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The Endangered Species Act at 40: Species Profiles

AMERICAN PEREGRINE FALCON

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AMERICAN PEREGRINE FALCON

(*FALCO PEREGRINUS ANATUM*)

Range:

Historic: Much of North America, from central Mexico to the sub-arctic boreal regions of Canada and Alaska to the Eastern U.S.

When listed: Same as historic, but extirpated east of the Mississippi River, and absent over significant portions of its range.

When delisted: Same as historic, and introduced to some regions where it never previously existed in the U.S. (mid-Atlantic coast, and regions of the Midwest)

Listed status: Endangered [35 FR 16046] 10/13/70, and carried over to the ESA of 1973.

Current status: Recovered [65 FR 46542-46558] August 25, 1999.

Status prior to delisting: Reclassified [49 FR 10520-10526], March 20, 1984. This reclassification was done in an attempt to cover-up the FWS's likely violation of the ESA as well as the agency's bungling of the introduction of peregrines to the eastern seaboard, a subject that is covered in greater detail in the section titled, "Exotic Introduction."

Official reasons for listing: 1. DDT-caused eggshell thinning, which led to widespread reproductive failure and a massive population crash; 2. Habitat destruction and degradation.

Recovery criteria: There are a number of criteria, some of which have changed when a plan is revised, for a number of different regions.[1]

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[1] A. **Eastern Region** (AL, AR, CT, D.C., DE, GA, IA, IN, KY, MA, MD, ME, MI, MN, MO, NC, NH, NJ, NY, OH, PA, RI, SC, TN, VA, VT, and WV).

I. **1979 Recovery Plan**: "[T]o attain a successful, self-perpetuating nesting population in the wild at a level of 50 percent of numbers estimated (350 pairs) to have occurred in the 1940's or to a level our present environment will support" (U.S. Fish and Wildlife Service 1979, p.14).

II. **1987 Recovery Plan Update**:

Delisting: "Attainment of successful, sustained nesting in the wild to a minimum level of 175-200 pairs…and establishment of a minimum of 20-25 nesting pairs in each of the five release regions[Mid-Atlantic Coast, Northern New York and New England, Southern Appalachians, Great Lakes, and Southern New England/Central Appalachians] will result in delisting." (U.S. Fish and Wildlife Service 1987d, p.11).

Downlisting: 20-25 pars per recovery region.

II. **1991 Recovery Plan Update**: 1. "To reclassify the species from endangered to threatened by establishing a minimum of 20-25 nesting pairs in each of the five recovery regions [Mid-Atlantic Coast, Northern New York and New England, Southern Appalachians, Great Lakes, and Southern New England/Central Appalachians] to be sustained over a minimum of three years." 2. "To delist the species by meeting the above condition [for reclassification] and, in addition, attaining a minimum level of 175-200 pairs that demonstrate successful, sustained nesting in the wild. This level is approximately 50 percent of the numbers

Population:

Historic: Unknown, but assumed to be around that when delisted

When listed: Unknown, but extirpated east of the Mississippi and reduced by more than 75% in the west by the mid-1970s

When reclassified in 1984: Between 600 and 675 pairs.

When Delisted: A minimum of 1,331 pairs in the U.S.

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estimated to have been present in the 1940s" (U.S. Fish and Wildlife Service 1991, p.16).

B. **Rocky Mountain/Southwest Region** (AZ, CO, ID, KA, MT, NB, ND, SD, OK, TX, UT, and WY)

I. **1977 Recovery Plan**: A minimum of 100 "effective breeding pairs" (defined as "a male and female adult peregrine falcon that successfully produce and fledge offspring in the wild state") by 1995 (U.S. Fish and Wildlife Service 1977d, p.30).

II. **1984 Update**: A minimum of 183 breeding pairs with a "long-term average production of 1.25 young per anum [*sic*] by 1995." In addition, "eggshell thickness must be within 10 percent of the pre-DDT average measurements of 0.359 mm and must be maintained for a 5 year span." The states in the region had the following recovery goals, as expressed in pairs of peregrines; AZ-46, CO-31, ID-17, KA-0; MT-20, NB-1, NM-23, ND-0, OK-0, SD-0, TX-8, UT-21, WY-14 (U.S. Fish and Wildlife Service 1984g, pp.20,21).

