Issue. One state requested that falconers be required to report details of the acquisition and disposition of captured peregrines.

"Given this, the Department supports Alternatives 2, 3, and 5 as proposed by the United States Fish and Wildlife Service (USFWS). This support is contingent on two items. First, is the timely reporting by the USFWS of captured banded birds to the state wildlife management agency of the state where the bird was produced. Second, is the reporting of the date and location of release of these birds to the same agency."

Response. Falconers who capture peregrines will be required to submit a detailed report on paper or electronically on form 3-186A to the Service and to the pertinent state fish and wildlife agency. The 3-186A form will provide information on each peregrine captured or disposed of via release, transfer, or death.

Issue. One flyway council requested that the Service clarify the impact of the proposed migrant harvest on the existing harvest of nestling peregrines in the western United States.

"The Federal Register (FR) mentions reducing western states peregrine falcon (PEFA) nestling harvest. It is understood that this stipulation may be necessary to ensure that no more than 5 percent of any cohort is harvested in a given year per the 2004 FR Notice on the Take of Nestling PEFA. However, if the current harvest levels across the west are below the 5 percent mandate, the western states would like the final Environmental Assessment (EA) to clarify that states can maintain or even increase their current levels of nestling harvest as long as the projected 1 percent harvest of migrants is accounted for."

Response. Under many of the alternatives, some migrants from the Western management population are likely to be captured by falconers. We take this harvest into account by reducing the resident harvest commensurately, as shown in Table 3. The flyway council is correct that the existing nestling harvest in the Western management population does not approach the harvest limits, so we do not anticipate this reduction to be problematic. However, under the new Alternative 7 the added flexibility will probably increase harvest rate for the Western management population, but not to overall levels that exceed a 5% harvest rate.

Issue. Some commenters felt that strict regulation of the peregrine harvest was unnecessary because there are few falconers and even fewer who will want to trap migrant peregrines.

"As a general matter, falconers are a very small group and are not likely to take peregrine falcons from the wild in large enough numbers to materially impact any of the management populations. Of the approximately four thousand falconers in the United States with FWS-issued permits, many have no intention to take peregrine falcons from the wild regardless of what rules the FWS promulgates. As a result, the

true level of take by falconers in the United States is likely to be much lower than even the low number of practicing falconers in the United States would indicate."

"There are grounds for predicting that the harvest quotas will be undersubscribed. Most falconers do not fly peregrines. Colorado, for example, has for several years offered permits for nestling peregrines, but no one has yet taken one. Considerations in the EA, therefore, may be matters of principle rather than practicality."
Response. We recognize that demand for migrant peregrines may be low. If that is the case, then the upper limits placed on the harvest should not be a burden.

Issue. Some commenters requested that the Service delegate the authority to increase harvest thresholds in the future to the flyway councils.

"The Flyway Councils should continue to monitor both the population status and production of regional populations at intervals of three to five years, as well as the actual number of falcons taken within the permitted harvest limit. The Flyway Councils should be given the authority to make adjustments in harvest commensurate with population status and demand for take, to allow any take considered equitable and safe up to the 5% limit of annual estimated production. A take of 100 migrants seems a reasonable harvest for the start; it can then be adjusted upward, if demand for permits indicates a reason to do so."

Response. The Service believes a harvest of up to 5% of annual production of peregrines is biologically justified and sustainable based on analyses in Millsap and Allen (2006). The constraints limiting harvest to lower levels for some management populations are imposed at the request of some member states of the Atlantic and Mississippi flyway councils and CWS. To reduce the administrative steps necessary to increase harvest levels in the future, we have added Alternative 8 in the FEA, in which we analyzed adopting an across-the-board 5% harvest rate for all peregrine falcon management populations. This alternative could be implemented upon removal of the peregrine falcon from the Species At Risk list in Canada, and upon formal notification to the Service by both the Atlantic and Mississippi flyway councils that constraints to limit harvest of the Eastern management population are no longer necessary. If this occurs, the flyway councils may still have to coordinate harvest among states to ensure harvest is distributed appropriately among participating states, and so that no management population is overharvested.

Issue. One flyway council requested clarification on state import and export restrictions that might apply to harvested migrant peregrines, and other commenters offered specific suggestions for allocation of harvest.

"Allowing the harvest of migrants in a small portion of the U.S. may lead to larger issues of importation and exportation between the states. It is not indicated in the EA if the states within the preferred alternative area allow for exportation of raptors to other

states. We believe a table is needed depicting each state's regulations on importation and exportation of raptors, to include whether or not falconers in other states will be allowed to export birds from this area."

"Limit the take of passage birds to 10 birds for Florida and 10 birds for Texas."

Response. We neither restrict the import or export of raptors harvested by falconers within the U.S., nor falconers' ability to transfer raptors from one permittee to another. We see no reason to treat fall migrant peregrines differently than any other raptor in this regard, so we do not propose any species-specific restrictions. The Service does not monitor state falconry regulations relative to import and export and non-resident harvest, so we cannot provide the requested summary table of this information.

The flyway councils will determine the allocation of harvest among states within the broad harvest frameworks established in the FEA. While the Service will not interfere with the flyway council's discretion in this regard, we do encourage flyway councils to work together (perhaps through the National Flyway Council and in conjunction with the falconry community) to ensure states with the greatest harvest opportunity receive an appropriate share of the harvest allocation.

AUTHORITY AND RESPONSIBILITY

Regulations allowing the take of migratory birds are authorized by the Migratory Bird Treaty Act (MBTA) (16 U.S.C. Sections 703-712), which implements the four bilateral migratory bird treaties the U.S. entered into with Canada, Mexico, Japan, and Russia. The MBTA authorizes the Secretary of the Interior to allow people to hunt, take, possess, sell, purchase, and transport migratory birds if those actions are compatible with the provisions of the treaties (16 U.S.C. Section 704).

AFFECTED ENVIRONMENT

BIOGEOGRAPHY AND DISTRIBUTION

Three subspecies of peregrine falcon are recognized in North America: *F. p. pealei*, the maritime, or Peale's peregrine; *F. p. tundrius*, and *F. p. anatum* (White *et al.* 2002). Although *F. p. tundrius* is considered taxonomically distinct from *F. p. anatum* at the subspecies level, recent genetic work suggests little differentiation between these forms (Brown *et al.* 2007). In the interior of Alaska and northern Canada these subspecies may intergrade such that they overlap considerably in plumage and morphology, and both are strongly migratory, in contrast to *F. p. pealei* and *F. p. anatum* in temperate North America (White and Boyce 1988, Taubert *et al.* 1999). Because of genetic and phenotypic similarity and similar migratory behaviors,

it is difficult to separate high-latitude *F. p. anatum* from *F. p. tundrius* outside their respective breeding areas.

Peregrines from more temperate areas south of 54° N latitude migrate less markedly and many overwinter within their breeding range (Taubert *et al.* 1999). Peregrines in the eastern part of this range are perceived to have recovered more slowly than those in the west (Millsap *et al.* 1998), and for management it is desirable to distinguish between these two groups. For the purposes of this plan, we identified three management populations of peregrine falcons in North America and Greenland: (1) Northern, consisting of *F. p. anatum* and *F. p. tundrius* subspecies originating at natal sites at or north of 54° N latitude; (2) Western, consisting of all American peregrine falcons originating from natal sites at or west of 100° W longitude and south of 54° N latitude and all Peale's peregrines (*F. p. pealei*); and (3) Eastern, consisting of all peregrines (*F. p. anatum* and individuals of all other subspecies released there for management purposes) originating from natal sites east of 100° W longitude and south of 54° N latitude. The relationship between taxonomic and management populations is shown in Figure 1.

