

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Sidalcea hickmanii ssp. parishii

COMMON NAME: Parish's checkerbloom

LEAD REGION: 1

INFORMATION CURRENT AS OF: February , 2003

STATUS/ACTION (Check all that apply):

New candidate

Continuing candidate

Non-petitioned

Petitioned - Date petition received: 1975

90-day positive - FR date:

12-month warranted but precluded - FR date:

Listing priority change

Former LP:

New LP:

Latest date species first became a Candidate: 7/1/1975

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

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

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

M - Taxon mistakenly included in past notice of review.

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

X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Malvaceae (Mallow family)

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: California

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE:  
California

LEAD REGION CONTACT (Name, phone number): Diane Elam (CNO) 916-414-6464; Scott McCarthy (RO) 503-231-6131

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Ventura Fish and Wildlife Office, Diane Steeck, (805) 644-1766

BIOLOGICAL INFORMATION:

## Introduction

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*Sidalcea hickmanii* ssp. *parishii* (Parish's checkerbloom) is an herbaceous perennial plant in the mallow family (Malvaceae), with multiple stems emerging annually from a woody root crown. It was first described by Benjamin Robinson in 1897 as *S. hickmanii* var. *parishii*, based on collections made from the western slopes of the San Bernardino Mountains, California (Robinson 1897). Hitchcock (1957) provided it subspecific status in publishing *S. hickmanii* ssp. *parishii*. At that time, he noted that the collection from Mission Pine, Santa Barbara County, California was more densely hairy than the San Bernardino County material and might merit recognition as a "fifth geographic race." Populations in Santa Barbara County continue to be recognized as *S. hickmanii* ssp. *parishii* (Munz 1974; Hill 1993; Smith 1998).

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## Habitat and Life History

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*S. hickmanii* ssp. *parishii* most commonly appears following fires, apparently having evolved to rapidly take advantage of unvegetated openings in forest or chaparral. Most historic collections, and all currently known populations, are known from open areas along roads, trails, firebreaks, small landslides, or in recently burned areas. Most collection locations are from elevations between 1,311 and 2,134 meters (m) (4,300 and 7,000 feet (ft)), although the recently discovered San Luis Obispo County population occurs as low as 914 meters (3,000 feet) elevation (Foster 1998; Diane Steeck, Service, pers. obs., 1998). Chaparral and mixed coniferous forest are the primary vegetation types where this taxon occurs. Soils have been described as dry and sandy, overlying granitic and sandstone substrates (Krantz 1981; Schettler 1989). Populations have been located on benches, on all aspects of gentle slopes, on steeper slopes where it is not eliminated by erosion, and along drainages (Krantz 1981; Schettler 1989; Rodriguez 1999). Surveyors have noted the difficulty of identifying any specific habitat parameters that would allow a narrower delineation of potential habitat in which to search for this taxon (Munro-Burgess and DePuydt 1993). To date, the longevity of the soil seedbank of *S. hickmanii* ssp. *parishii* has not been studied. However, in San Luis Obispo County, seeds of *S. hickmanii* ssp. *parishii* did germinate and plants emerged in abundance on chaparral-covered slopes that burned in 1996, after having last burned between 1921 and 1939, according to U.S. Forest Service (Forest Service) fire history maps (Schettler 1989). This suggests that, under the conditions that existed in San Luis Obispo County, substantial soil seedbanks of this taxon may persist for at least 55 years. The closely related *S. hickmanii* ssp. *anomala* also emerged in abundance on Cuesta Ridge following a fire there in the last 5 years (D. Hillyard, per. comm., 1998). In seed longevity studies, another member of the mallow family (*Malva rotundifolia*) was found to have seeds that retained their viability for a century after being buried in the soil (Fenner 1985).

