DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AC01

22-7-93

Endangered and Threatened Wildlife and Plants; Proposal To Remove the Arctic Peregrine Falcon From the List of Endangered and Threatened Wildlife

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule

SUMMARY: The Fish and Wildlife Service (Service) proposes to remove the arctic peregrine falcon (*Falco peregrinus tundrius*), currently listed as threatened, from the list of Endangered and Threatened Wildlife throughout its range. Evidence shows that arctic peregrine falcon populations have recovered since the use of organochlorine pesticides was restricted in the United States. This action is taken on behalf of this subspecies pursuant to the Endangered Species Act of 1973, as amended (Act). Removal from the list of Endangered and Threatened Wildlife would result in elimination of regulatory protection offered by the Act but would not affect protection provided by the Migratory Bird Treaty Act. Section 4(g) of the Act requires the Service to implement a system in cooperation with the States to monitor a recovered species for 5 years following delisting. This proposal includes a draft monitoring plan that will be refined and implemented if the arctic peregrine falcon is delisted as proposed.

DATES: Comments from all interested parties must be received by December 29, 1993. Requests for a public hearing must be received by November 15, 1993.

ADDRESSES: Comments and information concerning this proposal should be sent to Ted Swem, Division of Endangered Species, U.S. Fish and Wildlife Service, 1412 Airport Way, Fairbanks, Alaska 99701. Comments and information received will be available for inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Ted Swem, at the above address (907) 456–0441 or Skip Ambrose at the above address (907) 456–0239.

SUPPLEMENTARY INFORMATION:

Background

The peregrine falcon is a medium-sized brown or blue-gray raptor that preys predominantly upon birds. It is nearly cosmopolitan in distribution; three subspecies occur in North America. The Peale's peregrine falcon (*Falco peregrinus pealei*) is resident year-round on the northwest Pacific coast, from northern Washington or British Columbia to the Aleutian Islands, Alaska. The arctic peregrine falcon (*F. p. tundrius*) nests in the tundra regions of Alaska, Canada, and Greenland. It is a long-distance migrant, wintering in Latin America (from Cuba and Mexico south through Central and South America). The American peregrine falcon (*F. p. anatum*) breeds throughout much of the remainder of North America, from the subarctic boreal forest to Mexico. American peregrine falcons that nest in subarctic areas also winter in Latin America while those that nest in lower latitudes migrate shorter distances or are nonmigratory.

Peregrine falcon numbers in North America declined precipitously following World War II. Organochlorine insecticides came into use in the United States during the same period for the control of agricultural and forest pests and mosquitos. Their use peaked in the 1950's or early 1960's and continued until 1973. Organochlorines and their metabolites are stable and long-lived compounds which are deposited in the fatty tissues of animals ingesting contaminated food. Peregrine falcons and other birds near the top of the food chain, such as ospreys (*Pandion haliaetus*), bald eagles (*Haliaeetus leucocephalus*), and pelicans (*Pelecanus* spp.), gradually accumulated large doses by eating numerous contaminated prey items. Organochlorines affect peregrine falcons by causing direct mortality and by inhibiting reproduction. Due to the difficulty of measuring mortality in wild populations, the effects of organochlorines upon mortality rates remain largely unquantified. The effects of organochlorines upon avian reproduction are more easily studied and are better understood. Organochlorines influence reproduction in several ways: Heavily contaminated females may fail to lay eggs; organochlorines are passed from the female to the egg during laying and can kill the embryo before it hatches; and organochlorines alter behaviors such as nest defense and attentiveness, which reduces nest success. Possibly the most detrimental effect of pesticides, however, resulted from contamination with the pesticide DDT. DDE, the principal metabolite of DDT, prevents normal calcium deposition during eggshell formation, causing females to lay thin-shelled eggs that often break before hatching. Shell thinning and nesting failures were widespread in peregrine falcons in North America during the period of DDT use, and, in some areas, successful reproduction virtually ceased.

Pesticides caused a marked decline in the number of peregrine falcons in many parts of North America between the 1940's and early 1970's by increasing mortality rates and decreasing reproductive performance. The degree of exposure to pesticides varied among different regions of the North American continent, however, and peregrine falcon populations in the more contaminated areas suffered greater

declines. Those that nested in the agricultural and forested areas of the eastern United States and southeast Canada were the most heavily contaminated and were extirpated by the mid-1960's. Those that nested outside of agricultural and forested regions were affected less, although exposure to organochlorines still occurred during migration and by eating prey that migrated through, or wintered in, more heavily contaminated regions. Peregrine populations declined by as much as 75 percent in the western United States and in arctic and subarctic areas of the continent. The exact degree of most local declines, however, remains unknown due to the lack of pre-pesticide era population censuses. The Peale's peregrine falcon, resident year-round in the Pacific Northwest, suffered little exposure to pesticides and its numbers remained relatively stable.

In response to the population declines, the Service in 1970 protected the arctic and American peregrine falcons under the Endangered Species Conservation Act of 1969. Peale's peregrine falcons were not included. Arctic and American peregrine falcons were afforded the greater protection of the Endangered Species Act of 1973 (U.S.C. 1531 et seq.) upon its passage. The Act requires review of all activities funded, permitted, or conducted by Federal agencies to minimize impacts to endangered or threatened species. As a result, harvest of peregrines for the sport of falconry was prohibited and peregrine falcon nest sites on Federal land were protected. The most pivotal action in aiding the recovery of the peregrine falcon, however, was regulation of the use of organochlorine pesticides. The use of DDT was restricted in Canada in 1970 and in the United States in 1973. Restrictions that controlled the use of other organochlorine pesticides, including aldrin and dieldrin, were imposed in the United States in 1974.

Since implementation of restrictions on the use of organochlorine pesticides, reproductive rates in most surviving peregrine falcon populations have increased, and populations have subsequently expanded. This is particularly true in northern areas, where pesticide exposure was lower and impacts upon populations were less severe. By 1984 the recovery of arctic peregrine falcons had progressed sufficiently that the Service reclassified the subspecies from endangered to threatened (49 FR 10520, March 20, 1984). The number of arctic peregrine falcons continued to increase. In 1991, the Service began reviewing the status of the threatened arctic peregrine falcon to determine if a proposal to delist was appropriate.

At nearly the same time, the Canadian government began to review the classification of the subspecies in Canada. In Canada, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) reviews the status of species and classifies species in peril into one of three categories: Endangered, threatened, and vulnerable, with endangered being the most imperiled and vulnerable the least at risk. Arctic peregrine falcons were classified as threatened in Canada from 1978 to 1992. In 1992, in response to improvement in the status of the subspecies, COSEWIC reclassified arctic peregrine falcons in Canada as vulnerable.