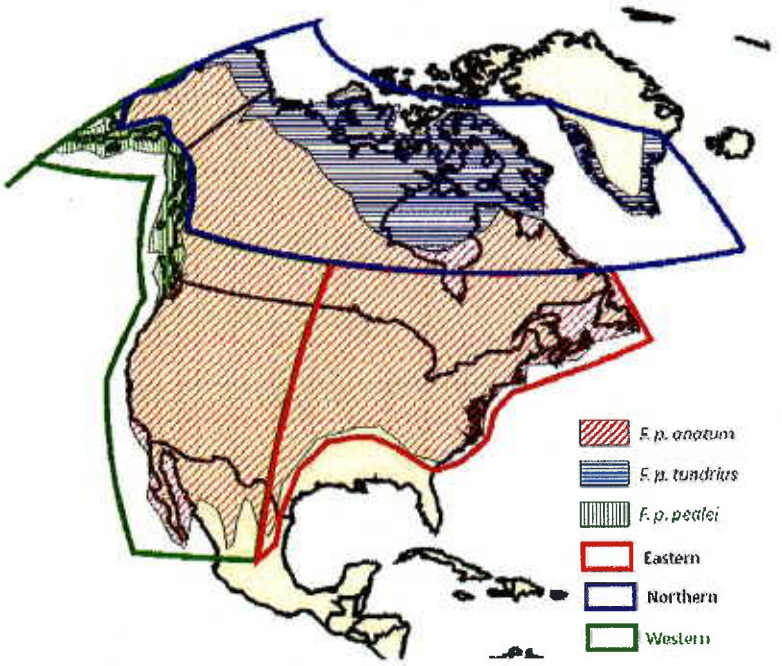

Figure 1. Relationship between taxonomic and management populations for North American peregrine falcons. Taxonomic subspecies boundaries follow White and Boyce (1988). In reality, the boundaries are uncertain and likely intergrade into one another. The red hatched area denotes the range of *F. p. anatum*, the green hatched area denotes the range of *F. p. pealei*, and the blue hatched area denotes that of *F. p. tundrius*. The heavy red line denotes the boundary of the Eastern management population, the heavy green line denotes the Western management population, and the heavy blue line borders the Northern management population.

POPULATION SIZE

Peregrine falcons are monitored regionally by a variety of surveys, but for most management populations the certainty of our knowledge of population size and productivity has decreased as populations have recovered, and monitoring has decreased. The ranges of recent available estimates of numbers of breeding pairs of peregrine falcons in each management population are provided in Table 1, along with source citations. Based on these data, we believe the Northern population consists of 2,701 to 8,075 pairs, the Eastern population consists of about 453 pairs, and the Western population consists of 1,389 to 1,840 pairs.

The number of young fledged per adult territorial pair, or productivity, is a common measure of reproductive success in raptors (Steenhof 1987). Ranges of regional estimates of productivity for North American peregrine falcons are given in Table 2. Based on data presented in Tables 1 and 2, we estimate that between 6,862 and 16,960 young peregrine falcons are produced annually in North America (Table 2). Estimates of numbers of young fledged may be positively biased because deaths of nestlings do occur after productivity counts are conducted, and pairs that fail to lay eggs are hard to detect and therefore lead to underestimates of the number of pairs that are actually present (Steenhof 1987). We know of no studies that provide widely applicable correction factors for these biases. To account for this bias here, we converted the best available annual survival rate estimate for nestling North American peregrines (54%, from Craig *et al.* 2004) to a daily survival rate estimate (99.83%), and then estimated what mortality for a 30-day period (a reasonable maximum of the period not accounted for in the annual survival rate estimate) would be (5%). We doubled that number to account for pairs that may have been missed due to early nest failures (to 10%). Therefore, for assessment purposes, we use a conservative, adjusted range for annual peregrine falcon production that is 10% lower than the range estimated in Table 2. After applying this 10% correction factor, we consider the range for annual production of peregrines in North America and Greenland for management purposes to be between 6,176 and 15,262 young fledged annually.

MIGRATION BIOLOGY

Taubert *et al.* (1999) identified migration timing and distance as important factors in harvest management for migrant peregrine falcons. We used band recovery records to estimate the fall and winter distribution of juvenile (less than one year old) peregrine falcons of known natal origin (those banded as nestlings) from these three populations. Banding and recovery locations of peregrine falcons used in this analysis are shown in Figure 2.

Banding data were not ideal for this analysis because the distribution of banding effort was not uniform or stratified in a purposeful way, and reencounters appeared biased toward fall raptor banding stations and areas of human habitation. Despite these biases, we believe banding records are useful, and offer the best available means for evaluating the possible environmental effects of this proposal. We used all available band recovery and reencounter data in the U.S. Geological Survey files; this

Table 1. Maximum and minimum population size estimates, based on most recent counts or projections, for North American peregrine falcon populations.

Minimum number of pairs	Maximum number of pairs	Population	Place	Source
1,000	1,000	Northern	Interior AK	Green *et al.* 2006
158	225	Northern	Arctic AK	Enderson *et al.* 1995
1,143		Northern	Canada	G. Holroyd, Canadian Wildlife Service, personal communication in Taubert *et al.* 1999
	4,350	Northern	Canada	Enderson *et al.*1995
400		Northern	Greenland	Enderson *et al.* 1995
	2,500	Northern	Greenland	W. G. Mattox, Conservation Research Foundation, personal communication in Taubert *et al.* 1999 as modified by comments in administrative record letter in response to DEA
2,701	8,075	Northern	Total	
336	336	Eastern	Eastern U.S.	Green *et al.* 2006
22	22	Eastern	Labrador and Newfoundland	Rowell *et al.* 2003
11	11	Eastern	Bay of Fundy, Nova Scotia, New Brunswick	Rowell *et al.* 2003
28	28	Eastern	S Quebec	Rowell *et al.* 2003
53	53	Eastern	S. Ontario	Rowell *et al.* 2003
3	3	Eastern	S. Manitoba	Rowell *et al.* 2003
453	453	Eastern	Total	
4	4	Western	S. Saskatchewan	Rowell *et al.* 2003
23	23	Western	S. Alberta	Rowell *et al.* 2003
1	1	Western	Interior British Columbia	Rowell *et al.* 2003
17	17	Western	Lower British Columbia, Victoria Island	Rowell *et al.* 2003
9	9	Western	Langara Island	Rowell *et al.* 2003
60	60	Western	Queen Charlotte	Rowell *et al.* 2003
20	20	Western	N. Vancouver and Scott Island	Rowell *et al.* 2003
7	7	Western	Triangle	Rowell *et al.* 2003
149	600	Western	AK coastal	Enderson *et al.* 1995
472	472	Western	Pacific	Green *et al.* 2006
367	367	Western	Rocky Mountain/Great Plains	Green *et al.* 2006
260	260	Western	Southwestern	Green *et al.* 2006
1,389	1,840	Western Total		
4,543	10,368	Overall Total		

Table 2. Productivity for regional population for North American peregrine falcons.

