State of California
The Resources Agency
Department of Fish and Game
Wildlife Management Division

FIVE-YEAR STATUS REPORT

AMERICAN PEREGRINE FALCON

by

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FIVE-YEAR STATUS REPORT

I. COMMON NAME: American Peregrine Falcon
SCIENTIFIC NAME: *Falco peregrinus anatum*
CURRENT CLASSIFICATION: California List: Endangered
Federal List: Endangered

II. RECOMMENDED ACTION

Retain Endangered classification on the California list. Assess the status of California's population after completion of an interagency monitoring program being conducted annually from 1988 through 1992. The State's evaluation of whether reclassification would be warranted should be done in conjunction with a similar federal classification review.

III. SUMMARY OF REASONS FOR RECOMMENDED ACTION

American Peregrine Falcons in California and throughout most of the range of this subspecies in North America have been making a steady recovery from a population crash that began in the 1940s. The population increase is encouraging but represents only a partial recovery. Much of the increase since the early 1970s has likely resulted from intensive efforts to find and protect previously unknown territories and from the intensive management program that has placed large numbers of captive-hatched peregrines into the wild. Although many wild nesting pairs can produce offspring without human assistance, many others continue to fail in their nesting attempts. Despite improvements in environmental quality that resulted from restrictions on use of DDT, the problem of environmental contamination by DDE, a breakdown product of DDT, still exists. "... Peregrine eggshell thinning continues at critical or near-critical levels throughout California. Peregrines nesting in the central coastal region are unable to hatch their eggs owing to excessive eggshell thinning and embryo deaths. A relatively large percentage of the dense population in the northern Coast Ranges fails to hatch eggs each year. There are no Peregrines nesting in vast portions of their historical range." (Walton, Thelander, and Harlow 1988).

The federal recovery plan (USFWS 1982) for the peregrine in California and three other Pacific states recommends criteria for determining when the subspecies should be considered for reclassification to Threatened status and ultimately when it should be removed from listed status. The U.S. Fish and Wildlife Service will be incorporating these recovery goals, perhaps with some modification, into the recovery goals for this species throughout the western United States.

The improving population status of this species is encouraging; hopefully, recovery plan criteria for considering federal reclassification to Threatened status in California could be met within the next five years. Thorough statewide inventories are being conducted annually for the 5-year period 1988-1992 to provide the data that would be needed to make such an assessment.

The State's review for possible reclassification of the peregrine to Threatened status in California should be done concurrently with the federal review.

SUPPORTING INFORMATION

IV. NATURE AND DEGREE OF THREAT

Historically, Peregrine Falcons were widespread in North America, but the species has always been a relatively uncommon bird of prey. Bond (1946) found peregrines in densities ranging from more than one pair per 2,000 sq mi to fewer than one per 20,000 sq mi. Densities of the three subspecies of peregrines on this continent rarely approached the high densities of subspecies in some other parts of the world; the continental population may have been somewhat less than 10,000 breeding pairs (Kiff 1988).

A precipitous decline in peregrine populations in North America and in many other parts of the world began in the late 1940s and early 1950s. Early management efforts emphasized three main areas of threat: direct persecution, destruction or degradation of habitat, and chemical pollution. All are important factors in the survival of this species, but one, chemical contamination, was the overwhelming cause of the population crash (Kiff 1988).

The decline followed the advent of heavy, world-wide use of DDT in the 1940s. DDT is an organochlorine pesticide that effectively killed a wide array of invertebrate pests. It also breaks down into other poisonous compounds that long persist in the environment, are absorbed into animal fatty tissues, and are accumulated in each individual as it feeds on other contaminated animals. These breakdown products quickly became common in living matter world-wide. The particular byproduct DDE, when accumulated to high enough levels in the tissues of many species of birds, results in detrimental physical changes to the shells of their eggs. Predatory birds are high in the food chain and thus obtain high concentrations of such biologically accumulated chemicals.

DDE contamination in peregrines in many parts of the world quickly reached levels high enough to cause significant thinning of eggshells and subsequent major or total reproductive failure. Wherever eggshell thickness reached or exceeded 17% reduction, the threshold for this species, the results were addling of eggs, death of embryos, or breakage of eggs (Peakall and Kiff 1988). This occurred throughout California, and by the time nearly all DDT uses were deregistered in the United States in 1972, only a remnant population of breeding birds remained in the State (Thelander 1976).