The status review initiated by the Service in 1991 consisted of reviewing all available information on the status of arctic peregrine falcons throughout their range. Information was received from biologists, researchers, and the public in response to an information request published in the **Federal Register** (56 FR 26969, June 12, 1991). The results of this status review form the basis of this delisting proposal and are summarized below:

Breeding Surveys

Arctic peregrine falcons nest in the tundra regions of northern and western Alaska; northern Canada, including the Yukon, Northwest Territories (NWT), Quebec, and possibly Labrador; and the ice-free perimeter of Greenland. Due to the vastness of the subspecies' range and the remote location of most nesting areas of arctic peregrine falcons, information on breeding biology comes from a few widely scattered study areas. Information derived from breeding surveys includes four measures useful in assessing population status and the current effects of environmental contaminants: (1) Population size and trend, (2) reproductive performance, (3) pesticide residues in eggs, and (4) eggshell thickness.

(1) Population Size: Although many arctic peregrine falcon breeding areas have been surveyed during the past 20 years, few long-term studies have been conducted using consistent methodology enabling the comparison of data sets and the detection of population trends. Arctic peregrine falcons probably began to decline in the 1950's, reached their lowest levels in the early 1970's, and began to increase in the late 1970's. Four areas in northern North America from which historical survey information is available clearly illustrate trends in population size. The number of pairs of arctic peregrine falcons occupying nesting territories in these four areas is as follows:

Year	Colville River Alaska[2]	Hope Bay NWT[3]	Coppermine NWT[3]	Rankin Inlet NWT[4]
1959[1]	35	.....	.....	.....
1968[1]	32	.....	.....	.....
1971[1]	25	.....	.....	.....
1978	15	.....	.....	.....
1979	16	.....	.....	.....
1980	21	.....	.....	.....
1981	24	.....	.....	17
1982	27	.....	17	19
1983	26	25	17	19
1984	32	27	28	20
1985	30	29	17	26
1986	34	18	24	25
1987	37	39	29	23
1988	47	35	25	23
1989	53	58	37	22
1990	51	61	34	26
1991	56	52	51	28

Year	Colville River Alaska [2]	Hope Bay NWT [3]	Coppermine NWT [3]	Rankin Inlet NWT [4]
1992	57	45	42	24

[1] From Cade et al. 1968; White and Cade 1975.
[2] 1978–1992—unpublished Service data on file, Fairbanks, Alaska.
[3] Data from Shank et al. 1993; Chris Shank, Dept. of Renewable Resources, Govt. of Northwest Territories, pers. comm., 1992.
[4] Data from Court et al. 1989; C. Shank, pers. comm., *in litt.*,1991.

Population size has increased in these four areas, although the rate of increase at Rankin Inlet, NWT, is less than in other areas. The density of pairs in the Rankin Inlet study area in 1985 was one pair per 17 square kilometers (6.6 square miles), which is among the highest densities recorded for the species (Court *et al.* 1988). Presumably peregrine falcons were nearly at carrying capacity in this area in the mid-1980's, and density-dependent factors prevented a further increase in numbers. The decrease noted in the number of pairs seen breeding at Hope Bay and Coppermine during the last two years warrants explanation. Surveys are conducted in late summer and, therefore, count predominantly pairs with successful nests. Severe spring and summer storms caused many nesting failures in these areas during 1991 and 1992, thereby decreasing the number of successful pairs (C. Shank, pers. comm., 1992). Therefore, the decrease noted reflects temporary weather-caused effects on nesting success rather than a reversal in the trend of increasing population size.

Surveys in other sample areas within the arctic peregrine falcon's breeding range have provided additional evidence that numbers have increased rapidly in recent years. The rate of population growth on the Colville River is comparable to that found in other areas in Alaska, such as the Sagavanirktok and Kogosukruk Rivers, Norton Sound, and in scattered locales on the north slope of the Brooks Range. The number of arctic peregrine falcons currently nesting in Alaska is estimated to be 200–250 pairs (130 pairs known in 1991). Numbers in some areas of Alaska exceed the original estimates of pre-DDT era population size (unpublished Service data, Fairbanks, Alaska).

In addition to Coppermine, Hope Bay, and Rankin Inlet, arctic peregrine falcon surveys have been conducted in other areas in the NWT. Extensive surveys conducted between 1982 and 1985 revealed numerically healthy populations in the Bathurst and Minto Inlets areas, Somerset Island and the Boothia Peninsula, and the Baffin Island region (Bromley 1988). Other surveys have located sizable numbers nesting in additional areas along the north coast, on the islands in the Arctic Ocean, in the Interior Barrens, and near the northwest coast of Hudson Bay (Bromley 1988; Court *et al.* 1989). Although comparable, long-term surveys have not been conducted in these areas, no recent evidence has been found of declining or reduced populations (Bromley 1988).

Arctic peregrine falcons also nest in northern Quebec, in Greenland, and on the east coast of Labrador. The birds nesting in Labrador may actually be American peregrine falcons. The number of arctic peregrine falcons breeding in the eastern arctic is substantial: The number of pairs in Greenland alone is estimated to be 1,000 to 2,000 pairs (William Mattox, Greenland Peregrine Falcon Survey, pers. comm., 1992). Survey techniques have not allowed detection of long-term population trends in eastern arctic areas, but peregrine falcons have recently occupied many previously vacant nesting sites (David Bird, McGill University, Quebec, pers. comm., 1991; Mike Yates, Greenland Peregrine Falcon Survey, pers. comm., 1992). Peregrine falcon nesting sites are typically occupied for long periods, despite turnover of the individuals using the sites. The recent occupation of vacant nesting sites in the eastern arctic parallels a similar pattern observed in other areas where numbers are known to have increased.

Only one local population of arctic peregrine falcons was known to be extirpated. A relatively small population, originally numbering around 15 pairs, occurred on the north slope of the Yukon Territory but was extirpated during the 1970's (Mossop 1988; Mossop in Murphy 1990). Two pairs and one single adult occupied nesting territories in this area in 1992 (Dave Mossop, Dept. of Renewable Resources, Yukon Territory, pers. comm., 1992) indicating that this region is gradually being recolonized by individuals from adjacent areas.