Number young per nesting pair	Minimum number of pairs[a]	Maximum number of pairs	Minimum number of young fledged per year	Maximum number of young fledged per year	Population	Place	Source for productivity Information
1.18	1,000	1,000	1,180	1,180	Northern	Interior AK[a]	Green *et al.* 2006
1.14	158	225	180	257	Northern	Arctic AK	T. Swem, USFWS files and personal communication
1.60	1,143	4,350	1,829	6,960	Northern	Canada	Rowell *et al.* 2003
2.00	400	2,500	800	5,000	Northern	Greenland	Falk and Moller 1987, Mattox and Seegar 1988
1.48	**2,701**	**8,075**	**3,989**	**13,397**	**Northern Total[b]**		
1.66	336	336	558	558	Eastern	Eastern U.S.[c]	Green *et al.* 2006
1.60	22	22	35	35	Eastern	Labrador and Newfoundland	Rowell *et al.* 2003
1.80	11	11	20	20	Eastern	Bay of Fundy, Nova Scotia, New Brunswick	Rowell *et al.* 2003
1.60	28	28	45	45	Eastern	S Quebec	Rowell *et al.* 2003
1.60	53	53	85	85	Eastern	S. Ontario	Rowell *et al.* 2003
2.00	3	3	6	6	Eastern	S. Manitoba	Rowell *et al.* 2003
1.65	**453**	**453**	**748**	**748**		**Eastern Total**	
1.70	4	4	7	7	Western	S. Saskatchewan	Rowell *et al.* 2003
1.53	23	23	35	35	Western	S. Alberta	Rowell *et al.* 2003
1.53	1	1	2	2	Western	Interior British Columbia[d]	Rowell *et al.* 2003
1.53	17	17	26	26	Western	Lower British Columbia, Victoria Island	Rowell *et al.* 2003
1.30	9	9	12	12	Western	Langara Island	Rowell *et al.* 2003
1.53	60	60	92	92	Western	Queen Charlotte	Rowell *et al.* 2003
1.53	20	20	31	31	Western	N. Vancouver and Scott Island	Rowell *et al.* 2003
1.53	7	7	11	11	Western	Triangle	Rowell *et al.* 2003
1.53	149	600	228	918	Western	AK coastal	Enderson *et al.* 1995
1.45	472	472	684	684	Western	Pacific	Green *et al.* 2006
1.49	367	367	547	547	Western	Rocky Mountain/Great Plains	Green *et al.* 2006
1.73	260	260	450	450	Western	Southwestern	Green *et al.* 2006
1.53	**1,112**	**1,112**	**1,700**	**1,700 Western (Known)[e]**			
1.53	**1,389**	**1,840**	**2,125**	**2,815 Western (Projected)[e]**			
1.51	**4,266**	**10,364**	**6,862**	**16,960 Overall**		**GRAND TOTAL**	

[a] 1.18, the more conservative estimate of productivity for the Interior Alaska regional population based on footnote 4 in Table 2, is used here.

[b] Number of Young per Nesting Pair in regional population and grand total summary rows is calculated as (∑ Minimum Number of Young Fledged per Year) / (∑ Minimum Number of Pairs). This approach was used because it provides the most conservative regional population estimate.

[c] Calculated from Table 1 in Green *et al.* 2006, combining data for the Midwestern/Northeastern and Southeastern regional populations (*i.e.*, 171+21 young fledged divided by 95+21 sites checked = 1.66 young fledged per site).

[d] Italicized values in the Number of Young per Nesting Pair column are regional population means, because specific regional population estimates of productivity were not available.

[e] Western (Known) only includes data from places with recent productivity estimates. Western (Projected) uses mean productivity from the Western (Known) places to estimate total production for the entire Western management population.

Figure 2. Banding and reencounter locations of peregrine falcons used in the analyses reported in this final environment assessment. Some banding and recovery locations include multiple individuals (total $n=623$).

initially incorporated all encounter records from 1937 through 2004, including recoveries for birds banded in Canada. In addition, W.G. Mattox (Conservation Research Foundation [CRF], personal communication) provided us with all band recovery data for peregrines banded in conjunction with several projects by CRF and The Peregrine Fund in Greenland. We pooled these datasets, and then filtered the composite to select records for peregrine falcons that had been banded as nestlings and that were encountered in their first year. We further screened this dataset to eliminate individuals with questionable encounter dates (such as month unknown or recovered as skeletons) or questionable reencounter locations (such as on ships at sea), and we filtered out all initially incorporated all encounter records from 1937 through 2004, including recoveries for birds banded in Canada. In addition, W.G. Mattox (Conservation Research Foundation [CRF], personal communication) provided us with all band recovery data for peregrines banded in conjunction with several

projects by CRF and The Peregrine Fund in Greenland. We pooled these datasets, and then filtered the composite to select records for peregrine falcons that had been banded as nestlings and that were encountered in their first year. We further screened this dataset to eliminate individuals with questionable encounter dates (such as month unknown, recovered as skeletons) or questionable reencounter locations (such as on ships at sea), and we filtered out all pre-migration and breeding season records (those records outside the months of September through March). Hereafter, we refer to this dataset as the peregrine band recovery dataset.

We inferred latitudinal and longitudinal patterns in the distribution of migrating and wintering peregrine falcons of each management population from cumulative frequency distributions of fall and winter band reencounters. We treated these frequency distributions as probability distributions, which presume frequencies of band reencounters are representative of the actual distribution of peregrines from each management population. Despite the aforementioned biases in banding data, we believe the results of these analyses are generally accurate at the coarse geographic scale of our analysis, and offer the best insights possible with available data into how migrating peregrine falcons from each management population are distributed during fall migration. We excluded records of peregrines recaptured at raptor banding stations from latitudinal distributional analyses because raptor banding stations were not evenly distributed, and including such recaptures heavily biased the probability distributions to a narrow range of latitudes within the continental U.S. where active trapping was ongoing. This bias was not as problematic for longitudinal analyses because most raptor banding stations that capture large numbers of peregrine falcons are along the Atlantic coast, and the primary bias (overestimating the proportion of the Western management occurring east of 100° W longitude) was conservative relative to our conservation objectives.

Migration distance increases with increasing natal latitude in North American peregrine falcons, as shown by regression analysis of distance between natal and winter reencounter latitude - longitude coordinates in the peregrine band recovery dataset (Figure 3). In this dataset, natal latitude accounts for 59% of the variation in migration distance in North American peregrines[1]. Mean post-September reencounter latitude differed among the three management populations as well (Figure 4); *post-hoc* analysis indicated mean post-September reencounter latitude for Northern and Western populations and Western and Eastern populations were not different from each other, but means for Northern and Eastern populations were different (1-way analysis of variance, $F_{2,367} = 7.426$, $P = 0.001$, Bonferroni *post-hoc* analysis, $P < 0.001$ for Northern vs. Eastern, $P = 0.162$ for Western vs. Eastern, and $P = 1.00$ for Western vs. Northern).

[1] This analysis probably underestimates the difference between management populations because some Northern peregrines might not have reached their final winter destinations in November, and others might have begun the return northward migration before the end of March.

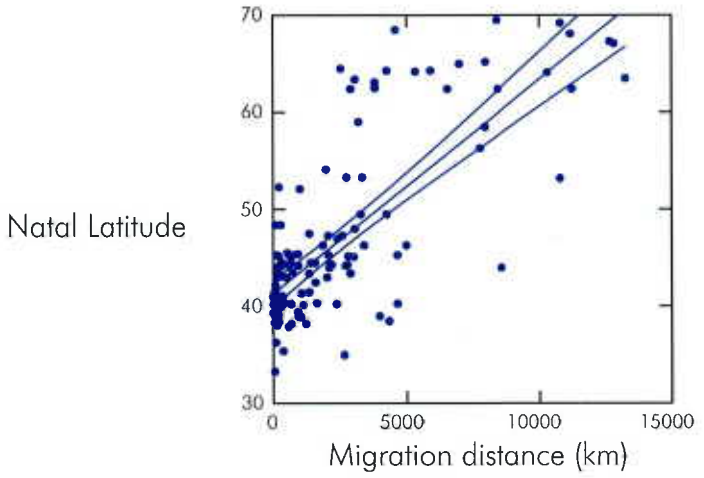

Figure 3. Linear regression analysis shows a strong positive linear relationship between natal site latitude and distance to wintering locale in North American peregrine falcons, based on 143 peregrine falcons that were banded in North America as nestlings and encountered during their first winter (1 November through 31 March). The regression line is bounded by the 90% confidence interval ($R^2 = 0.596$, slope = 0.002 [SE = 0.0001], $P < 0.001$).

