County covered by the Coarsegold Area Plan (Madera County 2006), which provides the framework in which development will occur, contains about 60,000 acres and at least 4 of the occurrences of *C. pulchellum.* The habitat for this species located near Coarsegold, in Madera County, will likely continue to be fragmented due to increased infrastructure associated with the need for housing and services for this area, and the construction of a gaming casino and hotel on the Chukchansi Tribal Lands (Madera County 2006).

Activities associated with residential development such as landscaping, dirt bike riding, or foot traffic are a threat at Element Occurrence 3 near Ahwahnee and Element Occurrences 4 (if extant) and 5 (if extant) in Madera County, all of which are in residential subdivisions (CNDDB 2006). Even if *Calyptridium pulchellum* was not affected directly during house or driveway construction, viability of the populations could be reduced. The dirt bikes and shading that contributed to the decline of *C. pulchellum* at the Ahwahnee site continue to degrade the habitat there (J. Clines, pers. comm. 2001; A. Mendershausen, Sierra Foothills Chapter California Native Plant Society, pers. comm. 2001, 2007), so that occurrence is particularly vulnerable.

One population of *Calyptridium pulchellum* (Element Occurrence 4 in Madera County) that was considered extant in the final listing rule may have been extirpated by habitat modification that occurred by activities associated with residential development. In 1983, a house and driveway were constructed on the lot (CNDDB 2006). The remaining plants may have been buried when the yard was covered with decorative gravel, but the exact location of the plants relative to the landscaping is not known (M.A. McCrary, California Department of Fish and Game, pers. comm. 2001). Foot traffic from the house, vehicular travel, and burrowing animals have disturbed the soil and allowed encroachment of weedy plants in the past (J. Clines *in litt.* 1993*a*; CNDDB 2006). The *C. pulchellum* population size declined to fewer than 100 plants in 1988 and 1989, then to 1 plant in 1990, and none have been found since (CNDDB 2006).

Calyptridium pulchellum also has not been found at Element Occurrence 5 (Madera County) since 1983, despite visits in years that were favorable for other populations (J. Clines *in litt.* 1993*b*; J. Clines, pers. comm. 2001; CNDDB Database 2006). The reason for the likely extirpation of the Element Occurrence 5 is unknown.

Of the 7 or 8 extant populations, all but two are located on private lands where they are vulnerable to habitat degradation and loss. Two populations occur on lands administered by the Sierra National Forest that are fenced to protect them from livestock trampling and grazing (J. Clines *in litt*. 2007). We do not know of any other conservation measures that have been implemented for *Calyptridium pulchellum*.

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

Overutilization for commercial, recreational, scientific, or educational purposes was not known to be a factor in the 1998 final rule (FR 63 FR 49022) and does not appear to be a threat currently.

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

There has been no known change from the final listing rule in which we noted the lack of evidence that grazing or trampling is either beneficial or detrimental to the species (63 FR 49022). The effects on plants from livestock grazing are highly variable and dependent on many factors, including but not limited to the type of livestock, timing, intensity, and duration of livestock use. All of the information we have regarding the effects of livestock grazing on this species is anecdotal. However, livestock grazing occurs where *Calyptridium pulchellum* populations are located, and we are aware of specific circumstances where livestock grazing has had little or no adverse effect on the species.

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

California State Laws

The California Endangered Species Act does not list *Calyptridium pulchellum* as endangered or threatened (Chapter1.5 sec. 2050 *et seq*. of the California Fish and Game Code and Title 14 California Code of Regulations section 670.2). The Native Plant Protection Act (Division 2, Chapter 10, section 1900 *et seq.*) also does not provide any special protection to this species.