(2) Productivity: In Alaska, productivity reached its lowest level of about 0.6 young per pair (yg/pr) in the mid 1970's. Productivity improved in the late 1970's, reaching 0.9 yg/pr in 1979. From 1980 to 1992 it varied between 1.3 and 2.0 yg/pr, which was sufficient to support an average annual increase in the breeding population size of about 12 percent (unpublished Service data on file, Fairbanks, Alaska). In Canada, a decrease in the productivity of arctic peregrine falcons was never clearly documented, although populations decreased in size so productivity almost certainly declined. At Rankin Inlet, NWT, productivity averaged about 1.5 yg/pr between 1981 and 1992 (Court *et al.* 1988; C. Shank, pers. comm., 1991 and 1992), although annual productivity varied tremendously in response to variation in weather conditions (Court *et al.* 1988). Productivity in Ungava Bay, Quebec, reached a low of 1.33 yg/pr in 1970, and exceeded 2.7 yg/pr in each of 3 surveys conducted since 1980 (Bird and Weaver 1988; David Bird, pers. comm., *in litt.*, 1991). Reproductive rates have remained high in Greenland since observation began in 1972. In western Greenland from 1972 to 1992, productivity was always at least 1.80 yg/pr (William Mattox, pers. comm., *in litt.*, 1991). Similarly, in southernmost Greenland, production remained high from 1981 to 1991 (Knud Falk, Ornis Consult A/S, *in litt.*, 1992).

"Normal" productivity rates vary among regions. It is difficult, therefore, to assess the health of a local population based upon productivity rate alone. However, productivity in all regions studied has been sufficient to support a stable or increasing population size since the 1980's.

(3) Pesticide Residues: Concentrations of DDE in peregrine falcon eggs in excess of 15 to 20 ppm (parts per million, wet weight basis) are associated with high rates of nesting failure; if residues average less than this critical level, productivity is usually sufficient to maintain population size (Peakall *et al.* 1975; Newton *et al.* 1989). Available data are insufficient to allow a complete understanding of changes in residues over time, but residues in eggs have decreased since the 1970's and are currently well below the 15–20 ppm critical level. Sampling and analytical techniques have been similar but not identical in various areas and time

periods, so comparisons are imprecise. The general trend over time, however, is similar in all areas sampled.

Arctic peregrine falcon eggs have been periodically collected in Alaska for pesticide analysis. The DDE content, expressed as parts per million (ppm) of the compound p,p'DDE (wet weight basis), of eggs collected in Alaska during 4 time periods is as follows:

Year	Avg.[1] DDE (ppm)	Max. DDE (ppm)	Percent eggs w/ DDE >10 ppm	Sample size
1958[2]	23.5	99	89	9
1979–1984[3]	9.3	46.4	42	19
1988–1989[3]	3.7	10.3	5	20
1990–1991[2]	3.3	5.3	0	13

[1] Averages expressed as the geometric mean.
[2] Data from J. Lincer, Biosystems Analysis, pers. comm., *in lit.*.
[3] Data from unpublished Service survey results on file, Fairbanks, Alaska.

In Canada, DDE residues in arctic peregrine falcon eggs showed similar trends, although average concentrations were never as high as those found in Alaskan eggs in 1967. Average residues (average residue concentrations throughout this proposal are reported as geometric means) were 9.9 ppm (maximum 72.0) in 1965–1972, 8.5 ppm (max. 19.6) in 1973–1979, and 6.8 ppm (max. 18.5) in 1980–1986 (Peakall *et al.* 1990). Eggs from 36 clutches collected at Rankin Inlet, NWT, in 1981–1986 averaged 7.6 ppm (Court *et al.* 1990). Eggs collected in Greenland between 1972 and 1978 averaged 12.8 ppm DDE (Burnham and Mattox 1984), but by 1981 and 1982 the maximum (average not given) in 9 eggs was 9.1 ppm (Mattox and Seegar 1988). Residues of other organochlorines in arctic peregrine falcon eggs have also decreased since the 1970's, and residues are currently well below critical values.

(4) Eggshell thickness: DDE-caused eggshell thinning was possibly the most important factor causing the decline of arctic peregrine falcons. Average eggshell thickness decreased by as much as 24 percent in Alaska during the peak period of organochlorine contamination. This decreased eggshell thickness corresponded with greatly reduced reproductive success. Eggshell thickness has increased significantly since the use of DDT was restricted in the United States, but pesticides accumulated in Latin America still affect shell thickness. Shells from Rankin Inlet, NWT, collected in 1981–1986 averaged 15.8 percent thinner than pre-DDT shells (Court *et al.* 1990). Alaskan shells collected in 1979–1984 averaged 13.4 percent thinner than pre-DDT thickness measurements, and shells collected in 1988–1991 averaged about 12 percent thinner. Peregrine populations are expected to decrease in size if eggs have shells averaging at least 17 percent thinner than normal. Populations laying eggs averaging less than 17 percent thinner than normal produce enough young to maintain stable or increasing numbers of breeding pairs (Kiff 1988). Although arctic peregrine falcon eggs are currently below the level at which populations are affected, an increase in exposure could again place the birds at risk.

Migration Counts

One method for detecting changes in populations of migratory raptors is to count the number of birds passing fixed points along their migration paths. Although migration counts typically contain large annual variation in the number seen due to weather and other variables, they may reflect long-term population trends (Bednarz and Kerlinger 1989). Additionally, because birds from many different breeding areas concentrate together during migration, trends in migration counts reflect overall population trends from a broad geographic area. Furthermore, migration counts may provide insight into population trends in breeding areas that have been inadequately surveyed. For example, band recoveries indicate that most of the migrant peregrine falcons seen on the east coast of North America nest in northeastern Canada and Greenland. Data on trends in breeding population size are scarce for these areas, so migration counts provide valuable supplemental information.

During migration, arctic peregrine falcons concentrate at several locations where standardized counting procedures have shown changes in numbers. Large numbers are seen at Cape May, New Jersey, and Assateague Island, Maryland. The following table gives the total numbers seen per year at Cape May and Assateague Island, and the number seen per 10 hours of observation at Assateague Island.

Year	Total number, Cape May[1]	Total number, Assateague Island[2]	Number per 10 hours, Assateague Island[2,3]
1970	.....	66	2.13
1971	.....	120	5.43
1972	.....	41	1.26
1973	.....	136	3.77
1974	.....	59	1.64
1975	.....	186	5.59
1976	105	176	5.23
1977	61	209	4.46
1978	149	259	5.94
1979	230	598	13.99
1980	198	512	11.36
1981	176	347	6.15

Year	Total number, Cape May [1]	Total number, Assateague Island [2]	Number per 10 hours, Assateague Island [2,3]
1982	363	591	9.35
1983	302	962	8.62
1984	517	547	7.55
1985	386	483	7.07
1986	637	838	11.90
1987	686	327	5.38
1988	339	409	6.09
1989	701	813	13.52
1990	845	659	12.94
1991	727	743	11.78
1992	429	340	6.08

[1] Data from Schultz *et al.* 1992; Paul Kerlinger, Cape May Bird Observatory, pers. comm., 1993.
[2] Data from Seegar and Yates 1991; Seegar *et al.* 1993.
[3] The number seen per unit effort is used to reduce the variation caused by annual differences in observer effort at Assateague Island; there is little annual variation in effort at Cape May so this statistic is not used for this area.