C. **Pacific Coast Region** (CA, NV, OR, and WA)

I. **1982 Recovery Plan** (only version written and approved): Delist: 185 pairs with a minimum productivity of 1.5 fledged young/year over at least five years. The recovery goals by pairs in each state are; CA-120, OR-30, WA-30, NV-5. Downlist: At least 122 pairs with a minimum productivity of 1.5 young fledged/year (U.S. Fish and Wildlife Service 1982f).

D. **Alaska**

I. **1982 Recovery Plan** (only version written and approved): "28 nesting attempts, 50 young to near fledging in the upper Yukon-Tanana Rivers study area." In addition: a) levels of DDE "must average less than 5 ppm (wet weight) and that the total concentration of other chlorinated pesticides must average less than 1 ppm (wet weight); b) "Eggshells…must not be more than 10 percent thinner than pre-DDT era eggs" (U.S. Fish and Wildlife Service 1982b, pp.9,11).

CLAIMS THAT THE AMERICAN PEREGRINE FALCON IS AN ESA SUCCESS STORY

1) "The U.S. Fish and Wildlife Service removed the peregrine falcon from the list of endangered and threatened species, marking one of the most dramatic success stories of the Endangered Species Act."—U.S. Fish and Wildlife Service[2]

2) "Today, we celebrate another major success of the Endangered Species Act—the peregrine falcon has been saved from the brink of extinction."—thenVice President Al Gore commenting on the American peregrine's delisting[3]

3) "The Endangered Species Act is the most innovative, wide-ranging and successful environmental law that has been passed in the past quarter century. I can cite case after case…that the peregrine falcon is moving from near extinction to the threshold of de-listing."—then Interior Secretary, Bruce Babbitt[4]

4) "There are a number of successes in the Endangered Species Act. The…peregrine falcon ha[s]…been brought back from the brink of extinction."—then Sen. Dirk Kempthorne[5]

5) "[The]…announcement about the [potential delisting of the] American peregrine falcon…symbolizes the great success of the ESA."[6]—Senator Joseph Lieberman

6) "[W]e owe the survival of the...peregrine falcon...to the Endangered Species Act."—Eric Fischer, then Senior Vice President for science and sanctuaries at the National Audubon Society in the US[7]

7) "In just twenty years the Act has proved itself indispensable in the saving of such nearly lost creatures as the...peregrine falcon..."—T.H. Watkins, then-Editor of *Wilderness*, the magazine of the Wilderness Society[8]

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[2] U.S. Department of the Interior 1999h.

[3] White House 1999.

[4] Babbitt 1996, p.126.

[5] Kempthorne 1995.

[6] Lieberman 1996.

[7.] Fischer 1992.

[8.] Watkins 1993.

8) "Similar upgrading [from endangered to threatened, as happened to the bald eagle] has recently been proposed for the peregrine falcon, which has recovered so well under the Act's protection that it now nests in skyscrapers in several major cities."—Union of Concerned Scientists[9]

9) "The Act has improved the status of some species, such as the…peregrine falcon."—the Ecological Society of America's ad hoc committee on the ESA[10]

10) There are a number of other claims of success.[11]

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[9] Union of Concerned Scientists 1998.

[10] Carroll et al., 1996, p.3.