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## Distribution

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*S. hickmanii* ssp. *parishii* has been collected from San Bernardino, Santa Barbara, and San Luis Obispo counties, California. Its distribution in San Bernardino County appears to be particularly restricted, although the vagueness of historical location information and the plant's emergence

primarily following fire make it difficult to accurately assess its distribution. The earliest collections of *S. hickmanii* ssp. *parishii* were made in the Seven Oaks/Forsee Creek area of the San Bernardino Mountains in the 1890s up through about 1924, with one collection made from “the west slope of Mount San Bernardino”, and, in 1909, one in the “Yucaipe Mts” at 1,402 m (4,600 ft) elevation. “Mount San Bernardino” (currently San Bernardino Peak) is less than 6.4 kilometers (km) (4 miles (mi)) south of the Seven Oaks/Forsee Creek area. The Yucaipe Mountains likely refers to Yucaipe Ridge, about 6.4 km (4 mi) southwest of San Bernardino Peak. For over 50 years, no further populations were documented in San Bernardino County, until 1981, when biologist Tim Krantz, University of Redlands, discovered about 20 plants in open areas near historical collection locations south of Seven Oaks on San Bernardino National Forest (Krantz 1981). These plants could not be relocated a few years later (T. Krantz, *in litt.*, 1993). In 1995, biologists surveying for the Forest Service located two other small occurrences, comprised of 8 plants, at the edge of a trail and on an eroding bank, within a few hundred yards of Krantz’s discovery (Hirshberg 1995). Despite focused surveys for this taxon in two small burns, and recent wide-ranging surveys conducted for a flora of the San Bernardino Mountains, no other occurrences have been located in San Bernardino County (A. Sanders, University of California-Riverside, *in litt.*, 1998; G. Hirshberg, Forest Service, *in litt.*, 1995). Fire has been suppressed in most of the San Bernardino Mountains, including the Seven Oaks/Forsee Creek area, for over half a century, so it is possible a buried soil seedbank exists that is unexpressed. Prior to the 1981 discovery of *Sidalcea hickmanii* ssp. *parishii*, this taxon was last collected from a burned area near Seven Oaks in the mid-1920s (Minnich *et al.* 1995; A. Sanders, *in litt.*, 1998; M. Lardner, pers. comm., 1999).

In Santa Barbara County, 274 km (170 mi) to the northeast, *S. hickmanii* ssp. *parishii* is known from three regions in Los Padres National Forest -- Big Pine Mountain, Sierra Madre Ridge, and McKinley Peak. Collections in these areas were made in the 1930s, 1960s, and 1970s, in burned areas and along roads and fuel breaks. The Forest Service surveyed all known occurrences in 1993 and 1994. At that time, they located no plants at Big Pine Mountain, where historical collections were made in the 1930s from burned areas (Munro-Burgess and DePuydt 1993). Big Pine Mountain is on the southeast edge of the San Rafael Wilderness; the last fire documented there was in 1932. On Sierra Madre Ridge, which forms the northeast boundary of the San Rafael Wilderness, four small occurrences (between 13 and 25 plants) were found along roads and fuel breaks, corresponding to the general locations of past collections. Portions of Sierra Madre Ridge burned in 1921, 1932, and 1966. On McKinley Peak, about 600 individuals were located along an intermittent drainage, along a road, and on an open bench. The McKinley Peak area burned in 1923 and 1966, and a controlled burn of 24 to 28 hectares (ha) (60 to 70 acres (ac)) was conducted there in 1985 (Munro-Burgess and DePuydt 1993).