The trend in the number of arctic peregrine falcons seen at these sites may be somewhat complicated by a gradual increase in the number of American peregrine falcons in the surrounding areas. Banding recoveries, however, show that the majority of peregrine falcons seen during fall migration along the east coast come from arctic areas, particularly Greenland and eastern Canada (Yates *et al.* 1988; William S. Clark, Cape May Bird Observatory, pers. comm., 1992). These counts, therefore, reflect a genuine increase in the number of migrant arctic peregrine falcons.

Although fewer peregrine falcons are observed in the Great Lakes region, counts conducted since the mid-1930's at Cedar Grove, Wisconsin, show that the number of migrant peregrine falcons decreased in the 1950's and 1960's and reached the lowest number in the early to mid-1970's. The number counted increased rapidly in the 1980's, and may now equal the numbers seen in the 1930's (Mueller *et al.* 1988). As with peregrine falcons seen along the east coast, some migrants at Cedar Grove may be American peregrine falcons, but it is likely that the majority are arctic peregrine falcons (Mueller *et al.* 1988).

Summary of Current Status

Arctic peregrine falcons have recovered substantially since the use of organochlorine pesticides were restricted. Breeding surveys conducted in widely scattered areas have shown that productivity rates returned to normal after the restrictions were imposed. Subsequently, populations expanded and population size is currently stable or increasing in all areas studied. Only one local population was known to have been extirpated; this was a small population in Yukon, Canada, and contributed minimally to the total number of arctic peregrine falcons. The proximity of large and expanding populations indicates that this area will be recolonized naturally. Despite the continued use of organochlorines in Latin America, residues in arctic peregrine falcon eggs have decreased dramatically since the mid-1970's. DDE and other organochlorine residues are well below "critical values" associated with reproductive impairment, and recent samples from Alaska indicate that residues continue to decrease. Migration counts provide additional supporting evidence that arctic peregrine falcon numbers have increased substantially in recent years. These data are particularly valuable because band recoveries indicate that the majority of east coast migrants are arctic peregrine falcons that nest in Greenland and northeast Canada. These are areas where population growth has not been quantified as well as in other parts of the subspecies' range. The roughly 3-fold increase in the numbers seen at Cape May and Assateague Island since the mid-1970's closely parallels the 3-fold increase found in several nesting surveys in arctic breeding areas.

Review of Peregrine Falcon Recovery Plan

In accordance with the Act, the Service appointed teams of experts to write plans for the recovery of peregrine falcons. A recovery team was appointed for each of four regions in the United States, and each produced a regional recovery plan for peregrine falcons. In 1982, the Service, in conjunction with the Alaska Peregrine Falcon Recovery Team, published the Peregrine Falcon Recovery Plan, Alaska Population. Although the Recovery Plan included both arctic and American peregrine falcons that nest in Alaska, the American peregrine falcon is not discussed in this proposal. Neither the Alaska Recovery Plan nor any of the other three regional recovery plans addressed populations of arctic peregrine falcons that breed in Canada or Greenland.

The Alaska Recovery Plan was written in 1982 using the best information then available. The plan included a strategy for population monitoring, recovery objectives, and criteria for reclassification. The monitoring scheme proposed that breeding surveys should be conducted regularly in two areas in Alaska (Colville and Segavanirktok Rivers) for which historical population data were available. The plan listed four parameters to be measured in the study areas to assess recovery status of those populations, and established an objective for each of the parameters. The four parameters and objectives were:

(1) Number of nesting territories occupied by pairs with an objective of 36 total pairs within the 2 specified study areas;

(2) Average number of young per nesting attempt with an objective of 1.4 young per nesting attempt;

(3) Average organochlorine concentration in eggs with an objective of less than 5 ppm DDE; and

(4) Average degree of eggshell thinning with an objective of shells averaging not more than 10 percent thinner than pre-DDT era eggs.

The Recovery Plan based reclassification criteria upon these objectives. It was suggested that these objectives should be met for 5 years before downlisting to threatened status, and the parameters should remain constant or improve during the ensuing 5 years before delisting.

Recovery plans and objectives are intended to guide and measure recovery, but are intended to be flexible enough to adjust to new information. Research conducted since the plan was written in 1982 has shown that some of the recovery objectives were based upon

incorrect assumptions. A discussion of the basis of each objective, the current status of arctic peregrines as measured against the objectives, and a review of recent information pertaining to the objectives follows:

(1) The objective of 36 pairs occupying territories in the two study areas was based on historical data and assumed that there were 51 available territories and 70 percent of these would be occupied in a fully recovered population (70% × 51 = 36). The plan suggested that 36 or more pairs should occupy territories for 10 or more years before delisting. Thirty-six pairs occupied the areas for the first time in 1984, and the number has increased each year since then. Seventy-five pairs were present in the study areas in 1992, so it is nearly certain that 1993 will be the tenth consecutive year in which this objective is met. The number of pairs now occupying breeding territories greatly exceeds the original estimate of the number of available territories.

(2) The objective of 1.4 young per pair was based upon early studies of arctic peregrine falcons. Productivity exceeded this level by 1982, and has varied between 1.4 and 2.0 young per pair each year since (11 years in 1992). During this interval there has been considerable annual variation in productivity due to the influence of local weather conditions within the study areas.

(3) The objective of DDE residues in eggs averaging less than 5 ppm was based upon the assumption that arctic peregrine falcons would not reproduce normally as long as residues exceeded this measure (this assumption was based upon the observation that peregrine falcons in the Aleutian Islands reproduced normally in the early 1970's when residues in eggs averaged 5 ppm). Average DDE residues declined below 5 ppm in arctic peregrine falcons in Alaska between 1984 and 1988, but it is unclear exactly when this threshold was crossed. However, it is now apparent that this objective was inappropriate; normal reproduction was occurring for several years before the average concentration declined to 5 ppm and may have occurred while residues exceeded 10 ppm. The exact relationship between DDE residues in eggs and reproductive success remains largely unknown. Therefore, the Service believes that it is most appropriate to gauge "acceptable" contaminant exposure by reproductive success. Since reproductive success has been sufficient to allow population growth since the late 1970's and the objective for the production of young (1.4 young per pair) has been met or exceeded for 11 years, the Service considers the desired objective for exposure to organochlorines to have been met.

(4) The criterion requiring eggshells to average less than 10 percent thinner than pre-DDT era shells was based upon the observation that Peale's peregrine falcons in the Aleutian Islands reproduced well with shells 8 percent thinner than normal in the early 1970's. This assumed that peregrine falcons could not reproduce normally if shells were more than 10 percent thinner than normal. Subsequent field work has shown this to be false. Although the degree of thinning has gradually decreased over time, shells collected in arctic Alaska still average 12.5 percent thinner than pre-DDT era shells. Reproduction, however, has been sufficient to fuel population growth since the late 1970's, and productivity has met or exceeded its stated objective for 11 years. The Service considers, therefore, that the basic goal that eggshell thinning not significantly affect reproduction, population growth, or recovery for at least 10 years, has been met.