[11] "The peregrine's comeback marks on of the most dramatic success stories of the Endangered Species Act."—Department of Interior (U.S. Department of the Interior 1999a); "Success Story" (FWS): "Population Increase – This species benefited from the ban on DDT, the breakdown products of which caused thinning of falcon eggshells and adult mortality. The p[e]regrine falcon also benefited from broad-based public involvement in the raising of thousands of falcons in captivity for their eventual reintroduction in the wild." (U.S. Fish and Wildlife Service 1995a, p.3); "We have proved that with a strong Endangered Species Act, we don't have to stand idly by and watch our wildlife go extinct. We can bring species back. We have proved it with the peregrine falcon," Bruce Babbitt, then-Interior Secretary (Lukins 1998); "It's a genuine success. The message here is that the Endangered Species Act works…that is the message that comes at us at 200 miles per hour with the peregrine falcon," Bruce Babbitt, then-Interior Secretary (Kelley 1999a); "This is a real milestone in the history of the Endangered Species Act," Bruce Babbitt, then-Interior Secretary, commenting on the proposed delisting of peregrine (Knickerbocker 1998); "The delisting of the Peregrine Falcon shows the Endangered Species Act is working. The Peregrine Falcon is on the road to recovery. It is an important success story," John Flicker, President, National Audubon Society (National Audubon Society 1999). "There are many success stories that can be attributed to this landmark law--the recovery of the bald eagle, brown pelican, peregrine falcon, Pacific gray whale, and the American alligator. The black-footed ferret, red wolf, California condor and other species have been spared from extinction. All thanks to our nation's commitment to conserving our great natural heritage." (National Audubon Society 1995). "Since its enactment little more than two decades ago, the Endangered Species Act has yielded a long list of success stories. The…recovery of populations of species…[such as]…peregrine falcons…testify to the Act's effectiveness." - Defenders of Wildlife (Defenders of Wildlife 1995, p.vi); "With it [the ESA] we have accomplished some remarkable successes…peregrines are no longer rarities"— Mark Shaffer, then-Vice President for Resource Planning and Economics, the Wilderness Society (Shaffer 1992, p.9); "If we are able to save a single species man has brought to the brink of extinction, then we have been successful. In fact, the Act's record is even better… peregrine falcons…are making solid comebacks."—Randall Snodgrass, then-Director of Wildlife Policy, National Audubon Society (Horton 1993, p.68); "[T]he law has saved numerous species from imminent extinction…[including] the peregrine falcon…"--Sierra Club (Sierra Club, ND, Ecoregions). "It is useful to take stock of the accomplishments of the past 20 years...peregrine falcons…Th[is is] but [one] of the successes that the Endangered Species Act has helped to make possible." (Bean 1993c, p.22). "Another false claim of some ESA opponents is that the act just doesn't work. Just look at the results in Texas…[A] Texas species that ha[s] hope because of a strong ESA [is] the peregrine falcon."—Tom Maddux, chair, National Forest Protection Campaign of the Sierra Club's Lone Star Chapter (Maddux 1993). "There are many success stories that can be attributed to this landmark law -- the recovery of the…peregrine falcon…All thanks to our nation's commitment to conserving our great natural heritage."—National Audubon Society (National Audubon Society 1995, *Congressional Guide*); "The peregrine falcon…will make the journey into the 21st century thanks to a modern day Noah's Ark—the Endangered Species Act of 1973."—National Audubon Society (National Audubon Society 1998). "The Endangered Species Act is important…because it has shown that the road to extinction can be reversed…The peregrine falcon, once entirely eliminated from the eastern United States, has successfully been reintroduced there." (Bean 1990a, p.viii).

CONSERVATION OF THE AMERICAN PEREGRINE FALCON

The conservation and recovery of the American peregrine falcon, otherwise known as the *anatum* sub-species, was due almost entirely to factors unrelated to the Endangered Species Act. In addition, the Act did more harm than good for the peregrine's conservation. These assertions will likely generate skepticism because the Act's proponents have put enormous efforts into claiming the American peregrine as an ESA success story. Yet a careful examination of the evidence reveals the ESA can claim little, if any, credit for the peregrine's rebound.

Experts agree about the ESA's lack of a role in the peregrine's recovery. Two of the foremost authorities on the American peregrine and its conservation—Tom Cade, professor of ornithology at Cornell university from 1967-1988 and founder of the Peregrine Fund, the organization that led recovery efforts for the American peregrine, and his long-time colleague at the Fund, the late Bill Burnham—weighed-in on the issue of the role played by the ESA in the peregrine's conservation. "Did the Peregrine recover primarily because of the ESA, as [Interior] Secretary Babbitt proclaimed [in 1999 when delisting occurred]?" they asked. "We have explained that protection by the ESA for the Peregrine provided no measurable benefit to recovery of the species and [the Act] was a regular, if not constant, obstacle because of its emphasis on law enforcement and permitting."[12] While the opinion of Cade and Burnham carries a great deal of credibility, the reader is not asked simple to believe it without supporting evidence.