DDE persists in the environment from past use of DDT in California and in other parts of the world. Also, it is available from currently applied DDT in Latin American countries and from recent applications of Dicofol, a legal pesticide containing DDE as a contaminant or byproduct (EPA 1984; Peakall and Kiff 1988; Risebrough and Monk 1989).

The breeding population in California continues to be threatened by DDE-induced eggshell thinning. Eggshell thinning now is at about the same level as during the 1950s, and little change in thinning has been evident since 1978, when eggshell quality began to be monitored annually for the statewide population (Kiff, pers. commun.).

Eggshell thinning from DDE contamination alone accounts for the population crash that endangered this species, but other threats have been implicated in the decline of peregrine populations (Kiff 1988).

Other organochlorine pesticides, such as dieldrin and heptachlor, and their metabolites may have contributed to the decline (Risebrough and Peakall, 1988); they have since been deregistered for nearly all uses. Many other chemicals, such as PCBs and dioxins, are potentially detrimental to existing populations and are the subject of continuing research. Such research not only benefits this species but also provides information on contaminant effects on other species and on the human environment.

Among the other detrimental factors are exploitation or persecution resulting in direct mortality or loss of birds from the wild population. Such losses are detrimental to local breeding pairs or local populations, and they may hinder the population recovery. However, none of these factors, alone or in combination, currently threatens the species survival.

Shooting and trapping - Peregrines have long been shot or trapped as vermin. Until 1957, the peregrine, then commonly called the "duck hawk," received no protection under State law, being classified as a "predatory bird." From 1957-1970, the peregrine could be taken at any time only if found injuring property. In 1970, it received "fully protected" status under state law. Illegal shooting is still a problem or potential problem in some local areas; for example, a pigeon fancier was cited recently by the Department for shooting a peregrine that he claimed was feeding on his flock.

Falconry - The peregrine is one of the most prized birds used in the sport of falconry. In 1968, the capture of any peregrines in California for falconry was made illegal. The removal of nestling peregrines for training as hunting birds was prohibited in 1964, but observers who are hired annually to provide surveillance at vulnerable nest sites still guard against this activity.

Disturbance - Uncontrolled intrusions by people at or near active nest sites are activities that could cause nesting failure and temporary abandonment of nest sites. Illegal climbing into a nest, inadvertent approach by recreational rock climbers, visual or auditory disturbances from aircraft, construction, logging and mining activities, or other human activity near the nest or nest cliff are among such problems that require close monitoring and attention by agencies.

Our society's physical changes to peregrine habitats are long-term threats to the species. Such changes increase mortality and reduce the

quality and amount of habitat that peregrines need for feeding and reproduction.

Nesting sites - Peregrine breeding pairs typically have one or more alternate nest ledges on one or more cliff faces in their territories. Nearby construction projects involving blasting, or direct excavation by equipment or blasting of the cliff face, could destroy nest ledges. This could eliminate the possibility of peregrines ever occupying the territory, especially in areas having few nesting cliffs. The loss of good quality nest ledges would force birds to nest in poor sites, exposing eggs, nestlings and adults to greater mortality.

Food supplies - Changes to the land often reduce populations of bird species that once served as important prey of peregrines. This has occurred in areas such as coastal and inland wetlands and riparian habitats that now have been filled in, drained, or otherwise degraded and that no longer support large numbers of nesting, migrating, or wintering birds. Forested and more open habitats that have been changed to agricultural, industrial, residential, or urban areas either reduce food supplies or subject foraging peregrines to contaminants, collisions with obstacles, or shooting. These changes influence whether peregrines are able to continue to occupy, or to reoccupy, otherwise suitable nesting areas; to survive during the non-nesting periods; and, for young peregrines, to survive long enough to reach breeding age.

Collisions - The most frequent known cause of peregrine injury and mortality is collision with obstacles, such as powerlines, antennas and guy wires, chain-link and wire fences, and windows. Wires in feeding areas or near nesting sites are more likely to be struck by fast-flying peregrines when they are intent on pursuing prey or during lighting conditions that make the obstacles difficult to see. In cities, where some breeding pairs now nest, adult and young peregrines confused by reflections have flown into plate glass windows of buildings.