In summary, the Peregrine Falcon Recovery Plan, Alaska Population, identified four parameters to be measured in two study areas in arctic Alaska to monitor population health and recovery. Objectives were established for measuring recovery and indicating when downlisting and delisting were appropriate. The plan suggested that the four objectives were to be met or exceeded for 5 years prior to downlisting to threatened status and an additional 5 years prior to delisting. One of the four objectives has been met for the 10-year interval suggested as a prerequisite for delisting and another will be met in 1993. However, knowledge gained subsequent to the writing of the recovery plan indicates that the two objectives that have not been met were based upon incorrect assumptions. The Service concludes, based upon current information, that the basic goals underlying all four objectives have been reached: the number of pairs occupying territories in two study areas will far surpass the objective for the tenth consecutive year during 1993; productivity surpassed the objective for the eleventh year in 1992; DDE residues in eggs have not prevented population growth and recovery since the late 1970's; and eggshell thinning has not inhibited population growth and recovery since the late 1970's.

Summary of Comments and Recommendations

In the Notice of Status Review (56 FR 26969), the Service requested that all interested parties provide information and comments on status and a possible proposal to delist northern peregrine falcons. The request included both northern-nesting populations of American peregrine falcons and arctic peregrine falcons, although only arctic peregrine falcons are included in this proposal. The appropriate foreign, state and provincial governments, Federal agencies, scientific organizations, and other interested parties were contacted and encouraged to comment. To date, 42 responses have been received by the Service, including 14 from foreign governments, 2 from United States government agencies, 8 from provincial or state governments, and 18 from individuals or groups. Fifteen of the responses included a position on delisting, thirteen of which supported delisting. Delisting supporters included an oil and gas association, 3 falconer organizations, and 9 private individuals. Two foreign governments opposed delisting. No position on delisting was given by the governments of Canada or Greenland, which are the only nations other than the United States in which arctic peregrine falcons nest. Several concerns were raised, both by those opposing delisting and by those who stated no position. Those concerns and the Service's response to each are presented below.

Comment 1: Although regular counts have not taken place, there has not been a significant increase in the number of wintering peregrine falcons seen in some areas in Latin America.

Service response: Band recoveries indicate that arctic peregrine falcons winter exclusively in Central and South America. Because the number of arctic peregrine falcons has increased substantially in recent years (demonstrated by breeding area surveys and migration counts), the total number wintering in Latin America has also likely increased. Unfortunately, regular, standardized counts have not been conducted in Latin America so it is unknown if numbers have increased in all local wintering areas.

Comment 2: Although the pesticide threat to peregrine falcons in North America has been reduced, the threat to these birds on their wintering grounds remains real.

Service response: The Service is concerned that arctic peregrine falcons and their migratory prey are exposed to pesticides during migration and the winter. Decreasing residues in eggs

indicate that exposure to pesticides is declining, however, and current concentrations are insufficient to cause effects at the population level. The Act requires that the Service implement a system in cooperation with the States to monitor species for at least 5 years after delisting. As part of this effort, the Service proposes to monitor pesticide residues in arctic peregrine falcons eggs so an increase in exposure can be documented (see discussion of the five factors affecting arctic peregrine falcons and the proposed monitoring strategy).

Comment 3: The effects of changes in wintering habitat remain unquantified.

Service response: Little is known of the effects of habitat change on arctic peregrine falcons, however, a consistent increase in the number of arctic peregrine falcons has taken place in recent years. During this same time period, rapid, unprecedented human-caused changes in wintering areas have taken place. Numbers of peregrine falcons nesting in Alaska now equal or exceed pre-pesticide era estimates, indicating that recent wintering habitat alteration has not significantly affected numbers. The Service will continue to monitor for changes in numbers of arctic peregrine falcons for at least 5 years after delisting, so any major effect upon numbers will be documented and appropriate action can be taken.

Comment 4: The recovery of arctic peregrine falcons has not progressed sufficiently for them to have colonized Iceland.

Service response: Arctic peregrine falcons have never been known to occur on Iceland (Clayton White, Brigham Young University, pers. comm., 1992), so failure to occupy the island is not an appropriate measure of population recovery.

Comment 5: The reproductive rate of arctic peregrine falcons is low.

Service response: The reproductive rate of arctic peregrine falcons is between 1.5 and 2.5 young produced per territorial pair in all areas studied. Reproductive rates since the late 1970's have been sufficient to allow a gradual and consistent increase in the number of breeding pairs.

Comment 6: The threatened status of arctic peregrine falcons must not be downgraded because the feeding grounds are difficult to locate.

Service response: The Service must base its decision to list or delist species upon the factors discussed in the "Summary of Factors Affecting the Species" section of this proposal. A species is protected if one or more of the five factors affects its continued existence. Although some aspects of arctic peregrine falcon ecology remain poorly understood, this does not appear to pose a threat to their survival. Arctic peregrine falcons continue to increase in numbers despite our incomplete understanding of their habitat requirements.

Summary of Factors Affecting the Species

According to the Act and implementing regulations outlined in 50 CFR part 424, a species shall be listed if the Secretary of the Interior determines that one or more of five factors listed in section 4(a)(1) of the Act threatens the continued existence of the species. A species may be delisted, according to § 424.11(d), if the best scientific and commercial data available substantiate that the species is neither Endangered or Threatened for one of the following reasons:

1. Extinction;
2. Recovery; or
3. Original data for classification of the species were in error.

After a thorough review of all available information, the Service has determined that arctic peregrine falcons are no longer endangered or threatened with extinction. A substantial recovery has taken place since the 1970's, and none of the five factors addressed in section 4(a)(1) of the Act currently jeopardizes the continued existence of arctic peregrine falcons. These factors and their relevance to arctic peregrine falcons (*Falco peregrinus tundrius*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Arctic peregrine falcons nest in arctic areas of Alaska, Canada, and Greenland. They migrate through the mid-latitudes of North America across a broad front, but concentrate in some coastal and estuarine areas along the Atlantic coast and Gulf of Mexico. Migrants also pass through inland areas including the Great Lakes, Great Plains, and Rocky Mountains, although the relative importance of coastal and inland habitats to migrants is unknown. Arctic peregrine falcons spend the winter in Latin America, but the distribution and habitat requirements of wintering peregrine falcons remain largely unstudied.