The story of the American peregrine's conservation is one of the most complex for any of the species the FWS claims recovered because of the ESA. Due to this, the profile is among the longest for any species. As with the other profiles, the American peregrine profile is broken-down into separate topics.

Almost all of the peregrine's remarkable rebound can be attributed to four factors, which are discussed in decreasing order of significance: the ban of the pesticide DDT in 1972, one year prior to the passage of the ESA; data error and the natural population growth of peregrines that

[12] Cade and Burnham 2003b, p.277.

survived the DDT-induced population crash; the increase of peregrines in Alaska where very little, if any, conservation efforts occurred; and the reintroduction and introduction of captive-bred peregrines throughout large portions of the U.S. due in large part to private organizations led by the Peregrine Fund and the relatively minor role played in this by the FWS.

In addition to these four factors, the profile examines fourteen other issues that played roles in the peregrine's conservation: the relatively minor importance of habitat protection in the lower 48 states; the FWS's inclusion of Canadian peregrines when discussing the sub-species' conservation in apparent efforts to inflate population numbers; conservation efforts hindered by the Interior Department; introduction of non-native peregrines; politics and taxonomy; controversy as to whether delisting was merited; waste of resources by the FWS through the designation of multiple recovery regions; unqualified people appointed to recovery teams; increasingly difficult recovery criteria with successive versions of recovery plans; opposition to delisting; belated delisting; ESA proponents exaggerating the role played by the federal government in the peregrine's conservation; whether the ESA was necessary for the American peregrine to rebound; and the excessive monitoring period prescribed by the post-delisting monitoring plan.

DDT

As with the other of the ESA's "DDT birds" that have been delisted (bald eagle, Arctic peregrine falcon, eastern brown pelican, and California brown pelican), the pesticide DDT is widely recognized as by far the most significant cause of the peregrine's decline. Also, the banning of DDT in 1972, not the ESA's passage in 1973, is widely recognized as the paramount cause of the American peregrine's resurgence.[13] Therefore, the ESA can claim no credit for the DDT ban and, therefore, the paramount reason for the recovery of the American peregrine falcon.

DDT, specifically DDE, its metabolite, or form into which it would break down, caused eggshell thinning that was especially pronounced in raptors, such as the peregrine, as well as pelicans (for the sake of simplicity, DDT will be used when referring to the pesticide and any of

[13] U.S. Environmental Protection Agency 1972. It should be noted that while the Federal Register notice was dated July 1972, the cancelation of DDT was ordered to occur December 31, 1972.

its metabolites). Metabolites of DDT are fat-soluble so when ingested from prey they tend to persist in birds' bodies. DDT metabolites inhibit calcium deposition from the adult to the egg, with the result that females lay unnaturally thin-shelled eggs. These thin-shelled eggs are susceptible either to infertility, which is caused by improper exchange of gasses—such as oxygen and carbon dioxide—between the embryo and the exterior environment, or simply breaking under the weight of an incubating parent. This led to widespread reproductive failure, and a population crash of the American peregrine because of the massive amounts of DDT used in the post-WW II years and because of the pesticide's persistence and negative effects on reproduction at relatively low levels.

The relationship between DDT and eggshell thickness, and the influence of this on the reproduction of peregrine falcons and other raptors, has been very firmly established through numerous peer reviewed journal articles.[14] Indeed, the FWS acknowledges the role played by DDT: "The principal cause of the peregrine's decline has been due to the presence of chlorinated pesticides, especially DDT and its metabolite DDE."[15]

Even prior to the 1972 ban in the U.S., Canada banned DDT in 1970 where the vast majority of Arctic peregrines, a different sub-species, live. Also, DDT use in the U.S. began to decline long before the eventual ban in 1972. DDT use in the U.S. peaked in 1959 at 35,765 metric tons and then steadily declined so that by 1972 use was around 10,000 metric tons.[16]