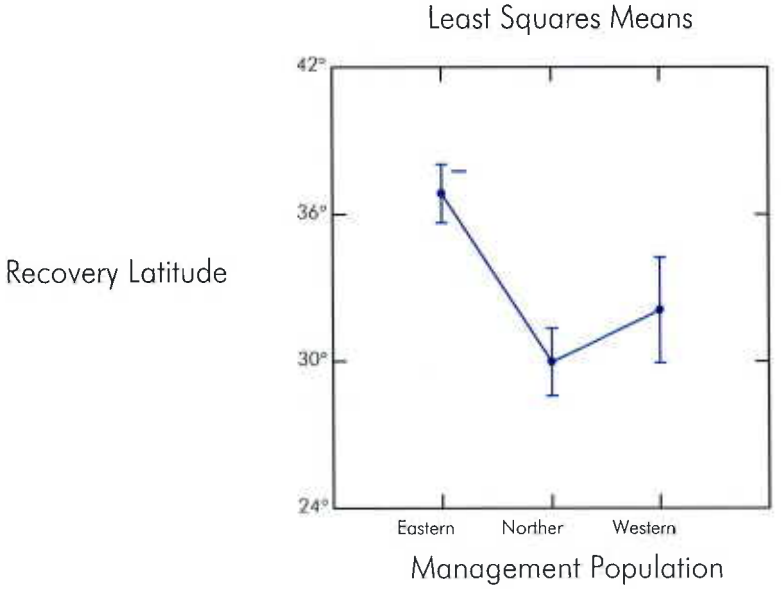

Figure 4. Mean (+1 SE) reencounter latitude of first-year North American and Greenland peregrine falcons initially banded as nestlings and reencountered during the period 1 September through 31 March, by management population. Peregrines captured at autumn raptor banding stations are omitted to avoid a bias toward trapping locales (Eastern $n = 181$, Northern $n = 134$, Western $n = 55$).

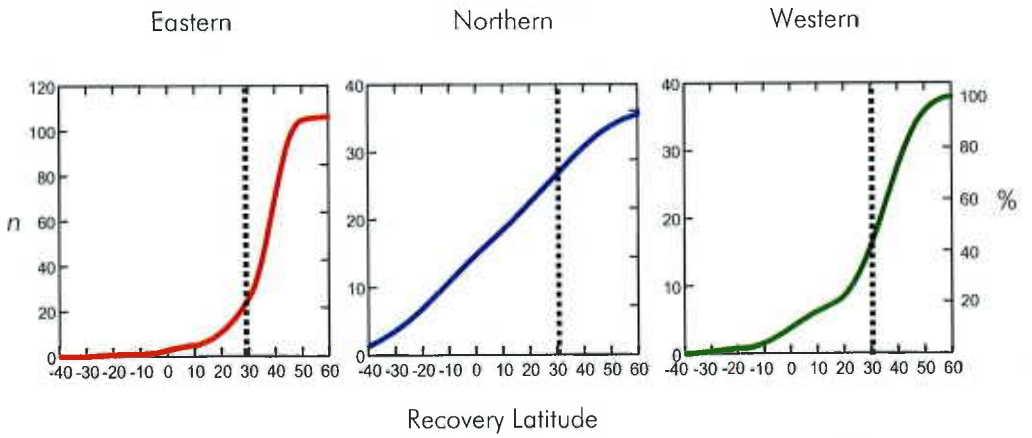

Figure 5. Cumulative kernel frequency distribution (tension[2] = 0.50) for band reencounters by latitude for first-year North American and Greenland peregrine falcons initially banded as nestlings and reencountered during their first winter (1 November through 31 March) by management population (Eastern n = 106, Northern n = 36, Western n = 38). The dashed lines represent the critical latitudes in the harvest alternatives.

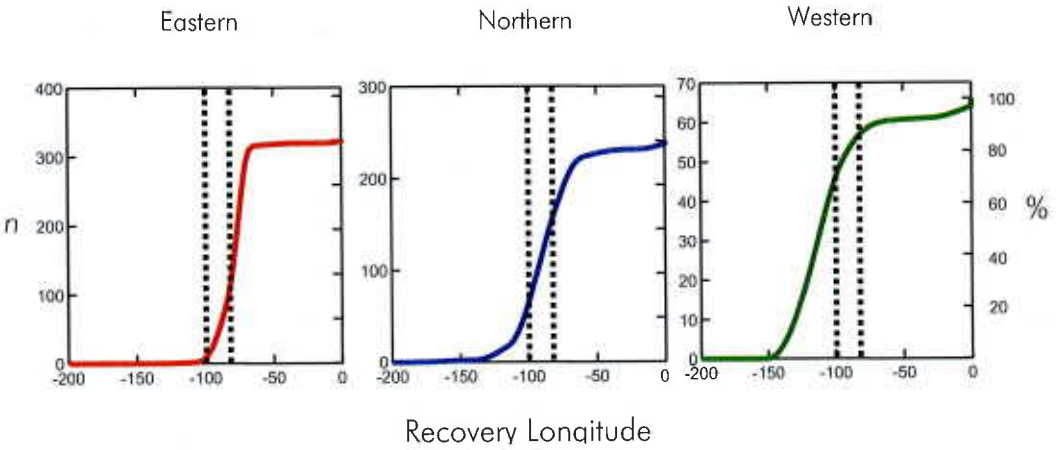

Figure 6. Cumulative kernel frequency distribution (tension = 0.50) for band reencounters by degrees W longitude for first-year North American and Greenland peregrine falcons initially banded as nestlings and encountered during their first fall or first winter (1 September through 31 March) by management population (Eastern n = 323, Northern n = 240, Western n = 66). This distribution was not substantially skewed by including peregrines captured at fall raptor banding stations, so those recaptures were retained in the analysis. The dashed lines represent the critical longitudes in the harvest alternatives.

Cumulative frequency distribution plots of winter reencounters by latitude suggest that about 72% of Northern and 40% of Western peregrines migrate to locations

[2] The degree to which a line adheres to the points in an x-y plot. A tension of 0.50 is a smoothed line through the data.

south of 31° N latitude, while about 80% of Eastern peregrines winter north of this latitude (Figure 5). Longitudinal plots of fall and winter reencounters indicate that very few Eastern peregrines occur west of 100° W longitude, about 65% of Western peregrines remain west of 100° W longitude, and about 88% of Northern peregrines range east of 100° W longitude (Figure 6).

Timing is an important consideration in a harvest of migrant peregrine falcons, because focusing harvest at the time of peak migration of Northern peregrines increases the likelihood of encounters with individuals from this management population (Taubert *et al.* 1999). To determine the timing of maximum passage of Northern peregrines in North America we used reencounter records from fall raptor banding stations, which generally operate throughout the period of migration for North American raptors (Hawk Migration Association of North America 2007). A cumulative frequency distribution of reencounters of Northern peregrines at banding stations (Figure 7) showed that about 92% of reencounters with Northern peregrines at banding stations occur from 20 September through 20 October. This finding is consistent with results of a recent peer-reviewed paper on the timing of peregrine falcon migration in North America (Worchester and Ydenberg 2008).