In May 1997, a population of *S. hickmanii* ssp. *parishii* was documented in San Luis Obispo County, on Los Padres National Forest, about 48 km (30 mi) north of the northernmost occurrence in Santa Barbara County. Previously, in 1989, plants of *S. hickmanii* were found here during floristic surveys of the American Canyon Candidate Research Natural Area. At that time, fewer than 20 plants of *S. hickmanii* were found in one or two small potreros (openings, of less than 0.4 ha (1 ac), on old landslides, that support primarily grasses and herbs rather than chaparral shrubs) and they were not identified to subspecies (Schettler 1989). The area had last

burned between 1921 and 1939. In 1996, the chaparral-covered slopes and small potreritos burned in the “58” wildfire, leading to the appearance of much more extensive populations. In 1998, the Forest Service surveyed 96 ha (315 ac) of this burned area and mapped 3,000 to 5,000 plants occurring on approximately 24 ha (80 ac) in two locations (Rodriguez 1999). This extension of the known range and expansion of the known elevational range of this taxon is substantial and increases the likelihood that additional populations may be discovered on undeveloped public lands, including adjacent wilderness areas that burned in the “58” fire, and on areas to the south that have not burned recently. This discovery also suggests that, while a few plants may continue to persist in openings and disturbed sites, a large persistent seedbank may remain viable in the surrounding soil for five or more decades.

Threats identified for this taxon fall into two groups B those that negatively affect individual or small groups of plants (the “expressed” portions of what may be larger populations), and those that have the potential to substantially alter a large area of surrounding habitat or damage any unexpressed seedbanks that may occur in surrounding soils. Activities in the former group include livestock grazing on individuals along roads (see Factor C) and grading of existing roads (see Factor A). Those in the later group include altered fire regimes (e.g. aggressive fire suppression, prescribed burning in winter or spring) (Factor E), post-fire livestock grazing (Factor C), development or expansion of roads and facilities (e.g. recreational, military communication facilities, or development of private inholdings) (Factor A), and invasion by nonnative species (Factor E). The southern portion of this taxon’s range, in San Bernardino County, is most vulnerable to these activities due to the taxon’s more restricted distribution there, its closer proximity to human population centers, and the area’s greater recreational use.

#### THREATS:

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

The proximity of the San Bernardino County population to major metropolitan areas exposes it to substantially greater impacts than the more remote locations in Los Padres National Forest in Santa Barbara and San Luis Obispo counties. San Bernardino National Forest is located within a 2-hour drive of 14 million people and has one of the highest visitor rates in the nation (Forest Service 1988). The area where historic collections were made - near Seven Oaks and Barton Flats - is popular with recreationalists. Barton Flats supports campgrounds and group camps for over 500 visitors, 14 additional organization camps, 100 recreational residence cabins, and primary access roads and trails into the San Geronio Wilderness (Forest Service 1988). Several private inholdings occur in the area, including one at the junction of Forsee Creek and Highway 38, where a population of *S. hickmanii* ssp. *parishii* was described in 1922. The occurrence of *S. hickmanii* ssp. *parishii* discovered in 1981 on adjacent National Forest land was located near a campground, and the disappearance of part of it in following years may have been caused by expansion of a camp volleyball court (T. Krantz, in litt., 1993). Several of the historic sites are too vaguely described to determine their exact location. For instance, it is unclear if the Seven Oaks/Forsee Creek area is also what is described in the 1895 type locality as “west slope of Mount San Bernardino” at about 2,134 m (7,000 ft) elevation. San Bernardino Peak (assumed to be the “Mount San Bernardino” referred to) is just to the south of the Seven Oaks/Forsee Creek

area, in the San Geronio Wilderness.

In Santa Barbara County, fewer than 1,000 plants are known from the three general locations where *S. hickmanii* ssp. *parishii* has been documented. None of these locations have burned in the last three decades. Plants occur on road edges, fuel breaks, and disturbed areas. Some habitat for this taxon was likely lost in the past, during construction of gravel roads, and more recently from expansion of an Air Force communications facility at McPherson Peak on Sierra Madre Ridge. This site, approximately 1.2 ha (3 ac) in size, apparently supported over 100 plants among the towers and antennas in about 1990, but by 1995, only 25 plants occurred in that area (Los Padres National Forest 1995). In 1998, only about 12 reproductive plants were found in the cleared area, although an additional 50 to 100 young plants were found growing in a fuelbreak that had been graded through chaparral, adjacent to the facility, about 3 years previously (Steeck 1998). This suggests that a soil seedbank extends beyond the cleared area and into surrounding chaparral on McPherson Peak, although it appears that plants are gradually disappearing from the cleared area, possibly due to grazing and vehicle traffic. In Santa Barbara County, more than 100 square miles of National Forest lands, at elevations above 1,219 m (4,000 ft), exist between and adjacent to these three general locations, much of it in the San Rafael Wilderness. Our current understanding of the life history and habitat requirements of *S. hickmanii* ssp. *parishii* is inadequate to determine the extent to which this area may support additional populations.