The 1972 ban of DDT is widely recognized as the single most significant factor leading to the peregrine's rebound, something the FWS repeatedly admits.[17] "We all acknowledge that

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[14] Ratcliffe 1967; Cade et al., 1968; Enderson and Berger 1968; Hickey and Anderson 1968; Fyfe et al., 1969; Berger et al., 1970; Wiemeyer and Porter 1970; Cade et al., 1971; White et al., 1973; Anderson and Hickey 1974.; Lincer 1975; Peakall et al., 1975; Haugh 1976; Peakall et al., 1976; Cooke 1979; Peakall and Kiff 1979; Pruett-Jones et al., 1981; Enderson et al., 1982; Jenny 1983; Risebrough 1986; Ellis et al., 1989; Newton et al., 1989; Peakall et al., 1990; Olsen et al., 1992.

[15]. U.S. Fish and Wildlife Service 1991b.

[16] Nisbet 1988, p.356.

[17] "Th[is] bird benefited...most of all from the banning of DDT." (U.S. Fish and Wildlife Service 1993f, p.13); "The banning of DDT made the recovery of the peregrine falcon possible" (U.S. Fish and Wildlife Service 1999j); The identical statement was also made in another press release (U.S. Fish and Wildlife Service 2000f); "The most significant factor in the recovery of the peregrine falcon was the restriction place on the use of chlorinated hydrocarbon pesticides. The use of DDT was banned in Canada in 1970 and in the United States in 1972. Consequently, the reproductive rates of peregrine falcons improved and its comeback began." (U.S. Fish and Wildlife Service 1999k). "It is generally acknowledged that the most significant factor in the recovery of the peregrine falcon was the restriction placed on the use of organochlorine pesticides. Use of DDT was banned in Canada in 1970 and in the United States in 1972. Since implementation of these restrictions, reproductive rates in most surviving peregrine falcon populations in North America improved, and numbers began to increase" (U.S. Fish and Wildlife Service, ND, The Role of the Endangered Species Act).

the primary reason that this sub species has recovered is that we restricted DDT in the early 1970s," said Robert Mesta, the lead FWS biologist in charge of delisting the American peregrine.[18] Mesta again made the same observation.[19] "It was amazing how the birds reacted to the restriction of DDT. Once that was no longer in the environment, they just sprung back," he added.[20]

Experts on the peregrine's conservation agree on the paramount role played by the DDT ban. "Let there be no doubt: the banning of DDT in 1972 was the single most important action taken to ensure the survival and recovery of the Peregrine Falcon in North America," state Tom Cade and Bill Burnham of the Peregrine Fund. "Without it, we would not have celebrated the delisting of the American Peregrine in 1999, for it made possible everything good that happened to the Peregrine in the last decades of the 20th Century."[21] On the occasion of the peregrine's delisting Cade said, "If that [DDT ban] hadn't happened, we wouldn't be here today, Endangered Species Act or no."[22] Cade and Burnham made other similar statements.[23] Others also reached the same conclusion about DDT. "Population trajectories of the peregrine falcon and the brown pelican began to switch direction when DDT, which caused egg-shell thinning and therefore resulted in few offspring, was banned from use in the United States," stated Sharon Collinge, professor of ecology at the University of Colorado-Boulder.[24]

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[18] National Public Radio 1999.

[19] Robert Mesta, FWS: "The significant contribution to the resurgence of the peregrine falcon was, in the early '70s, the restriction of DDT," (Wood 1999).

[20] Rathke 1999.

[21] Cade and Burnham 2003a, p.16.

[22] Kelley 1999b.

[23] **Tom Cade**: "Nearly everyone agrees that the main culprit [in the peregrine's decline] was the chemical pesticide DDT or its environmental breakdown product, DDE" (National Wilderness Institute 1990) "The Peregrine Fund was organized in 1970 and we were fairly confident that we could develop the techniques necessary to recover the Peregrine, but we were equally certain that we would be wasting our time unless something was done about DDT" (Peregrine Fund 1997a).