HARVEST BIOLOGY

Millsap and Allen (2006) concluded that the maximum sustained yield (MSY) for a harvest of passage peregrine falcons from a healthy, non-migratory population was about 17% of the first-year cohort. Millsap and Allen based their analysis on data from a long-term mark-recapture study of a Western *F. p. anatum* population in Colorado, USA (Craig *et al.* 2004). Vital rates might differ for more northern, highly migratory peregrine *F. p. tundrius*. Court *et al.* (1989) observed slightly higher rates of adult survival (81% for females, 85% for males) among *F. p. tundrius* at Rankin Inlet, Northwest Territories, Canada, compared to that reported from Colorado (Craig *et al.* 2004), but they did not estimate subadult survival and their estimate of first-year survival did not account for emigration. Based on this limited information, we concluded there is no evidence to suggest survival rates of Northern peregrines would differ substantially from that for *F. p. anatum* in Colorado. However, data in Table 2 suggest productivity may be lower, at least currently, for Northern peregrines. We re-ran Millsap and Allen's (2006) model for a hypothetical Northern peregrine falcon population with the following vital rates: number of suitable nesting sites = 1,000; average annual adult survival = 81% (from Court *et al.* 1989); average annual subadult survival = 67% (unchanged from Craig *et al.* 2004); average annual first-year survival = 54% (unchanged from Craig *et al.* 2004); and annual fecundity = 1.48 young fledged per occupied nest site (from Table 2). We did not adjust this productivity estimate downward because post- banding/pre-fledging mortality was accounted for in the juvenile survival rate estimates in Craig *et al.* (2004).

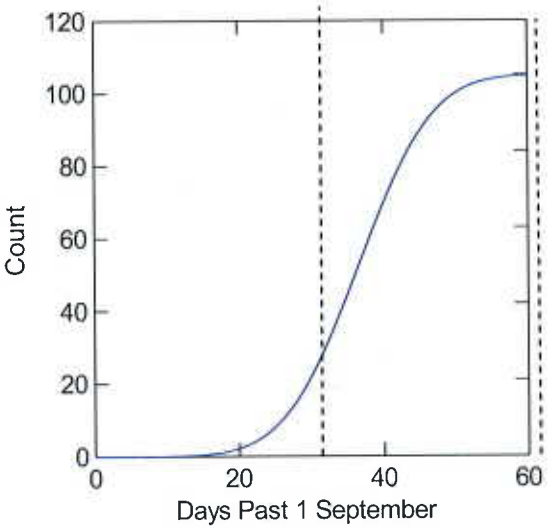

Figure 7. Cumulative frequency distribution (tension = 0.50) of reencounters of Northern peregrines at fall raptor banding stations in the United States (n = 106). The dashed lines represent critical dates in the harvest alternatives.

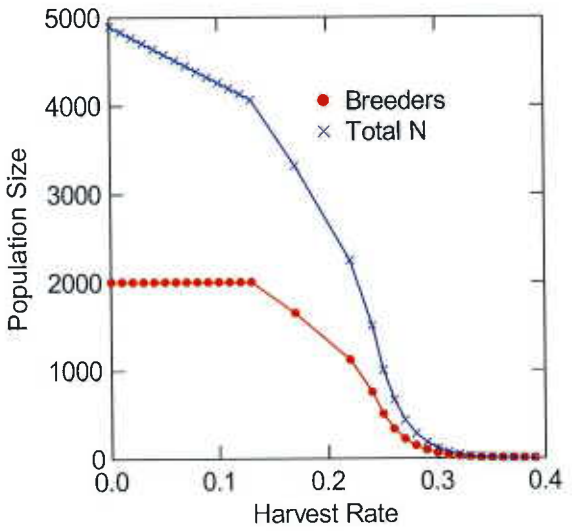

Figure 8. Estimated changes in population size at differing harvest rates (proportion of young produced in a year that are harvested) for a hypothetical Northern peregrine falcon population with the following characteristics: number of suitable nesting sites = 1,000; average annual adult survival = 81%; average annual subadult survival = 67%; average annual first-year survival = 54%; and annual fecundity = 1.48 young fledged per occupied nest site. Nest site occupancy is assumed to equal 100% as long as sufficient breeders exist in the population to occupy all sites. Harvest rate was modeled as an incremental increase in first-year mortality. Based on approach described in Millsap and Allen (2006).

The model suggested MSY under these vital rates occurred at a harvest rate of about 13% of fledged young (Figure 8). Millsap and Allen (2006) recommended that actual harvest rate not exceed 50% of calculated MSY or 5%, whichever is less, given uncertainties in the calculation of MSY, unaccounted-for stochasticity, and the inability to actually monitor the effects of harvest. This recommendation was adopted in the FEA on take of raptors from the wild for falconry by the Service (USFWS 2007a). Accordingly, a maximum harvest rate of 5.0% of annual production of Northern peregrines is also indicated, given the estimated vital rates reported here.

ALTERNATIVES

Considering our management objective and the population data presented in previous sections, our explicit management goal is to allow a harvest of up to 5% of minimum annual production of Northern peregrines, which is 179 migrants[3], while simultaneously (1) not increasing cumulative harvest of the U.S. portion of the Western or the Alaskan segment of the Northern population to a number greater than 81 for the Western segment and 49 for the Alaskan segment (based on data in Table 2 after taking the 10% post-fledging mortality bias adjustment, accounting for ongoing harvest in Canada and Mexico, consistent with the allocation framework presented in USFWS 2004); and (2) holding estimated take from non-target management populations to no more than two individuals from the Canadian portion of the Western population and seven individuals from the Eastern population (no more than 1% of annual production of non-target populations; from Table 2 after 10% bias reduction). The alternatives also assume a sex ratio no greater than 60:40 in either direction measured against the overall harvest limit, and a relatively evenly longitudinal distribution of harvest over the harvest area. Any captured peregrines wearing U.S. Geological Survey or CWS research bands shall be released under all alternatives.

ALTERNATIVE 1

No action. Take by falconers of autumn migrant peregrine falcons would remain prohibited in the coterminous U.S.

ALTERNATIVE 2

Allow take of first-year migrant peregrine falcons from 20 September through 20 October from areas of the U.S. south of 31° N latitude and east of 85° W longitude, and within the state of Alaska. Also, allow take of nestling and post-fledging first-year

[3] A total of 3,989 Northern fledglings per year x 0.9 (a 10% bias reduction in minimum number of young fledged) x 0.05 (from Millsap and Allen 2006) rounded down = 179.

peregrine falcons from the nesting period through 31 August west of 100° W longitude (including Alaska).

ALTERNATIVE 3

Allow take of first-year migrant peregrine falcons from 20 September through 20 October from areas of the U.S. south of 31° N latitude and east of 100° W longitude and within the state of Alaska. This was essentially the 1999 recommendation of the AFWA, except we have expanded the temporal harvest window to include more of the migration period for Northern peregrines. Also, allow take of nestling and post-fledging first-year peregrine falcons from the nesting period through 31 August west of 100° W longitude (including Alaska).

ALTERNATIVE 4

Allow take of first-year migrant peregrine falcons from 20 September through 20 October from areas of the U.S. west of 100° W longitude and from Alaska. Also, allow take of nestling and post-fledging first-year peregrine falcons from the nesting period through 31 August west of 100° W longitude (including Alaska).

ALTERNATIVE 5

Allow take of first-year migrant peregrine falcons from 20 September through 20 October from areas of the U.S. south of 31° N latitude and east of 100° W longitude, and from all areas of the U.S. west of 100° W longitude. Also, allow take of nestling and post-fledging first-year peregrine falcons from the nesting period through 31 August west of 100° W longitude (including Alaska).

ALTERNATIVE 6

Allow take of first-year migrant peregrine falcons from 20 September through 20 October from anywhere in the U.S. Also, allow take of nestling and post-fledging first-year peregrine falcons from the nesting period through 31 August west of 100° W longitude (including Alaska).