V. HISTORICAL AND CURRENT DISTRIBUTION

Historical

Prior to the mid-1940s, Peregrine Falcons nested throughout much of California, though rarely in desert areas (Herman, Kirven, and Risebrough 1970; Thelander 1976). Most nesting sites were found along the coastline, on the Channel Islands (Kiff 1980), and in inland mountains within 80 miles of the coast. Farther inland, they nested in lower density in parts of the Cascade Range, the Great Basin, and the Sierra Nevada, mainly near large water bodies or in river canyons (USFWS 1982). Peregrines have nested at elevations ranging from sea level to over 7,000 feet.

In 1969-70 and 1975-76, Herman et al. (1970), Herman (1971), and Thelander (1976) found a much more restricted range. The remnant known breeding population in 1975 and 1976 was reported mainly at northern

interior sites from Humboldt County east to Shasta County and south to Sonoma County, but some pairs were still nesting at coastline and inland sites near the coast from Monterey County to Santa Barbara County.

Current

Beginning in the late 1970s, survey efforts were intensified to find breeding territories that either had not been previously documented or that had newly formed as the species responded to increased protection and management. Since the mid-'70s, the population has substantially increased in the northern interior and mid-coastal areas, and there have been encouraging signs of reoccupancy of portions of the historical breeding range, such as the Sierra Nevada and the Channel Islands. However, there has been little reoccupancy of other historical breeding areas where recovery goals have been established: the northern coastal area north of Point Reyes, extreme northeastern California, the central and southern California coastal ranges, and the southern California coast.

During the non-nesting period, peregrines now occur nearly statewide, but rarely in the alpine zone and in deserts far from water bodies. In southeastern California deserts, they occur in the Colorado River and Salton Sea areas.

VI. HISTORICAL AND CURRENT ABUNDANCE

The records of Bond (1946), Herman (1970, 1971), and Thelander (1976) and others document over 200 historical nesting locations in California (Walton, Thelander, and Harlow 1988), but the pre-1947 size of the population of peregrines is unknown. Searches by Herman in 1969 and 1970 and by Thelander in 1975 and 1976 indicated that the statewide breeding population had declined by more than 90% from pre-1947 levels. They found fewer than 10 active pairs nesting per year. The greatest decline probably occurred in the '50s, and the low point in the statewide population may have been reached in the '60s or early '70s (Kiff 1988).

Beginning in the late 1970s, increased efforts were made to find, monitor, and protect nesting sites of Peregrine Falcons, and intensive and successful management programs were begun to augment natural productivity with offspring from captive birds and from captive incubation of thin-shelled wild eggs (Walton, Thelander, and Harlow 1988; Walton and Thelander 1988). The breeding population of peregrines in California has been steadily increasing (Table 1). In 1988, 103 known or suspected peregrine nesting sites were investigated, and breeding activity was documented at 82 of the sites (Kirven, Monk, and Walton 1988; Linthicum 1988). Additionally, wintering and transient peregrines are being observed in suitable habitats more frequently throughout California.

The population has increased partially because of improvement in nesting success following restrictions on use of DDT and increased protection of nesting sites. Management programs have been

indispensable in this recovery, adding large numbers of captive-hatched nestlings to the wild to bolster natural productivity. This has contributed to the population increase in a major way. For example, one or both adults at nearly half of the known nesting sites in the northern Coast Range and central coast of California wear blue bands, showing that they were nestlings from the captive breeding and rearing facilities of The Peregrine Fund (Walton, Thelander, and Harlow 1988).

Table 1. Peregrine Falcon Breeding Population Size and Productivity in California, 1975 through 1988 (California Department of Fish and Game 1988).