Bill Burnham: "We also must not forget that success [in delisting the peregrine] would not have been possible without ending the use of DDT, the primary cause of the species' decline" (Peregrine Fund 1999a). "[R]esearch pinpointed organochlorine pesticedes as the problem, and banning of DDT resulted in 1972 in the United States. The Canadians succeeded in that feat two years earlier. Without a cleaner environment, recovery of the Peregrine Falcon and other affected species would not have been possible" (Burnham 1999).

[24] Collinge 2001.

Even the ESA's foremost supporters recognize the paramount importance of the DDT ban. Environmental Defense Fund, the pressure group with perhaps the most knowledge of DDT because it was founded in 1967 for the sole purpose of banning the pesticide, acknowledged the significance of the ban. "Had our Congress then heeded the dire predictions of DDT's advocates, we would never have experienced the recovery of…the peregrine falcon," said Michael Bean of Environmental Defense Fund.[25] "The banning of DDT permitted the restoration of the top predators in the bird world," asserted Art Cooley, one of the group's four co-founders. "In all of the states that we've looked at, the breeding success of all of the species affected by DDT is going up, everywhere, without exception."[26] Environmental Defense Fund made other similar statements.[27]

Other ESA supporters also recognize the significance of the DDT ban. "Banning of DDT in 1972 was the most important factor in the peregrine falcon's recent population increase," states Joel Pagel, then a candidate in ecology at University of California-Davis, U.S. Forest Service employee, and strong supporter of the ESA.[28] And Senator Joseph Lieberman also recognized that importance of the DDT ban; "The recovery of the peregrine relied in large part on federal legislation other than the Endangered Species Act. The banning of pesticides that thinned egg shells was done through federal environmental laws such as the Toxic Substances Control Act, now coordinated with the Endangered Species Act through what is known as the 'Section 7 Consultation Process.' These pesticide laws reversed a reproductive crisis to adult birds of many species, as Rachel Carson so eloquently documented in 'Silent Spring.'"[29] Even though DDT was banned under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Senator Lieberman's point is still well taken.

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[25] Bean 2003.

[26] Rubin 1997.

[27] "The osprey—like the bald eagle, peregrine falcon, and other birds of prey—has enjoyed a dramatic recovery over the past 25 years, due in large part to the nationwide ban on DDT won by Environmental Defense in 1972" (Environmental Defense Fund 2000); "The bald eagle—like the osprey, brown pelican and peregrine falcon—has enjoyed a dramatic recovery due in large part to the ban on DDT won by our founders." (Environmental Defense Fund 2003).

[28] Pagel 2002, p.53.

[29] Lieberman 1996.

DIMINISHING THE SIGNIFICANCE OF DDT

The DDT ban puts ESA supporters in a quandary. One the one had they are in favor of the ban because of the positive results it had on populations of carnivorous birds. On the other hand, the ban frustrates them because they cannot credit the ESA with the ban. As a result, and despite the overwhelming body of scientific evidence and expert opinion about the paramount importance of the DDT ban to the peregrine's conservation, the FWS and many environmental pressure groups have tried to diminish the role played by the ban.

While supporters of the ESA acknowledge the overarching importance of the DDT ban, they also try to diminish the importance of it by conflating conservation efforts for the peregrine with the ban, or by failing to acknowledge the ban's paramount importance.[30] These claims are similar to false assertions about ecosystem conservation being co-equal with species conservation, which are discussed in the first section of this book. "The pesticide DDT was banned in 1972, a few years after the peregrine was listed as an endangered species…" asserts a number of pressure groups, including the Center for Biological Diversity, Defenders of Wildlife, Earthjustice, Endangered Species Coalition, Natural Resources Defense Council, National Wildlife Federation, and U.S. PIRG.[31] This statement gives the impression that the peregrine's listing under the ESA preceded the DDT ban. This is not the case. While the FWS listed the peregrine in 1970 under the 1969 Endangered Species Conservation Act, a predecessor to the ESA, this law did not contain the punitive land-use regulations that make the 1973 Act so powerful, controversial, and esteemed by its supporters. Furthermore, the ESA's punitive regulations are, in the eyes of its proponents, the Act's provisions they most cherish and therefore most vigorously defend. But if these pressure groups want to claim the DDT ban