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

None known.

C. Disease or predation.

Cattle grazing (and potentially trampling, as well) on Los Padres National Forest negatively affects *S. hickmanii* ssp. *parishii* plants at two of the three general locations where plants have been documented in Santa Barbara County. During 1993, botanical surveyors documented severe herbivory on about half of the 50 plants that occur in scattered patches along Sierra Madre Ridge Road. Cattle feces and hoof prints in the population suggested that grazing was attributed to cattle (Munro-Burgess and DePuydt 1993). In 1998, plants at McPherson Peak on Sierra Madre Ridge appeared to be damaged by deer, as well (D. Steeck, pers. obs., 1998). Plants on Sierra Madre Ridge, but not those at Big Pine Mountain or McKinley Peak, are in active, fully utilized livestock grazing allotments (Munro-Burgess and DePuydt 1993; K. Danielsen, Los Padres National Forest, pers. comm., 1997). Those plants severely damaged by cattle are not able to contribute to the seedbank from which they emerged. Assessing the impact of this herbivory on the entire population is complicated by our inability to estimate the extent to which a soil seedbank exists in surrounding chaparral. In addition to the grazing of plants at road edges, post-fire livestock grazing could have a substantial effect on a population recently “released” by fire. The few years following a fire are likely a crucial period during which *S. hickmanii* ssp. *parishii* must germinate, grow, and reproduce to restock the soil seedbank before being overtopped again by new growth from surrounding chaparral shrubs. The severe herbivory seen on some plants indicates that the plants are highly palatable to livestock, and

probably deer, and suggests that herbivory could severely inhibit post-fire survival and reproduction through grazing, and potentially from trampling and accelerated erosion, as well. Cattle, and vehicle use on roads, could also transport invasive nonnative plant species into recently burned areas where there are greater opportunities for their establishment than in unburned chaparral (see Factor E).

The San Luis Obispo County and San Bernardino County occurrences are not in livestock grazing allotments.

D. The inadequacy of existing regulatory mechanisms.

Pursuant to the Native Plant Protection Act (Div. 2, chapter 10 sec. 1900 et seq. of the California Department of Fish and Game Code), and the California Endangered Species Act (Div. 3, chapter 1.5 sec. 2050 et seq.), the California Fish and Game Commission listed *S. hickmanii* ssp. *parishii* as rare in 1979. *S. hickmanii* ssp. *parishii* is known to occur only on Federal lands. State listed plant species are considered sensitive species on lands managed by the Forest Service. The policy of the Forest Service is to work with the State in the conservation of these taxa; however, State listing provides no consultation or other requirements for protection on Federal lands.

The management of sensitive resources on public lands managed by the Forest Service is guided by various policies and regulations, including the National Environmental Policy Act (NEPA) of 1969 (PL. 91-109, 42 U.S.C. 4321-4347, 83 Stat 852). NEPA requires disclosure of potential effects of Federal actions, and allows for comment by agencies and the public, but does not, of itself, provide additional protections. The Los Padres and San Bernardino National Forests are also governed by Land and Resource Management Plans. These plans indicate that sensitive plant species will be managed to ensure their viability and that vegetation management practices will be designed to protect or enhance populations of sensitive species (Forest Service 1988).