YEAR	NO. SITES[1] OBSERVED	NO. SITES[2] ACTIVE	NO. OF YOUNG[3] FLEDGED, TOTAL	% OF YOUNG[4] RELEASED	NO. OF YOUNG[5] WILD-FLEDGED
1975	10	7	12	0%	12
1976	15	11	17	0	17
1977	17	12	20	5	19
1978	24	19	31	10	28
1979	37	28	37	14	32
1980	48	39	68	12	60
1981	50	38	61	30	43
1982	61	49	63	35	41
1983	67	52	67	49	34
1984	73	63	91	49	46
1985	88	70	105	27	77
1986	92	77	98	28	71
1987	100	79	108	22	84
1988	109	82	117	21%	92

[1] All sites where peregrines have occupied territories in any year since 1975.

[2] "Active" sites are those with a copulating pair of peregrines (seen or inferred). This summary excludes the number of sites annually observed to have one or more non-copulating birds ("occupied" sites).

[3] Total number of young that fledged from manipulated and non-manipulated sites. Manipulated sites are those that received captive-hatched nestlings.

[4] Of all young fledged from nests of wild peregrines, this is the proportion that had been captive-hatched and placed ("fostered") into active nests. From 1981-1988, additional captive-hatched peregrines were released into California by other methods (see Section IX).

[5] Total number of young fledged from unmanipulated sites.

Although the size and range of the breeding population are increasing annually, many regions of California that formerly supported breeding pairs are still unoccupied. Even within areas of population increase,

the numbers of breeding pairs are now well below former population levels, based on the current extent of reoccupancy of historical nest sites. Of 200 historical sites documented by Bond (1947) and later researchers, only 35 have become reoccupied (Walton, Thelander, and Harlow 1988). The recent population increase is encouraging, but it still represents only a partial recovery from the post-1947 decline.

VII. SPECIES DESCRIPTION AND BIOLOGY

The peregrine is a medium-size raptor. The sexes are similar in appearance, the female being about one-third larger than the male. Males from California weigh about 0.6 kg (20 ounces), females about 1 kg (34 ounces). Peregrines have a wingspread of about 90-100 cm (35-40 in).

Adults are slate gray above, and underparts are buff-colored with a rufous wash. The chin and throat are white. The breast is spotted, and narrow black bars cover the belly and underside of the tail and long-pointed wings. The head is mostly black, with the black feathering extending well below the eye. Legs and feet are yellow.

Immature birds are brown on the back and top of the wings, where the feathers have buff-colored edges. The breast and belly are streaked with brown, and the undersides of the wings and tail are narrowly barred. Legs and feet are blue-gray to green-yellow.

Peregrines feed almost exclusively on other birds that they catch in flight mainly in open areas, such as wetlands or grasslands, or above trees. They are swift flyers that chase down and grab birds or strike them out of the sky in a spectacular diving attack. During the "stoop", the peregrine, after flying well above its quarry, folds its wings and dives bullet-like at 100 to 200 miles per hour, grasping its prey, or sometimes battering it with clenched talons and retrieving it in the air or on the ground. Peregrines hunt by day or in twilight, not during darkness.

Nearly 80 species of birds were identified in samples of prey remains collected at northern California nest sites in 1982 and 1983 (Monk and Harlow 1983). They ranged in size from a hummingbird to a medium-size gull. Samples included small numbers of bats, as well as non-flying vertebrates that the peregrines might have obtained when attacking birds carrying prey. Some of the species that were more frequently represented in these samples included (in taxonomic order) dowitcher, Western Sandpiper, Band-tailed Pigeon, Rock Dove, Mourning Dove, Northern Flicker, and Starling. The food habits of any particular pair are influenced by factors such as local habitat characteristics and the seasonal availability of prey species.

In California, breeding pairs of peregrines typically remain in the vicinity of their breeding territories year round. They become more closely associated with the nesting cliff during the breeding season, from the time the birds begin courting and selecting the nest site (which begins about February) until their offspring depart the nesting area (usually in July). During nesting, the peregrines attack and

drive off other birds of prey, especially eagles and other peregrines (including unpaired adults, called "floaters"), that pass through their territory. During the nesting season, adult peregrines hunt over a large area around the nest site; foraging flights may extend as many as 12 miles from the nest (Kirven, pers. commun.).

Courtship begins a month or two before eggs are laid. The male stimulates the female by his flight displays and by his posturing and calling on the ledge of the cliff where nesting is to take place. The male begins regularly feeding the female in courtship "food-transfers" about a month before egg-laying. Often, the food is exchanged in flight near the nesting cliff. A few days before the first egg is laid, the female becomes sedentary and appears lethargic.