Although little is known of the impacts of habitat modification on arctic peregrine falcon populations, events during the last 15 years show that habitat modification does not currently threaten the continued existence of the subspecies. Although the rate of habitat alteration in nesting, migration, and wintering habitats is greater now than in the past, arctic peregrine falcon numbers have nearly tripled since the lows of the mid-1970's.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Falconry is the sport of training and using captive falcons and hawks for hunting. There are currently several thousand licensed falconers in the United States. Many falconers prefer the peregrine falcon for the sport for a number of reasons, including its beauty, adaptability to captivity, and its natural hunting techniques and abilities. Up to the early 1970's, arctic and American peregrine falcons were harvested for falconry, both as nestlings and during migration, but harvest from the wild was prohibited when both subspecies were classified as endangered. In recent years, captive breeding of peregrine falcons has supplied a large number of birds for use in falconry.

As wild populations have recovered from the pesticide-caused declines, pressure from falconers has mounted to resume harvest of wild peregrine falcons. Although harvest will temporarily be prevented in most of the United States by Similarity of Appearance provisions in the Act (see section below on Effects of this Rule), the Service anticipates that eventually harvest of arctic peregrine falcons will likely resume. Existing Federal legislation allows for harvest but requires that harvest is limited to levels that prevent overutilization (see Effects of This Rule section below).

Other than for falconry, no appreciable demand for peregrine falcons for commercial or recreational purposes exists. There may be, however, some demand for arctic peregrine falcons for scientific and educational purposes. As with falconry, any take will be regulated through the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*).

The Service anticipates that captive propagation of peregrine falcons will continue. This production will presumably satisfy a portion of the demand for peregrine falcons for falconry, scientific, and educational purposes.

C. Disease or Predation

Like other birds, peregrine falcons are vulnerable to disease and predation. Little is known of the diseases affecting peregrine falcons in the wild, but several species of mammals and birds are known to prey upon peregrine falcons and their eggs and young. None, however, have been documented to affect peregrine falcons at the population level. The recent increase in

the number of arctic peregrine falcons indicates that current rates of mortality are more than offset by natural reproduction.

D. The Inadequacy of Existing Regulatory Mechanisms

If this proposal is made final, arctic peregrine falcons will no longer be directly protected by the Endangered Species Act (although the Similarity of Appearance provision will protect arctic peregrine falcons in the conterminous 48 States as long as other subspecies occurring in this area remain listed). Arctic peregrine falcons would still be protected by the Migratory Bird Treaty Act (MBTA), which governs the taking, killing, possessing, transportation, and importation of migratory birds, their eggs, parts, and nests. Provisions within the MBTA allow for the taking and use of migratory birds, but require that such use not adversely affect populations. The MBTA and its implementing regulations (50 CFR Parts 20 and 21) will, therefore, adequately protect against overutilization of arctic peregrine falcons in the event that this proposal is adopted (see discussion of the MBTA in Effects of Rule section below). There are no existing Federal or local laws that protect the habitat of this species; however, loss of habitat does not appear to have contributed to the decline of arctic peregrine falcons.

In addition to Federal laws governing the taking of arctic peregrine falcons within the United States, international agreements govern the transport of arctic peregrine falcons across international borders. The Convention on International Trade in Endangered Species (CITES) is an international agreement that restricts trade in rare and endangered species. The arctic peregrine falcon is currently listed under Appendix I of CITES, and, as a result, international trade in arctic peregrine falcons is restricted by the United States and 102 other signatory nations. This proposal, if made final, would affect only United States domestic law and would not result in removal of arctic peregrine falcons from Appendix I.

E. Other Natural or Manmade Factors Affecting its Continued Existence

Several explanations have been offered for the decline in the number of peregrine falcons seen in the 1950's through the early 1970's in North America. Egg collecting, shooting, harvest for falconry, habitat destruction, climate change, and the extinction of passenger pigeons were all proposed as possible factors causing or contributing to the decline of the peregrine falcon; however, no evidence supports any of these factors as causing the widespread reproductive failure and population decline that occurred. In contrast, an overwhelming body of evidence has been accumulated showing that organochlorine pesticide poisoning affected survival and reproductive performance sufficiently to cause the decline. Similar evidence was found in other areas, such as Europe, and there currently is no question within the scientific community that contamination from organochlorines was the principle factor responsible for the decline.

Although the use of organochlorine pesticides has been restricted in the United States and Canada since the early 1970's, use continues in much of Latin America. It has been shown, by comparing blood samples collected during fall and spring migration, that migrant peregrine falcons accumulate pesticides while wintering in Latin America (Henny *et al.* 1982). Additionally, some of the avian prey utilized by arctic peregrine falcons during the summer in arctic and subarctic areas also winter in Latin America. Many of these prey return to their northern nesting areas with pesticide residues accumulated during the winter (Fyfe *et al.* 1990). Peregrine falcons preying upon these birds during the summer are thus further exposed to Latin American pesticides. Pesticide use in Latin America, however, may never have been great enough to cause a decline in the number of arctic peregrine falcons. The widespread reproductive failure and population crash coincided with the period of heavy organochlorine use in the United States, and a noticeable increase in productivity occurred in Alaska within a few years following restrictions on the use of organochlorines in the United States. Since the restrictions were imposed, productivity has remained high and numbers have remained stable or increased in all areas studied, despite the continued use of organochlorines in Latin America. The only measurable effect presumably attributable to organochlorine use in Latin America has been found in Rankin Inlet in the NWT. Between 1982 and 1986, pesticides caused about 10 percent of the nesting pairs to fail, but average productivity within the population was high, and numbers were stable at the extremely high density of one pair per 17 square kilometers (Court *et al.* 1988). Despite the effect upon a small portion of the pairs, the overall impact to the subspecies in this area was minimal. There has been no other recent evidence of pesticide-caused reproductive failures found in any other arctic peregrine falcon population studied.

Although little is known of local pesticide use patterns in Latin America, residue levels in peregrine falcons that winter in Latin America are declining. Average DDE residues in blood collected from peregrine falcons during spring migration in Texas decreased 38 percent between 1978–1979 and 1984 (Henny *et al.* 1988). This same trend apparently continued thereafter, as average residues in Alaskan eggs decreased about 65 percent (from 9.3 ppm to 3.3 ppm) between 1984 and 1991 (unpublished Service data on file, Fairbanks, Alaska).

In summary, the reproductive failure and resultant population crash seen in arctic peregrine falcons were likely the result of the heavy use of organochlorines in the United States and possibly Canada. Arctic peregrine falcons continue to be exposed to organochlorines due to the continuing use of organochlorine pesticides in Latin America, and due to their high sensitivity, arctic peregrine falcons remain vulnerable. A widespread increase in the use of organochlorines in Latin America could potentially impact populations; however, current levels of exposure of arctic peregrine falcons to organochlorines are insufficient to affect the subspecies at the population level. The increase in productivity since restrictions were placed upon organochlorines in the United States resulted in a major population recovery, and breeding survey and migration data indicate that the number of arctic peregrine falcons has increased several fold since the lowest levels in the early 1970's. Additionally, residues in blood and eggs show that exposure of arctic peregrine falcons to organochlorines continues to decrease.