The California Environmental Quality Act (CEQA) (chapter 2, section 21050 *et seq.* of the California Public Resources Code) requires government agencies to consider and disclose environmental impacts of projects and to avoid or mitigate them where feasible. However, CEQA does not guarantee that such conservation measures will be implemented. Section 15065 of the CEQA Guidelines requires a finding of significance if a project has the potential to "reduce the number or restrict the range of an endangered, rare, or threatened species." Under CEQA, species that are eligible for listing as rare, threatened, or endangered but are not so listed are given the same protection as those species that are federally or State listed. Once significant effects are identified, the lead agency has the option to require mitigation for effects through changes in the project or to decide that overriding considerations make mitigation infeasible. In the latter case, projects may be approved that cause significant environmental damage. Protection of even listed species through CEQA is dependent upon the discretion of the agency involved. Moreover, CEQA does not regulate many activities on private land which might negatively affect the species such as ministerial projects or grazing. The CEQA guidelines section 15369, defines ministerial as describing "a governmental decision involving little or no personal judgment by the public official as to the wisdom or manner of carrying out the project …. A ministerial decision involves only the use of fixed

standards or objective measures, and the official cannot use personal, subjective judgment in deciding whether of how the project should be carried out".

Federal Laws

The Endangered Species Act (ESA) is the primary Federal law that provides protection for *Calyptridium pulchellum*. Currently there are no completed regional or county-wide Habitat Conservation Plans (HCPs) authorized under ESA section 10, or Natural Community Conservation Plans (NCCPs) authorized under the California Natural Community Conservation Plan Act, in Fresno, Madera or Mariposa Counties, thereby leaving populations on private land without protection under these laws. Section 7 in some circumstances provides greater protection to plants through its requirement for Federal agencies to consult with the Service regarding potential impacts of their projects (including permits and funding of non-Federal actions) to listed species.

The National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) may afford some protection to populations affected by Federal activities. The NEPA requires all Federal agencies to formally document, consider, and publicly disclose the environmental impacts of Federal actions and management decisions affecting the human environment. NEPA requires agencies to consider mitigation alternatives, but does not require or guide the actual implementation of mitigation for impacts. Two populations of *Calyptridium pulchellum* occur on the Sierra National Forest (J. Clines, pers. comm. 2007), which is administered by the U.S. Forest Service (see below).

The National Forest Management Act (NFMA) (36 CFR 219.20(b)(i)) may affect management of rare plant occurrences on National Forests. There is currently no species management guide or conservation strategy for *Calyptridium pulchellum* (U.S. Forest Service 2003). However, the NFMA requires the Forest Service to incorporate standards and guidelines into Forest Land Management, or Land and Resource Management plans, including provisions to support and manage plant and animal communities for diversity, and the long-term range-wide viability of native and desired non-native species. The U.S. District Court, Ninth Circuit, recently invalidated a Forest Service 2005 rule that would have categorically excluded Land Management Plans from NEPA analysis.

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

Other natural or manmade threats cited in the 1998 final rule included susceptibility of populations to extirpation from random demographic, environmental or genetic events (63 FR 49022). Current threats include the threat of extirpation from random demographic, or environmental events discussed in the 1998 final rule, and in addition competition from nonnative plants and native live oak.

There has been no known change in the imminence or magnitude of the susceptibility of populations to extirpation from random demographic, environmental or genetic events since listing. As discussed in the final listing rule (63 FR 49022), small population size increases the susceptibility of a population to extirpation from random demographic,

environmental and/or genetic events (Shaffer 1981, 1987; Lande 1988; Primack 2006; Groom *et al.* 2006). In this 5-year review, populations of 200 growing plants (not counting ungerminated seeds) or fewer are considered to be small, in keeping with Menges' (1992) calculation that populations of this size are especially vulnerable to even moderate levels of environmental uncertainty. The combination of few populations, small range, and restricted habitat still renders *Calyptridium pulchellum* highly susceptible to extirpation due to random events, such as flood, drought, disease, or other factors (Shaffer 1981, 1987; Groom *et al.* 2006).

Demographic events that may put small populations at risk involve random fluctuations in survival and reproduction of individuals (Shaffer 1981, 1987; Lande 1988; Groom *et al.* 2006). Small populations may also be subject to increased genetic drift and inbreeding (Menges 1991; Ellstrand and Elam 1993). Populations that are continually small in size are particularly susceptible to genetic changes due to drift. However, drift may also cause genetic changes with populations that occasionally fluctuate to small sizes (*e.g.*, undergo population bottlenecks). Increased homozygosity (i.e., reduced genetic variation) resulting from genetic drift and inbreeding in small populations may lead to a loss of fitness (ability of individuals to survive and reproduce). In addition, reduced genetic variation in small populations may make any species less able to successfully adapt to future environmental changes (Ellstrand and Elam 1993). *Calyptridium pulchellum* has population sizes of 100 or fewer for at least five populations, therefore, it also is susceptible to extirpation due to demographic events, genetic drift, and inbreeding.