Egg laying in California normally begins in March. Usually, four eggs (the normal range being 3 to 5) are laid in the scrape at intervals of about 2 days. Incubation begins about the time that the next-to-last egg is laid. If the first clutch is taken by predators or biologists, or if the eggs break early in incubation because of the elements or DDE-induced eggshell thinning, the adults may lay a second clutch at an alternate site beginning about 2 weeks later.

The adult male and female share incubation duties during the approximately 33-day incubation period. After hatching, brooding is done almost exclusively by the female until the nestlings are about 15 days of age, when they begin to regulate their own body temperature.

The nestlings fledge at about 40 days of age, which is usually in late May or June in California. Fledglings remain in the vicinity of the nest for several weeks, begging for food brought by the parents and learning to catch their own prey. When they become proficient at local hunting, the young birds depart the nesting area and become independent (Nelson 1970).

Immature peregrines from California range more widely than breeding adults and are known to travel as far south as northern Mexico and as far north as central Oregon (Anderson et al. 1988; Walton, pers. commun.). They reach maturity at two or three years of age, when they may replace the dead member of a previously existing breeding pair, find a mate and establish a new territory, or singly occupy and defend a promising nesting cliff. Peregrines typically return to the general area of their origin to nest, but some peregrines establish their territories in areas hundreds of miles away from where they fledged. However, no peregrines banded in California have been located outside the state in adult plumage (Walton, pers. commun.).

Immature and adult peregrines become more widespread in California during late summer through winter, as birds move to favorable feeding areas. The movements may be influenced by the occurrence of migrating and wintering prey species.

Peregrines of the American (*anatum*) and Tundra (*tundrius*) subspecies from northern breeding areas as far away as Alaska pass through California during the autumn and spring migrations, and Peale's Peregrine Falcons (*F. p. pealei*) from British Columbia winter along the California coast (Anderson et al. 1988).

VIII. HABITAT REQUIREMENTS

Breeding territories of peregrines are located in areas containing suitable nesting cliffs or other cliff-like features in association with a variety of habitats over a large expanse of land or coast. Typically, territories are associated with water bodies--lakes, rivers, ocean--that support abundant prey. When hunting, the peregrines may travel many miles from the nest in search of birds in flight over forests, grasslands, agricultural lands, marshes, seacoasts, open ocean, riparian areas, and urban areas. Peregrine breeding territories are larger than those of many other birds of prey. Bond (1946) considered the species to be "common" when densities exceeded one breeding pair per 2,000 sq mi, such as in California.

In the peregrine's territory, there may be one or more nesting cliffs with usually more than one cave, pothole, or ledge suitable for raising young birds. Often there are alternate ledges that could be used when the selected site becomes unsuitable because of human disturbance, degradation or destruction, infestation by ectoparasites, or occupancy by other birds. The nesting surface must be large and flat enough to keep the eggs and, later, up to four full-grown nestlings from falling. The ledge substrate usually consists of sandy or gravelly soil in which the adults form a shallow depression; eggs are laid in this "scrape." The nesting site must be well drained or protected from rain or seepage by an overhang. The site must receive adequate shade for the nestlings during the heat of the day.

Peregrines typically select nest sites in the upper third of the highest and sheerest cliffs in the area; however, the nest location on the cliff face and the size and steepness of cliffs vary considerably (Ratcliffe 1980). Even very small outcrops and bluffs have supported successful breeding pairs. Historically, nesting peregrines in California had been reported only rarely in tree or open ground sites. As new pairs establish territories in coastal urban areas, buildings and bridges have been selected as "breeding cliffs." Peregrines had nested on tall buildings in cities long before the population crash, and this habitat is now being re-exploited by the species for nesting and for foraging by non-breeders.

Habitats used by migrating and wintering peregrines include a wide variety of forests, grasslands, and wetlands throughout most of the State, but rarely at high elevations (e.g., the Sierra Nevada crest) or in deserts far from large bodies of water. Peregrines frequent areas where smaller birds are abundant, such as woodlands, riparian areas, forested canyons, coastal bluffs, valley croplands, rivers, lakes and marshlands. Important habitats are those that support concentrations of migratory birds, such as coastal and inland wetlands with large numbers of waterfowl and shorebirds.