Effects of This Rule

Take, as defined in section 3(18) of the Act, of the arctic peregrine falcon is currently prohibited. If this proposal is made final, direct protection by the Act will no longer be provided to the subspecies. Indirectly, however, the Similarity of Appearance provision of the Act would still protect arctic peregrine falcons in those parts of their range that overlap with the range of endangered or threatened American peregrine falcons. This protection would not extend beyond such time that the American peregrine falcon is delisted, nor would it apply in areas in which American peregrine falcons do not occur, such as within the breeding range of arctic peregrine falcons. Regardless of protection proffered by the

Act, however, the take of migratory birds, including peregrine falcons, is governed by the Migratory Bird Treaty Act (MBTA).

The MBTA regulates the taking of migratory birds for educational, scientific, and recreational purposes, such as falconry. Section 704 of the MBTA states that the Secretary of Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed, and to adopt suitable regulations permitting and governing the take. In adopting regulations, the Secretary is to consider such factors as distribution and abundance to insure that take is compatible with the protection of the species. Existing regulations applying to the use of raptors for falconry and the captive propagation of raptors are outlined in 50 CFR 21.28 to 21.30.

Pursuant to the Similarity of Appearance provisions of section 4(e) of the Endangered Species Act, species (or subspecies or distinct vertebrate population segments) that are not considered to be endangered or threatened may nevertheless be treated as such for law enforcement purposes of protecting a listed species (or subspecies or vertebrate population segment) that is biologically endangered or threatened. Under the Similarity of Appearance provision (implemented by § 17.50), the Service must find: (a) That the species so closely resembles in appearance an endangered or threatened species that enforcement personnel would have substantial difficulty in identifying listed from unlisted species; (b) that the effect of the substantial difficulty is an additional threat to the listed endangered or threatened species; and (c) that such treatment of an unlisted species will substantially facilitate the enforcement and further the purposes of the Act.

The Service considers "all free-flying *Falco peregrinus*, not otherwise identifiable as a listed subspecies, to be endangered under the Similarity of Appearance provision in the 48 conterminous States" (49 FR 10520, March 20, 1984). Therefore, arctic peregrine falcons will be protected as endangered or threatened while migrating through the 48 conterminous States as long as American peregrine falcons that occur in these same areas are classified as endangered or threatened. American peregrine falcons are known to occur or could occur in all areas in which arctic peregrine falcons are found in the 48 conterminous States, so protection would be complete in that region. The protection of this provision would not extend beyond such time that the American peregrine falcon is delisted. The Service anticipates that recovery will eventually allow the American peregrine falcon to be removed from the list of endangered and threatened wildlife. At such time, the MBTA will govern the take of arctic peregrine falcons, as will the appropriate State regulations. State regulations applying to falconry currently vary among States and are subject to change with time. The applicable State regulations, however, may be more but not less restrictive than Federal regulations.

The Similarity of Appearance provision does not apply to arctic peregrine falcons while they are outside the range of listed subspecies of *Falco peregrinus*. Although American peregrine falcons occur in northern areas, such as Alaska, there is no overlap in the breeding ranges of the two subspecies in Alaska (arctic peregrine falcons breed north of the Brooks Range and along the west coast near Norton Sound whereas American peregrine falcons breed south of the Brooks Range). If this proposal is enacted, therefore, the taking of arctic peregrine falcons within their breeding range would not be prohibited by Similarity of Appearance protection and would, therefore, be governed by the MBTA.

In addition to Federal regulations, Alaska State regulations would apply to harvest of arctic peregrine falcons in Alaska. Alaska State regulations outlined in 5 AAC 92.037 do not currently allow for the use of arctic peregrine falcons for falconry, but it is likely that considerable pressure from falconry groups will mount to amend regulations to allow harvest if delisting occurs. Additionally, Alaska State regulation 92.037(b)(3) requires that "no person may permanently export a raptor taken from the wild in Alaska unless the person has legally possessed that raptor for at least one year." The Service anticipates little or no pressure within Alaska to amend this latter regulation; therefore, the take of arctic peregrine falcons in Alaska would be limited to the roughly 25 falconers who are permanent residents of Alaska.

Falconry regulations in Canada and Greenland do not allow foreign falconers to take raptors, so this proposal, if enacted, would not result in United States residents taking arctic peregrine falcons within these countries. In addition, as mentioned above, international trade in arctic peregrine falcons is prohibited as a result of the subspecies' inclusion on the CITES Appendix I list.

Future Conservation Measures

Section 4(g)(1) of the Act requires that the Secretary (Service) monitor species for at least 5 years after delisting. If evidence acquired during this monitoring period shows that endangered or threatened status should be reinstated to prevent a significant risk to the species, the Service may use the emergency listing authority provided for by the Act. At the end of the 5-year monitoring period, the Service will, based upon monitoring efforts, decide if relisting, continued monitoring, or an end to monitoring activities is appropriate. The Service proposes the following plan for monitoring arctic peregrine falcons in the event that arctic peregrine falcons are delisted.

Proposed Monitoring Plan

As discussed above, exposure to organochlorine pesticides, particularly DDT, was the ultimate factor causing the decline of arctic peregrine falcons. Organochlorines primarily affected populations by reducing reproductive success, although survivability of adults may have declined as well. As productivity and recruitment declined to levels insufficient to replace mortality, populations dwindled. This monitoring plan, therefore, is designed to detect changes in the status of arctic peregrine falcons by monitoring breeding population size, reproductive success, exposure to organochlorines and other environmental contaminants, and other factors that may affect arctic peregrine falcons at the population level in the near future. The Service proposes to accomplish this by: Monitoring breeding population size and reproductive success within one representative breeding area with a large number of breeding pairs (Colville River, Alaska); monitoring large-scale trends in population size by counting migrants at one migration concentration area (Cape May, New Jersey); and monitoring contaminant exposure by sampling addled eggs removed from nests and blood extracted from migrants.