Competition from nonnative plants and native live oak potentially threatens *Calyptridium pulchellum* at four sites. At Element Occurrence 6 in Fresno County, nonnative grasses have encroached into the *C. pulchellum* habitat in wetter years (Clines 1998). The nearby, unnumbered occurrence in Fresno County is in an area dominated by nonnative grasses (J. Walker, Contractor with the Sierra National Forest, *in litt*. 2003). At Element Occurrence 2, the aggressive, nonnative plant *Centaurea solstitialis* (yellow star-thistle) has been observed in a nearby creek bed, and as of 2001, had not yet encroached on the *C. pulchellum* habitat (J. Clines, pers. comm. 2001). At Element Occurrence 3, in Madera County, live oak shrubs may be encroaching into the gravelly opening, changing the microclimate (U.S. Forest Service 2003). The threat to *C. pulchellum* associated with competition from nonnative plants has been identified since listing.

II.D. Synthesis

When *Calyptridium pulchellum* was listed as threatened in 1998, the primary threats to its survival and recovery were urban development, off-road vehicle use, and small size and number of populations. We have no new information to suggest that these threats to the species have substantially changed since the time of listing in 1998. In addition, competition from nonnative plants and native live oak potentially threatens *C. pulchellum* at four sites.

Seven populations of *Calyptridium pulchellum* were considered to be extant when the species was listed in 1998. Since listing, one occurrence has been newly discovered on the Sierra National Forest and another in Madera County near Coursegold Element Occurrence 9). Two occurrences (Element Occurrences 4 and 5) may be extirpated. Additionally a third occurrence may exist in the main center of concentration south of Mariposa, if Hoover's (1940) collection site is in fact different from Element Occurrence 1.

Some of these occurrences were last surveyed at least 10 years ago and their current status is unknown, although they are presumed to be extant according to the California Natural Diversity Database (CNDDB 2006). The primary threats continue to be urban development, off-road vehicle use, and small size and number of populations.. Additionally competition from nonnative weeds and native live oak potentially threats *Calyptridium pulchellum*. Due to past and threatened destruction or modification of its habitat, the inadequacy of existing regulatory mechanisms, and other natural or manmade factors affecting its continued existence, we conclude that *Calyptridium pulchellum* continues to meet the ESA definition of threatened. No status change is recommended at this time.

III. RESULTS

III.A. Recommended Classification:

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

III.B. New Recovery Priority Number __8__

It is recommended that the recovery priority number remain 8 because the species continues to have a moderate degree of threat and a high potential for recovery

IV. RECOMMENDATIONS FOR FUTURE ACTIONS -

■ Protect the extant occurrences of *Calyptridium pulchellum* through mechanisms such as conservation easements.

■ Complete and publish the draft recovery plan, and approve a final recovery plan.

■ Map the potential habitat for *Calyptridium pulchellum* using the indicators mentioned in II.C.1.d. and survey for additional populations.

■ Monitor the status and trend of *Calyptridium pulchellum* in order to estimate current population sizes, the number and distribution of populations, and whether the species is stable, increasing, or declining.

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U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of *Calyptridium pulchellum*

Current Classification _Threatened_____
Recommendation resulting from the 5-Year Review

____ **Downlist to Threatened**
____ **Uplist to Endangered**
____ **Delist**
_X_ **No change is needed**

Review Conducted By _Sacramento Fish and Wildlife Office staff_____

FIELD OFFICE APPROVAL:

Lead Field Supervisor, Fish and Wildlife Service

Approve _____ Date 1-8-08

REGIONAL OFFICE APPROVAL:

Lead Regional Director, Fish and Wildlife Service

Approve _____ Date 1/10/08