In 1996, the Service and Forest Service entered into a Memorandum of Understanding (MOU) that addressed several sensitive plants species in Los Padres National Forest, including *S. hickmanii* ssp. *parishii*. In this MOU, the Forest Service agreed to determine the effects of cattle grazing on these taxa, develop guidelines for minimizing road maintenance impacts, develop burn plans, and conduct surveys for these taxa. These activities have been partially completed. The Service provided funding for the Forest Service to conduct a limited amount of post-fire surveys for this taxon, which the Forest Service completed in 1998. This MOU has expired and should be renewed and expanded to address additional information and management needs.

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

Fire suppression and alteration of natural fire regimes are a potential threat to this taxon. In this century, humans began organized efforts to suppress fires in the San Bernardino Mountains between 1905 and 1924 (Minnich et al. 1995). Fire suppression has been fairly effective in the Seven Oaks/Forsee Creek area, resulting in a high fuel load and lack of recent fire (M. Lardner pers. comm., 1999). Recent research in the San Bernardino Mountains suggests that suppression

of fires in mixed pine forests has resulted in increased tree densities and changes in forest composition. Shade tolerant tree species, such as white fir (*Abies concolor*) and incense cedar (*Calocedrus decurrens*), have increased, while representation of ponderosa pine in stands has generally decreased (Minnich et al. 1995). Estimates of the frequency of ground fires in pre-suppression times range from 15 to 30 years, with longer or shorter fire cycles occurring in response to the climates of the varying regions of the San Bernardino Mountains (Minnich et al. 1995). Habitat for *S. hickmanii* ssp. *parishii* in the San Bernardino Mountains appears to be both chaparral and mixed pine forest, with oak species (*Quercus chrysolepis* and *Q. kelloggii*) intermixed (Bennett 1979; Krantz 1981; Hirshberg 1995). Minnich (1986) suggests that average recurrence of fire in a stand of chaparral in southern California is about every 70 years. If so, and based on the emergence of *S. hickmanii* ssp. *parishii* in San Luis Obispo County 50 to 60 years after an earlier burn, then seven decades of fire suppression may not have substantially diminished viability of *S. hickmanii* ssp. *parishii* seedbanks that may exist in the chaparral of the San Bernardino Mountains. It is possible, however, that some southern occurrences of *S. hickmanii* ssp. *parishii* have evolved to take advantage of the more frequent fires that characterized pre-suppression mixed pine forests. These forests were characterized by more widely spaced trees, sparse canopies, and less shade than exists in the current forests (Minnich et al. 1995). Declining seed viability in the soil seedbanks could be occurring in these habitats due to fire suppression. It is also possible that, when these sites eventually burn, excessive fuel buildup could result in a very hot fire, killing a greater percentage of seeds than would occur during cooler, more frequent, non-suppression wildfires.

In Santa Barbara County, suppression of wildfires has also been practiced, although with less success in the less accessible San Rafael Wilderness, particularly under hot, dry, windy, conditions. Recent analyses suggest that the incidence of large fires has not declined under fire suppression in this region, although the frequency of smaller fires has decreased (Moritz 1997). In addition to fire suppression, prescribed fires conducted during atypical times of year, such as winter or spring, may negatively affect this taxon. Private dwellings and a town are within a 8 km (5 mi) radius of the Seven Oaks/Forsee Creek area in San Bernardino National Forest. Consequently, the Forest Service conducts prescribed burns only during very restricted periods in the fall or spring when weather and fuel conditions allow a high level of fire control (M. Lardner pers. comm., 1999). To date, the prescribed fire program has not resulted in the burning of much acreage in the Seven Oaks/Forsee Creek area in the last decade, and the Forest Service has focused their prescribed burning on forest understory vegetation rather than chaparral. Wet-season fires can result in very poor germination of plant species that typically germinate and establish abundantly following dry season burns (Parker 1986). It is possible that spring burning could alter the viability or germinability of *S. hickmanii* ssp. *parishii* and influence the composition of the surrounding vegetation community, including the abundance of nonnative species.