[30] "Once listed as Endangered, the Peregrine falcon population has increased in response to reintroduction and habitat protection, as well as the elimination of other threats such as pesticide use" (Endangered Species Coalition, ND, Success Stories); "This species benefitted [*sic*] from aggressive habitat management, protection during the breeding season and from the ban of DDT, the components of which caused thinning of falcon eggshells and hatching deaths" (U.S. Fish and Wildlife Service 1992a); An identical claim to the previous one is made in (U.S. Fish and Wildlife Service 1993b); "This species benefitted [sic] from the ban on DDT, the breakdown products of which caused thinning of falcon eggshells and adult mortality. The peregrine falcon also benefitted [sic] from broad-based public involvement in raising of thousands of falcons in captivity for their eventual reintroduction to the wild" (U.S. Fish and Wildlife Service 1995a).

[31] American Rivers et al., 2003c.

occurred after the peregrine's listing, then they are diminishing the need for the 1973 ESA, especially the Act's land-use restrictions.

DDT DENIERS

As with the other "DDT birds," there are some who try to deny any causal link between DDT and eggshell thinning. The leaders of the DDT deniers have been, until his death in 2004, Gordon Edwards, professor of entomology at San Jose University in California, and Steve Milloy, an activist who has a Master's in health science statistics. Edwards and Milloy's arguments have no validity and rely on bogus evidence and ignoring the massive body of data on DDT, eggshell thinning and populations of raptors and pelicans.

CONCLUSIONS ON DDT

Despite efforts to minimize its significance, the 1972 DDT ban, not passage of the ESA in 1973, was the paramount cause of the resurgence of the American peregrine falcon. Ironically, this is a fact that is discomfiting both to proponents and opponents of the ESA.

DATA ERROR and SURVIVING PAIRS

Data error accounts for roughly 56% of the 1,331 pairs of American peregrine falcons estimated by the FWS to exist in the U.S. when delisting occurred in 1999.[32] In the case of the American peregrine, data error means researchers discovered peregrines subsequent to the passage of the ESA, and some peregrines survived the DDT-induced population decline.

Two methods were used to arrive at 56%; estimating the number of pairs due to releases of captive-produced birds, and estimating the number of pairs extant due to data error and those that survived DDT. The estimates generated by these different methods allows for the use of multiple sources of data in an attempt to arrive at a more accurate overall estimate.[33]

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[32] White et al., 2002, p.36.

[33] The cutoff date for data included in this analysis is based on information cited by the FWS in the *Federal Register* when the agency delisted the peregrine in 1999. Population data cited in the *Federal Register* was based largely on counts of known pairs in 1998. However, pairs known to be extant in 1998 would have had to fledge at least in 1997 so data used in the foregoing analysis, especially for birds raised in captivity and released to the wild, is for peregrines released through 1997.

RELEASES OF BIRDS

One way of determining the composition of pairs of American peregrines extant in 1999 when delisting occurred is to estimate how many pairs were due to releases of captive-produced birds. As will be detailed in the subsequent section, peregrines were released successfully into the wild as a result of birds bred in captivity. Two sources were used to estimate the number of peregrines extant due to releases. The first is by one of the foremost experts on peregrine conservation in the U.S., Tom Cade of the Peregrine Fund. He estimates that by 1998 the nearly 7,000 individual peregrines released in the U.S. and Canada resulted in a minimum of 700 established pairs.[34] The precise number of released birds appears to be 6,960, which was the total cited by the Peregrine Fund at the time of the peregrine's delisting in 1999, of which 1,667 were released in Canada.[35] Cade calculated his estimate of 700 pairs by taking a number of factors into consideration.[36] Using Cade's estimate would mean that approximately 600 pairs were extant in the U.S. and 100 pairs in Canada due to releases of captive-produced birds.