IX. CURRENT AND RECOMMENDED MANAGEMENT

The recovery programs for peregrines in the western states have been guided by two recovery plans, one for the Rocky Mountain/Southwest population, and one for California, Oregon, Washington, and Nevada, which is the area included in the Pacific Coast region's recovery planning area (USFWS 1982). The Pacific Coast plan recommends criteria that should be met before the species would be considered for federal reclassification to Threatened status and ultimately for removal from listed status. As recommended in the 1982 plan, reclassification to Threatened should be considered after breeding population goals have been met for each of 22 geographic regions in the four-state area. De-listing should be considered when the states meet breeding population recovery goals for "self-sustaining populations." For California, the recommended recovery goal is 120 pairs, combined with other recovery indicators, such as adequate and sustained annual productivity. These recovery goals may be modified to some extent by current federal efforts to consolidate and update peregrine recovery planning for the western United States.

In California and elsewhere in the west, the most significant conservation action, which in the long term will benefit the peregrine and kept it from being extirpated, was the deregistration of nearly all uses of DDT in Canada in 1969 and in the U.S. in 1972 (Kiff 1988). But the western populations were so low at that time that the remnant populations were highly vulnerable to continued effects of DDE in the environment and to other factors that could have continued to decimate the population. So, intensive, short-term management efforts were undertaken by agencies to protect and enhance the remaining population following the listing of the *anatum* subspecies as Endangered.

The Endangered classification was provided under federal law in 1970 and under California law in 1971. Federal Endangered Species Act provisions regarding peregrines were amended in 1984, extending protection to any subspecies in California.

Management and protection efforts in California began in the 1970s. Early status surveys in 1969-70 (Herman et al. 1970; Herman 1971) and in 1975-76 (Thelander 1976) provided the basic information needed to initiate interagency protection and recovery efforts. By the late '70s, annual statewide surveys were being conducted (Walton, Thelander, and Harlow 1988) by observers in helicopters and on the ground, and innovative and intensive management techniques were being developed by the Santa Cruz Predatory Bird Research Group (Walton 1977; Walton 1983) and by The Peregrine Fund, including captive breeding programs and the release of young, captively raised birds to the wild (Weaver and Cade 1983; Sherrod et al. 1982).

The multi-faceted recovery program includes annual surveying to document nesting sites; monitoring of breeding behavior, sources of disturbance, and nesting success; protection of nesting sites by nest guards, law enforcement efforts, environmental review of projects, and acquisition of habitat; enhancement of existing poor nest ledges and creation of new ones, where needed; collecting of eggshell fragments and addled eggs for analyses; and banding of nestlings.

Captive breeding is done primarily at The Peregrine Fund's breeding center at University of California, Santa Cruz. Captive breeding and releasing young birds into the wild involves many aspects: collecting and captively incubating wild-laid, thin-shelled eggs; breeding of peregrines in captivity; hatching of captive-laid and wild-collected eggs; and releasing young birds to the wild through various means.

Release methods include the process called "fostering": placing nestlings into nests--where eggs had been previously collected and replaced temporarily by artificial eggs--for the wild parents to raise; "cross-fostering": putting captive-hatched nestling peregrines into nests of wild Prairie Falcons (*F. mexicanus*) in place of translocated prairie nestlings; and "hacking": releasing from artificial nest ledges groups of captive-hatched peregrine nestlings raised in "hack boxes" without contact with humans or wild adult birds.

Most releases of captive-hatched young peregrines to the wild are being done under two operations: 1) augmenting the productivity of existing wild pairs by "fostering" in areas of the state, such as the central coast, where natural productivity is poor or non-existent; or 2) introducing by "hacking" or "cross-fostering" large numbers of young birds into areas, such as the Sierra Nevada and south coast, where natural populations had become nearly or completely extirpated.

The number of captively raised young peregrines released to the wild in the Pacific states in 1988 was 74, bringing the total number released from 1977 to 1988 to over 500 (Linthicum 1988). Most releases have been in California, where 239 birds were "fostered" from 1977-1988 (Table 1), and more than 200 others were released by "hacking" and "cross-fostering" from 1981-1988 (Walton, pers. commun.).