ALTERNATIVE 7 (Preferred Alternative)

Allow a take of first-year migrant peregrine falcons from 20 September through 20 October from all areas of the U.S. east of 100° W longitude. Also, allow take of nestling and post-fledging first-year peregrine falcons from the nesting period through 31 August west of 100° W longitude (including Alaska).

ALTERNATIVE 8

Allow harvest of up to 5% of first-year peregrine falcons from all management populations through any combination of resident and migrant harvest.

ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

We used estimates of minimum numbers of young fledged per year for each management population (from Table 2, but adjusted to account for the estimated 10% post-fledging mortality) to calculate the maximum upper harvest limit for each management population, taking into account the constraints on harvest described earlier for each (Table 3). We partitioned the expected harvest between the Canadian and U.S. portions of the Western management population, and between the Alaskan and Canadian plus Greenland portions of the Northern management population. These political subdivisions were necessary to account for cumulative impacts on the Northern and Western management populations from the nestling peregrine harvest previously authorized in the U. S. (USFWS 2003), and to assess possible impacts to the Canadian portion of the Western management population, which is a concern of the CWS (G. Holroyd, CWS, personal communication; and based on comments on the DEA).

Table 3. Estimated minimum number of fall-migrant first-year peregrine falcons available for falconry harvest by management population and subunit under the alternatives considered in this Final Environmental Assessment.

Alternative	Management population	Estimated migrant population size[a]	Maximum allowable harvest rate[b]	Upper harvest limit[c]	Number available considering existing harvest[d]
1 through 7	Northern - Canada & Greenland[e]	2366	5%	118	107
	Northern - AK	1224	5%	61	49
	Eastern	674	1%	6	6
	Western - Canada	193	1%	1	1
	Western - US	1718	5%	85	81
	Total	6175		271	244
8	Northern - Canada & Greenland[e]	2366	5%	118	107
	Northern - AK	1224	5%	61	49
	Eastern	674	5%	33	33
	Western - Canada	193	5%	9	9
	Western - US	1718	5%	85	81
	Total	6175		306	279

[a] Population size estimates are 90% of the minimum number of young fledged per year from Table 2 to compensate for possible biases in productivity estimates (see text).

[b] Harvest rate is the percentage of young in a given year that are removed by falconers. Rationales behind variation in allowable harvest rates are described in the Alternatives section of the text.

[c] Maximum number allowed in harvest = Estimated migrant population size * Maximum allowable harvest rate. Values are rounded down to the nearest whole number so harvest does not exceed the maximum allowable harvest rate.

[d] Upper harvest limit - expected harvest in Canada and Mexico, from Table 4.

[e] Combines Canadian and Greenland portions of Northern management population.

Harvest of fall-migrant peregrines has been occurring for several years in the Province of Saskatchewan, Canada and even longer in eastern Mexico, and CWS requested that we account for this harvest if take is allowed in the U.S. Available data suggest no more than two migrant peregrines are taken by falconers in Canada annually, and about 25 have been taken historically each year by falconers in Mexico (G. Holroyd, CWS, personal communication; Ariel Rojo, Secretaría de Medio Ambiente y Recursos Naturales [SEMERNAT], personal communication). We used estimates of the proportional latitudinal and longitudinal distribution of migrants from each management population in Figures 5 and 6 to infer the likely makeup of the harvest of migrant peregrines in Saskatchewan and Mexico (Table 4), and we deducted these numbers from the proposed U.S. harvest limits for each management population or subunit (Table 3). We recognize that banding and population data are not optimal for these analyses, for reasons discussed previously. Nevertheless, they are the best information available to guide management decisions, and we believe they provide a sufficiently accurate picture of likely harvest makeup for management purposes.

We next calculated the number of peregrine falcons that could be harvested without exceeding the harvest limit for each management population or subunit by dividing the maximum number allowed in the harvest by the expected proportion of migrant harvest for each management population or subunit (Table 5). The expected proportions were derived as described above from the cumulative frequency distributions in Figures 5 and 6. We used this approach as a proxy for undertaking an actual physical count of the birds taken from each management population, which is not possible given the impossibility of determining the natal origin of migrants in the hand. The management population or subunit with the lowest number of peregrines that could be harvested was considered the limiting population, and the maximum harvest that could be allowed without overharvesting that management population or subunit was set as the overall harvest limit for the alternative. As an example, for Alternative 2, given the maximum allowable harvest and expected percent of migrant harvest by management population, the number of peregrine falcons that could be harvested without exceeding the harvest limits for the Northern - Canada and Greenland management population was 211 (118.30/0.5582), the harvest limit for the Northern - Alaska management population was 211 (61.21/0.2888), the limit for the Eastern management population was 82 (6.74/0.0814), the limit for the Western Canadian management population was 267 (1.93/0.0072), and the limit for the U. S. management population was 1,335 (85.91/0.0643) (rounding accounts for differences between reported harvest limits here and in Table 5). Under this alternative, the overall migrant harvest limit would be 82, the maximum number that could be taken without exceeding any of the limits for regional management populations or subunits (in this case, the limit for the Eastern management population is the limiting population), and 101 additional peregrines would be available for harvest within the Western management population area. Finally, we compared the expected migrant harvest with the number available considering existing harvest in

Table 4. Estimated make up of existing harvest of migrant peregrine falcons in Canada (Saskatchewan) and Mexico. Proportions of management populations exposed geographically and temporally are from Figures 5 and 6, and population size estimates are from Table 2.

Area	Management population	Estimated migrant population size[a]	Proportion exposed latitudinally to migrant harvest	Proportion Exposed Longitudinally to migrant harvest	Expected number exposed to migrant harvest	Expected % of migrant harvest	Expected migrant harvest with constraints
Mexico	Northern - Canada & Greenland[b]	2,366	0.40	0.49	463.72	38.83%	9.71
	Northern - AK	1,224	0.40	1.00	489.64	41.00%	10.25
	Eastern	674	0.15	0.00	0.00	0.00%	0.00
	Western - Canada	193	0.90	0.14	24.31	2.04%	0.51
	Western - US	1,718	0.90	0.14	216.48	18.13%	4.53
	Total	6,491			1194.15		25.00
Canada	Northern - Canada & Greenland[b]	2,366	1.00	0.30	709.78	36.63%	0.73
	Northern - AK	1,224	1.00	1.00	1224.11	63.17%	1.26
	Eastern	674	0.00	0.00	0.00	0.00%	0.00
	Western - Canada	193	0.10	0.20	3.86	0.20%	0.00
	Western - US	1,718	0.10	0.00	0.00	0.00%	0.00
	Total	6,491			1937.74		2.00
Pooled	Northern - Canada & Greenland[b]	2,366	1.00	0.30	709.78	36.63%	10.44
	Northern - AK	1,224	1.00	1.00	1224.11	63.17%	11.51
	Eastern	674	0.00	0.00	0.00	0.00%	0.00
	Western - Canada	193	0.10	0.20	3.86	0.20%	0.51
	Western - US	1,718	0.10	0.00	0.00	0.00%	4.53
	Total	6,491			1937.74		27.00

[a] Population size estimates are 90% of the minimum number of young fledged per year from Table 2 to compensate for possible biases in productivity estimates (see text).

[b] Combines Canadian and Greenland portions of Northern management population.

Table 5. Estimated make up of harvest by peregrine falcon management population under the harvest alternatives considered in this DEA. Proportions of management populations exposed geographically are from Figures 5 and 6, and population size estimates are from Table 2, as modified in Tables 3 and 4. The management population that limits overall harvest under each alternative is in red.