Displacement by nonnative plant species has been discussed as a potential threat to *S. hickmanii* ssp. *parishii* (Rodriguez 1999). Nonnative plants such as *Verbascum thapsis* (mullen) and *Tragopogon dubius* (goatsbeard) were documented in the two small recently burned areas in San Bernardino National Forest, although no *Sidalcea* was found there (Hirshberg 1995). *Centaurea solstitialis* (yellow star thistle) was documented in burned areas in San Luis Obispo

County, although not in substantial numbers (Rodriguez 1999). On Sierra Madre Ridge, fuelbreaks and some open areas along roadcuts where individual plants of *S. hickmanii* ssp. *parishii* occur, have been colonized by *Elytrigia intermedia* ssp. *intermedia* (pubescent wheatgrass), which were seeded into fuelbreaks on the National Forest in past decades (Smith 1998). There has not been adequate opportunity for post-fire monitoring in populations of *S. hickmanii* ssp. *parishii* to indicate that displacement by nonnative species is currently a threat to this taxon. However the presence and spread of nonnatives after fires in habitat of *S. hickmanii* ssp. *parishii* should be monitored and the potential for off-season (winter or spring) prescribed burns to alter the dynamics of post-fire communities in favor of nonnative species should be explored.

FOR RESUBMITTED PETITIONS:

- a. Is listing still warranted? Yes
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? Yes
- c. Is a proposal to list the species as threatened or endangered in preparation? No
- d. If the answer to c. above is no, provide an explanation of why the action is still precluded. Since publication of the 2002 CNOR, the publication of a proposed rule to list this species has been precluded by other higher priority listing actions, and based on work scheduled we expect that will remain the case for the remainder of Fiscal Year 2004. Almost the entire national listing budget has been consumed by work on various listing actions taken to comply with court orders and court-approved settlement agreements, emergency listing, and essential litigation-related, administrative, and program management functions. We will continue to monitor the status of this species as new information becomes available; this review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures.

LAND OWNERSHIP: All known populations are located on public lands managed by the Forest Service.

PRELISTING: A no expired Memorandum of Understanding (MOU) between the Forest Service and the Service was signed in 1996 (see Factor D). The Service provided funding for the Forest Service to conduct surveys for this taxon in 1998 as a result of this MOU. The MOU provides a vehicle for further cooperation between the Forest Service and Fish and Wildlife Service and should be renewed and expanded. A conservation strategy should be developed for the populations on San Bernardino National Forest, as well.

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LISTING PRIORITY (\* after number)

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

**Rationale for listing priority number:**

*Magnitude:* S. hickmanii ssp. parishii is known from three counties in southern California. The only San Bernardino County location is within a 2-hour drive of 14 million people and is popular with recreationalists (Forest Service 1988). No more than a dozen plants have been found at this location in the last decade (Hirshberg 1995; Krantz, in litt., 1993). The populations in Santa Barbara and San Luis Obispo Counties are more remote from developed recreational areas. In these locations, opportunities still exist to conduct prescribed burns in a manner that would promote the persistence of this taxon. Because this portion of the taxon's range is exposed to less severe threats, we conclude that the magnitude of threat is moderate to low.

*Imminence:* Recreational use and development in San Bernardino Forest and adjacent private inholdings continues in a manner that is likely to preclude the opportunity to preserve existing plants and conduct prescribed burns to promote the persistence of this taxon. We conclude this poses an imminent threat to this taxon in the southernmost portion of its range.

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

Approve: Steve Thompson \_\_\_\_\_ March 6, 2003 \_\_\_\_\_  
Acting Regional Director, Fish and Wildlife Service Date

Concur: Steve Williams \_\_\_\_\_ April 5, 2004 \_\_\_\_\_  
Director, Fish and Wildlife Service Date

Do not concur: \_\_\_\_\_ \_\_\_\_\_  
Director, Fish and Wildlife Service Date

Director's Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date of annual review: February 2003  
Conducted by: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_