Beginning in 1988, peregrine hacking projects in the western states have been coordinated through an Annual Reintroduction Plan, prepared by U.S. Fish and Wildlife Service.

Many peregrine nesting areas are on, or partially on, federal lands, and the federal agencies provide site management (e.g., Olendorff et al. 1989). The Department of Fish and Game, through acquisitions or management agreements, now maintains four Ecological Reserves to protect peregrine eyries.

In 1980, the interagency California Peregrine Falcon Working Team was established to help agencies and researchers by coordinating statewide management and protection efforts. The team is composed of representatives of Fish and Wildlife Service, Forest Service, Bureau of Land Management, National Park Service, and Department of Fish and Game.

There is a continuing need by this interagency group, working with the federal recovery team, to review ongoing management programs and to direct future efforts. For example, the working team needs to assess the release program to develop guidelines and direction for selecting future release strategies and release areas in California. Also, the team could assist California agencies in coordinating the various agency responsibilities and funding sources. As the population of

peregrines continues to grow, we may see increasing conflicts between this species and other endangered bird species in limited habitats, pigeon fanciers with depredation problems, and building and bridge authorities on whose structures peregrines nest. The working team will need to advise management agencies that must deal with such issues.

The number of sites annually surveyed in California has increased from 22 in 1977 (Harlow 1977) to 103 in 1988 (Kirven, Monk, and Walton 1988). In 1988, the Bureau of Land Management, Forest Service, Fish and Wildlife Service, National Park Service, and California Department of Fish and Game entered into a Memorandum of Understanding that ensured that the California peregrine breeding population would be adequately monitored annually during the 5-year period of 1988-1992, under the coordination lead of Bureau of Land Management. This is being done to provide the data that will be needed by the agencies to properly assess whether to reclassify this species from Endangered to Threatened after 1992, by which time it is anticipated that recovery plan goals could be met.

With the improvement of the status of peregrines throughout the western United States, the Fish and Wildlife Service is implementing changes in the recovery program structure. This entails replacing the two teams with a new recovery team that will prepare a single implementation schedule linking the two recovery plans. In early 1989 the old teams were terminated, and a new team is being formed. Management efforts for the entire western U.S. will now be coordinated under one recovery program, with state working teams providing local program guidance.

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Memorandum

To : Whom It May Concern

Date : November 21, 1989

From : Department of Fish and Game

Subject : Peregrine Falcon Population Data: Update of the Five-Year Report

Attached is a table of population data to supplement the recent "Five-Year Status Report (1989), American Peregrine Falcon". This is a revised Table 1, adding statewide population data for 1989.

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Attachment

1989 UPDATE OF TABLE 1, PAGE 6

Peregrine Falcon Breeding Population Size and Productivity in California, 1975 through 1989.

YEAR	NO. SITES[1] OBSERVED	NO. SITES[2] ACTIVE	NO. OF YOUNG[3] FLEDGED, TOTAL	% OF YOUNG[4] RELEASED	NO. OF YOUNG[5] WILD-FLEDGED
1975	10	7	12	0%	12
1976	15	11	17	0	17
1977	17	12	20	5	19
1978	24	19	31	10	28
1979	37	28	37	14	32
1980	48	39	68	12	60
1981	50	38	61	30	43
1982	61	49	63	35	41
1983	67	52	67	49	34
1984	73	63	91	49	46
1985	88	70	105	27	77
1986	92	77	98	28	71
1987	100	79	108	22	84
1988	109	82	117	21	92
1989	103	90	117	15%	99

[1] All sites where peregrines have occupied territories in any year since 1975.

[2] "Active" sites are those with a copulating pair of peregrines (seen or inferred). This summary excludes the number of sites annually observed to have one or more non-copulating birds ("occupied" sites).

[3] Total number of young that fledged from manipulated and non-manipulated sites. Manipulated sites are those that received captive-hatched nestlings.

[4] Of all young fledged from nests of wild peregrines, this is the proportion that had been captive-hatched and placed ("fostered") into active nests. From 1981-1988, additional captive-hatched peregrines were released into California by other methods (see Section IX).

[5] Total number of young fledged from unmanipulated sites.