(1) Breeding survey on Colville River, Alaska: The Service proposes to intensively monitor one breeding population of arctic peregrine falcons to detect changes in breeding population size and reproductive success. Although small differences have been found among regions, general trends in population size, reproductive success, and contaminant exposure have historically been similar in all portions of the breeding range of arctic peregrine falcons. Therefore, the Service believes

that large-scale trends will be detected in any adequately-sized breeding population. The Colville River is the most suitable area to monitor because: The area is within the United States so the Service can influence funding and insure that standardized methods are used; long-term studies in this area have provided baseline information suitable for population trend detection; and because a large number of pairs (50–60) nest in this area, the study area likely includes birds that winter in a number of areas with varying degrees and types of environmental contamination. The number of pairs occupying nesting territories will be counted in the early stages of the breeding season (incubation). Just prior to fledging, the number of young will be counted to determine productivity (number of young produced per territorial pair). Surveys will be conducted from the ground.

(2) Migration counts at Cape May, New Jersey: Counts of the number of migrant peregrine falcons seen at Cape May, New Jersey, will be used to detect gross trends in population size. Although migrant peregrine falcons are counted at numerous places in North America, counts from Cape May will be used because: Large numbers of peregrine falcons are seen at Cape May during fall migration, providing a sufficient sample size for trend analysis; peregrine falcons seen migrating along the east coast are primarily arctic peregrine falcons (Yates *et al.* 1988; W.S. Clark, pers. comm., 1992); and standardized counting methods have been used at Cape May since 1976, providing relatively long-term baseline information for population trend detection. The migrant raptor count at Cape May is largely funded by the Office of Migratory Bird Management, U.S. Fish and Wildlife Service, and the Service anticipates that this ongoing effort to monitor long-term changes in raptor populations will continue.

(3) Contaminant exposure: The Service will analyze arctic peregrine falcon eggs and blood in Service-contracted laboratories to monitor exposure to organochlorine pesticides and other environmental contaminants. Addled eggs will be collected along the Colville River, Alaska, and in other areas, as feasible, within the breeding distribution of arctic peregrine falcons. Blood will be collected from migrants during spring 1994 at Padre Island, Texas, as part of an ongoing study to track changes in the exposure of arctic peregrine falcons to organochlorines during the winter. Organochlorine concentrations in 1994 will be compared to those in blood collected in 1978–1979, and 1984 (Henny *et al.* 1982; Henny *et al.* 1988).

Eggs and blood will be analyzed, using gas chromatography/mass spectroscopy, for organochlorines, other pesticides (including mirex), and PCBs and HCBs. These analyses will be modified, if appropriate, to include other contaminants that are identified as posing a risk to arctic peregrine falcons.

Region 7 (Alaska) of the Service is responsible for coordinating the listing, recovery, and monitoring efforts of arctic peregrine falcons. Therefore, Region 7 will organize and oversee the implementation of this monitoring effort. To this end, Region 7 staff will: (1) Encourage, through interagency cooperative agreements, the continued participation of the U.S. Bureau of Land Management and the Alaska Department of Fish and Game in arctic peregrine falcon monitoring surveys in Alaska; (2) formalize and maintain survey and study protocols to insure standardized methodology is used; (3) collect and submit tissue samples for laboratory analysis; (4) require and collect annual reports from all parties involved in this monitoring effort, to be submitted by 31 October each year; and (5) compile the results of monitoring studies and re-evaluate the status of arctic peregrine falcons annually. In addition to overseeing this monitoring effort, the Service will: (6) exchange information with parties involved in arctic peregrine falcon studies that are not part of this monitoring plan; and (7) at the end of the 5-year monitoring period, review all available information to determine if relisting, termination of monitoring, or continued monitoring is appropriate.

The Service will consider relisting if during, or after, the 5-year monitoring effort, it appears that a reversal of the recent recovery has taken place. If one or more of the following conditions exists, the Service will deem it an indication that a reversal of recovery has taken place and relisting will be considered:

(1) The number of pairs occupying territories along the Colville River falls below 42 pairs (this would be a 25 percent reduction from the 1992 breeding population of 57 pairs);

(2) Average productivity of peregrine falcons nesting along the Colville River drops below 1.4 young per territorial pair for 2 consecutive surveys (unless other identified factors, such as abnormal weather conditions, explain the lowered productivity);

(3) The number of migrant peregrine falcons counted at Cape May, New Jersey, falls below 450 seen each year for 3 consecutive years (this would be a 25 percent decrease from the average number seen during the last 5 years);

(4) Average contaminant residues in arctic peregrine falcon eggs or blood exceed those values associated with widespread reproductive failure or mortality; or

(5) Studies conducted outside of the United States show that a dramatic and widespread reversal of recovery is taking place.

If one or more of these criteria indicate that arctic peregrine falcon populations are declining, the Service will review all available information to determine if arctic peregrine falcons are threatened or endangered with extinction in accordance with listing guidelines outlined in the Act.

The Service will determine that monitoring arctic peregrine falcons is no longer warranted if studies show that recovery is complete and that no known factor that threatens arctic peregrine falcons has been identified. If studies show that arctic peregrine falcon populations are declining or if one or more factors that appear to have the potential to cause decline are identified, the Service will continue monitoring beyond the 5-year minimum period. If harvest is identified as a potential factor affecting arctic peregrine falcons at the population level, the Service may conclude that surveys and monitoring are necessary to determine appropriate harvest levels and monitor the effects of take. If continuation is warranted, the Service will evaluate the 5-year monitoring plan to determine if a new monitoring plan is necessary to assess the identified threat or threats.

Public Comments Requested

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, the Service requests information and comments concerning the status of arctic peregrine falcons and this proposal. Information and comments are requested from all affected foreign and United States government agencies, the scientific community, industry, private interests, and all other interested parties concerning any aspect of this proposed rule. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to arctic peregrine falcons;

(2) Additional information on the range, distribution, and numbers of arctic peregrine falcons;

(3) Information on the current or planned use of organochlorines or other environmental contaminants within the

range of arctic peregrine falcons, including wintering areas;

(4) Suggestions on the monitoring plan outlined above;

(5) Information concerning the potential impacts of falconry harvest upon arctic peregrine falcons; and

(6) Possible alternatives to this proposed rule.

Final adoption of the regulations for arctic peregrine falcons will take into consideration the information and comments received by the Service, and these communications may result in a final rule that differs from this proposal.

The Endangered Species Act allows for public hearings on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal in the **Federal Register**. Such requests must be made in writing, and should be addressed to Ted Swem; see **ADDRESSES** above.

National Environmental Policy Act

The Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited herein is available upon request from Ted Swem (see **ADDRESSES** above).

Author

The primary author of this proposal is Ted Swem (see **ADDRESSES** above).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulations Promulgation

Accordingly, the Service hereby proposes to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

§ 17.11 [Amended]

2. § 17.11(h) is amended by removing the entry for the "Falcon, Arctic peregrine, *Falco peregrinus tundrius*" under "Birds".

Dated: September 15, 1993.

Richard N. Smith,

Acting Director, Fish and Wildlife Service.

[FR Doc. 93–23889 Filed 9–29–93; 8:45 am]

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