Alternative	Management population	Proportion exposed latitudinally to migrant harvest	Proportion exposed longitudinally to migrant harvest	Expected number exposed to migrant harvest	Expected % of migrant harvest	Expected migrant harvest[a]	Number available considering existing harvest[b]	Number remaining for nestling/ post fledging harvest
1	Northern - Canada & Greenland[c]	0.00	0.00	0.00	0.00%	0.00	107	
	Northern – AK	1.00	1.00	0.00	40.74%	0.00	49	49
	Eastern	0.00	0.00	0.00	0.00%	0.00	6	
	Western – Canada	0.00	0.00	0.00	0.00%	0.00	1	
	Western – US	1.00	1.00	0.00	59.26%	0.00	81	81
	Total			0.00		0.00	244	130
2	Northern - Canada & Greenland[c]	0.72	0.49	834.70	55.82%	46.22	107	
	Northern – AK	0.72	0.49	431.87	28.88%	23.91	49	25
	Eastern	0.21	0.86	121.64	8.14%	6.74	6	
	Western – Canada	0.40	0.14	10.80	0.72%	0.60	1	
	Western – US	0.40	0.14	96.21	6.43%	5.33	81	76
	Total			1495.22		82.79 (**82**)	244	101
3	Northern - Canada & Greenland[c]	0.72	0.88	1499.05	55.89%	72.10	107	
	Northern – AK	0.72	0.88	775.59	28.92%	37.31	49	12
	Eastern	0.21	0.99	140.03	5.22%	6.74	6	
	Western – Canada	0.40	0.35	27.01	1.01%	1.30	1	
	Western – US	0.40	0.35	240.53	8.97%	11.57	81	69
	Total			2682.21		129.01 (**129**)	244	81
4	Northern - Canada & Greenland[c]	0.94	0.12	266.88	12.19%	2.87	107	
	Northern – AK	0.94	0.12	138.08	6.31%	1.48	49	48
	Eastern	0.98	0.01	6.60	0.30%	0.07	6	
	Western – Canada	1.00	0.93	179.40	8.20%	1.93	1	
	Western – US	1.00	0.93	1597.83	73.00%	17.18	81	64
	Total			2188.79		23.54 (**23**)	244	112

Alternative	Management population	Proportion exposed latitudinally to migrant harvest	Proportion exposed longitudinally to migrant harvest	Expected number exposed to migrant harvest	Expected % of migrant harvest	Expected migrant harvest	Number available considering existing harvest[a]	Number remaining for nestling/ post fledging harvest
5	Northern - Canada & Greenland[c]	0.94	1.00	2223.96	40.98%	22.24	107	
	Northern – AK	0.94	1.00	1150.66	21.20%	11.51	49	38
	Eastern	0.21	1.00	141.44	2.61%	1.41	6	
	Western – Canada	1.00	1.00	192.91	3.55%	1.93	1	
	Western – US	1.00	1.00	1718.10	31.66%	17.18	81	64
	Total			5427.07		54.27 (**54**)	244	102
6	Northern - Canada & Greenland[c]	0.94	1.00	2223.96	37.40%	22.24	107	
	Northern – AK	0.94	1.00	1150.66	19.35%	11.81	49	37
	Eastern	0.98	1.00	660.05	11.10%	6.77	6	
	Western – Canada	1.00	1.00	192.91	3.24%	1.98	1	
	Western – US	1.00	1.00	1718.10	28.90%	17.63	81	63
	Total			5945.69		60.42 (**60**)	244	100
7	Northern - Canada & Greenland[c]	0.72	0.88	1499.05	41.94%	15.30	107	
	Northern – AK	0.72	0.88	775.59	21.70%	7.91	49	41
	Eastern	0.98	1.00	660.05	18.47%	6.74	6	
	Western – Canada	1.00	0.20	38.58	1.08%	0.39	1	
	Western – US	1.00	0.35	601.34	16.82%	6.14	81	75
	Total			3574.61		36.48 (**36**)	244	116
8	Northern - Canada & Greenland[c]	1.00	1.00	2365.92	38.32%	118.30	107	
	Northern – AK	1.00	1.00	1224.11	19.83%	61.21	49	
	Eastern	1.00	1.00	673.52	10.91%	33.68	33	
	Western – Canada	1.00	1.00	192.91	3.12%	9.65	9	
	Western – US	1.00	1.00	1718.10	27.83%	85.91	81	
	Total			6174.56		308.75 (**308**)	279	

[a] Bold values in parentheses are allowed take.
[b] From Table 4.
[c] Combines Canadian and Greenland portions of Northern management population.

Table 3 to ensure expected harvest did not exceed allowable harvest for any management population or subunit.

ALTERNATIVE 1

Alternative 1 is consistent with the explicit management objectives. However, it would deny falconers outside Alaska access to peregrine falcons that could be removed from the wild for falconry without negatively affecting wild populations.

ALTERNATIVE 2

The maximum fall (20 September through 20 October) migrant harvest from areas of the U.S. south of 31° N latitude and east of 85° W longitude, and within the State of Alaska that could be allowed under this alternative, given population-specific constraints outlined above, is 82. The predicted harvest under this alternative would be consistent with the explicit management objective for most management populations, except that harvest levels of nestling and post-fledging first-year resident peregrine falcons from the nesting period through August 31 in Alaska and the western U.S. could not exceed 25 and 76, respectively, without leading to potential cumulative overharvest of these population segments. The population limiting harvest under this alternative is the Eastern management population. Allocation of harvest among age-classes (resident vs. passage) and among states and provinces would need to be coordinated through the Flyway Councils.

ALTERNATIVE 3

The maximum fall migrant harvest from areas of the U.S. south of 31° N Latitude and east of 100° W longitude, and within the State of Alaska that could be allowed under this alternative, given population-specific constraints outlined above, is 129. The predicted harvest under this alternative would be consistent with the explicit management objective for most management populations, except that harvest levels of nestling and post-fledging first-year resident peregrine falcons from the nesting period through August 31 in Alaska and the western U.S. could not exceed 12 and 69, respectively, without leading to potential cumulative overharvest of these population segments. The population limiting harvest under this alternative is the Eastern management population. Allocation of harvest among age-classes and states and provinces would need to be coordinated through the Flyway Councils.

ALTERNATIVE 4

The maximum fall migrant harvest from areas of the U.S. west of 100° W longitude, and within the State of Alaska that could be allowed under this alternative, given the population-specific constraints outlined above, is 23. The predicted harvest under this alternative would be consistent with the explicit management objective for most management populations, except that harvest levels of nestling and post-fledging first-year resident peregrine falcons from the nesting period through August 31 in Alaska and the western U.S. could not exceed 48 and 64, respectively, without

leading to potential cumulative overharvest of these population segments. The population limiting harvest under this alternative is the Western -- Canada management population subunit. Allocation of harvest among age-classes and states and provinces would need to be coordinated through the Flyway Councils.

ALTERNATIVE 5

The maximum fall migrant harvest from areas of the U.S. south of 31° N latitude and east of 100° W longitude and from all areas of the U.S. west of 100° W longitude that could be allowed under this alternative, given population-specific constraints outlined above, is 54. The predicted harvest under this alternative would be consistent with the explicit management objective for most management populations, except that harvest levels of nestling and post-fledgling first-year resident peregrine falcons from the nesting period through August 31 in Alaska and the western U.S. could not exceed 38 and 64, respectively, without leading to potential cumulative overharvest of these population segments. The population limiting harvest under this alternative is the Canadian segment of the Western management population. Allocation of harvest among age-classes and states and provinces would need to be coordinated through the Flyway Councils. To accomplish the objective of geographic balance in the migrant harvest, the flyway councils would need to allocate 50% of the migrant harvest to areas of the U.S. west of 100° W longitude, and 50% east of that longitude. This would mean that fall harvest in the east would be 27 birds.

ALTERNATIVE 6

The maximum fall migrant harvest from anywhere in the U.S. that could be allowed under this alternative, given population-specific constraints outlined above, is 60. The predicted harvest under this alternative would be consistent with the explicit management objective for most management populations, except that harvest levels of nestling and post-fledging first-year resident peregrine falcons from the nesting period through August 31 in Alaska and the western U.S. could not exceed 37 and 63, respectively, without leading to potential cumulative overharvest of these population segments. Allocation of harvest among age-classes and states and provinces would need to be coordinated through the Flyway Councils. To accomplish the objective of geographic balance in the migrant harvest, the flyway councils would need to allocate 50% of the migrant harvest to areas of the U.S. west of 100° W longitude, and 50% east of that longitude. This would mean that fall harvest in the east would be 30 birds.

ALTERNATIVE 7 (Preferred Alternative)

The maximum fall migrant harvest from all areas of the U.S. east of 100° W longitude under this alternative, given population-specific constraints outlined above, is 36. The predicted harvest under this alternative would be consistent with the explicit management objective for most management populations, except that harvest levels

of resident nestling and post-fledging first-year peregrine falcons from the nesting period through August 31 in Alaska and the western U.S. could not exceed 41 and 75, respectively, without leading to potential cumulative overharvest of these population segments. Allocation of harvest among states and provinces would need to be coordinated through the Flyway Councils. Based on comments received on the DEA, this is the preferred alternative because it affords the widest geographic opportunity to harvest peregrines for falconry yet is consistent with our management goal.

We selected this alternative because comments on the Draft Environmental Assessment made it clear that a falconry take over the widest possible geographic range was preferred. Under this alternative, more birds are available in the eastern US than are available under alternative 5 or alternative 6.

ALTERNATIVE 8

The maximum cumulative harvest that could be allowed in the U.S. under this alternative is 308. This alternative, while consistent with the Service's analyses that show peregrine falcon populations should be able to withstand a harvest rate of 5%, does not include constraints to protect certain peregrine populations from harvest as requested by the flyway councils and CWS. As such, this alternative is not consistent with the Service's current management goal. Upon delisting of *F. p. anatum* in Canada, and upon a determination by the Atlantic and Mississippi flyway councils that harvest of peregrine from the Eastern management population is warranted, this alternative would be preferable to the current selected alternative because it allows greater harvest within sustainable limits for the species.

CUMULATIVE IMPACTS

Impacts of other forms of mortality and nesting failure (at contemporary levels) were accounted for in the demographic data used by Millsap and Allen (2006) and as modeled here. Impacts across management populations of each harvest alternative have been evaluated and reported above and in Table 5 using the best available biological data. We envision there may be some additional unintended mortality associated with capture of passage peregrines, but we suspect such mortality will be exceedingly low. Nevertheless, we will assess this issue each year as part of the adaptive management process for the proposed action (see below).

We believe our population estimates are buffered conservatively, and as such, compensate to some degree for unforeseen cumulative impacts. For example, under Alternative 2, we estimate that about 1,495 first-year fall-migrant peregrine falcons will be present in the harvest area during the harvest period. However, at a single location within the proposed harvest area (Curry Hammock State Park in the Florida Keys), an average of over 1,700 southbound migrant peregrines have been observed annually since 1999 (Lott 2006). Estimates suggest 39% (or 663) of these were likely

first-year birds, and, based on trapping records, about 67% were females (Lott 2006). While many of the peregrines that pass through the harvest area likely pass Curry Hammock State Park, it is unlikely that over 40% do, given the apparent bias in sex ratio, and it is even less likely they are all sighted. We believe this is empirical evidence of the conservative nature of the assessment of take in this document.

ADAPTIVE MANAGEMENT

Given the considerable uncertainty in the banding and population data used in this assessment, validation of the assumptions employed is warranted. We will require collection of two breast feathers from all peregrines harvested during the first three years after implementation of the proposed action. At the end of three years, if accepted techniques for stable isotope or DNA analysis are available to estimate the latitudinal derivation of the harvest, the feathers will be analyzed to determine if the actual harvest conforms to predictions. If analyses suggest levels of take of Eastern and/or Western Canadian peregrines are greater than anticipated, we will work with the flyway councils to implement corrective measures.

The general framework of the proposed alternative accomplishes the objective of geographically balancing the harvest. However, there will need to be extensive coordination within and among the Atlantic, Mississippi, and Central flyway councils on matters of harvest allocation between participating states in the U.S. We propose to work with the flyway councils to establish procedures for collection, housing, and assessment of feather samples, and to establish criteria for determining the sex of harvested peregrines. In addition, we propose to monitor the number, sex, and geographic distribution of peregrines that are harvested to ensure compliance with the frameworks in the proposed action. We will work through the flyway councils, or take regulatory actions, to resolve issues of non-compliance.

It is likely future population surveys will identify changes in population size and productivity values from those reported here. We will review population and harvest data for Canada, the U.S., and Mexico every five years, or at the request of the flyway councils, to reassess the allowable harvest limits. If, during one of these reviews, we determine that *F. p. anatum* is no longer formally considered threatened or endangered by CWS in Canada, and if the Atlantic and Mississippi flyway councils have determined that peregrines from the Eastern management population no longer warrant special protection, the Service will consider transitioning from managing peregrines under Alternative 7 to Alternative 8. Based on analyses and the evaluation conducted in this FEA, we believe Alternative 8 is a safe, sustainable long-term approach for managing falconry harvest of peregrine falcons. Alternative 8 also has the advantage of being consistent with how the Service manages take for falconry of other raptors.

NATIONAL ENVIRONMENTAL POLICY ACT COMPLIANCE

We reviewed the proposed action to determine whether it met any of the general criteria for preparation of an Environmental Impact Statement (EIS). We concluded that, under the guidance in the USFWS Manual (550 FW3), allowing the harvest of first-year, fall-migrant peregrine falcons under the preferred alternative and the long-term preferred alternative does not warrant preparation of an EIS. In particular, based on analyses of the effects of take using demographic data, we do not believe that a harvest of first-year, fall-migrant peregrine falcons should generate significant controversy, given the very minimal environmental effect. The proposed changes do not comprise a major federal action, so preparation of an EIS is not warranted.

TRANS-BOUNDARY EFFECTS OF THE ALTERNATIVES

Peregrine falcons are a highly migratory international resource. Stocks targeted for harvest in this FEA are produced at nest sites in the U.S., Canada, and Greenland, and spend the winter throughout the temperate U.S., Caribbean, Mexico, Central America, and South America. This FEA considers impacts on all of these source populations, and the preferred alternative is not likely to have measurable, negative effects on any of them. In addition, we have considered and accounted for the limited peregrine falcon harvest for falconry that does occur in Canada and Mexico (G. Holroyd, CWS, personal communication; Ariel Rojo, SEMERNAT, personal communication).

Most Canadian provinces are members of the flyway councils, and the CWS regularly participates in the flyway council meetings. SEMERNAT in Mexico has indicated an interest in expanding their participation in the flyway councils as well. Additionally, all three countries participate in the Trilateral Committee for Wildlife and Ecosystem Conservation (Trilateral), and issues of mutual concern regarding migratory birds are discussed there at the Migratory Bird Table. We believe the flyway councils and Trilateral afford ample opportunities for the countries of Canada, Mexico, and the U.S. to coordinate matters of concern regarding the harvest of migrant peregrines.

The Ministry of Environment and Nature in Greenland has expressed concern over take of first-year migrant peregrines for two reasons. First, the species is a fully protected species in Greenland, and therefore all exploitation is prohibited. Second, the Ministry does not support the capturing of wild animals with the purpose of keeping them in captivity (Bjarne Peterson, Greenland Ministry of Environment and Nature, personal communication). We will continue to communicate with the Ministry of Environment and provide more details about the effects of this action on the peregrine population in Greenland.

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