In order to assess the accuracy of these estimates, particularly the 600 total pairs in the U.S., three methods were employed. By comparing these three additional estimates with Cade's estimate of 700 pairs, it is possible to get an idea of the number of peregrines extant due to data error and DDT survivors, as well as captive-produced birds.[37] The conclusion to be drawn from

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[34] White et al., 2002, p.36.

[35] Walton 2003, p.170; Burnham 2003, p.152; Tordoff and Redig 2003, p.174; Peregrine Fund 1999b, p.3.

[36] All pairs in the East and Midwest (225) were the result of captive-produced birds because prior to releases the populations in these regions had been extirpated; all pairs in Texas, New Mexico and Arizona were extant due to natural causes because so few birds were released in the region; 90% of pairs in Washington, Oregon, Montana, Idaho, Wyoming, Nevada and Colorado were due to releases (244); 50% of pairs in Utah and California due to releases (165); and 105 pairs in Canada due to reintroductions. He then rounded off the total of 739 to 700 to be conservative. (Cade 2004a)

[37] First, of all the peregrines released in North America through 1997, 76% were in the U.S. and 24% were in Canada [The total for Canada (1,667 birds) was obtained from: Peregrine Fund 1999b, p.3]. These percentages were then applied to Cade's estimate of 700 pairs, to arrive at an estimate of 168 pairs in Canada due to releases and 532 pairs in the U.S. There are a number of problems with this methodology, not the least of which is that it assumes uniform rates of survivorship for all released peregrines. Second, as Cade's estimate was fairly crude, and so, too, is this one. Third, Cade believed his estimate of 700 pairs to be a lowball figure, and if this is true then 532 pairs for the U.S. would also be an underestimate by at least 78 pairs for the U.S. Even though applying the percentages of birds released in the U.S. and Canada to Cade's estimate is a rather crude method, it is useful for obtaining a rough "ballpark" estimate of the number of peregrine pairs in the U.S. due to releases of captive bred and fostered birds.

A second method of arriving at an estimate of the number of pairs due to releases is to use the ratio of 1 territorial pair for

every 13 birds released, which was devised by four of the leading experts on peregrine conservation in the U.S.; James Enderson of Colorado College, William Heinrich and Lloyd Kiff of the Peregrine Fund and Clayton White of Brigham Young University (Enderson, et al., 1995, p.157). This estimate, published in 1995, was based on the 4,680 birds that had been released in the U.S. from 1974 through 1994, which meant that an estimated 360 pairs were due to captive-produced birds (Enderson, et al., 1995, p.157). More recent data indicates that this total is actually 4,803 birds (These data are from: Walton 2003, p.170; Burnham 2003, p.152; Midwest Peregrine Society; Tordoff and Redig 2003, p.174; Peregrine Fund 1999b, p.3). Applying the 1:13 ratio would result in 369 pairs due to releases. In 1994, these 369 pairs represented 44% of the total known population in the lower 48 states that time. Known pairs are the reference point because the population data contained in the final Federal Register rule on delisting was based on known, or counted, pairs, as opposed to the number of pairs estimated. Employing the 1:13 ratio has been done not only because it was the result of research by four of the most knowledgeable peregrine biologists in the U.S. but also because the 4,850 peregrines released from 1974-1994 represent roughly 90% of all birds released in the lower 48 states through 1997.

According to Tom Cade the main caveat with the 1:13 ratio is that it is more of an estimate of the number of pairs that survive to breeding age than it is of the total number of peregrines the result from a given number of released birds (Cade 2004a). In other words, the 1:13 ratio really does not take the progeny of successful pairs into account. However, Enderson et al.,. make no such mention of this. Even though it is prudent to heed Cade's caveat, the 1:13 ratio is useful for getting at least a rough idea of how many pairs were at least initially due to captive-produced birds. But on the other side of the equation, the number of pairs known to be extant at the time releases of captive-produced birds started also does not take the progeny of these pairs into account. The upshot is that the 1:13 ratio, as well as estimates of birds extant at the time of listing or when releases commenced, must be used with care.

So presuming that the 1:13 ratio is at least a somewhat accurate method of estimating the number of released peregrines needed to establish a territorial pair, the ratio can also be applied to peregrines released after 1994. From 1995 through 1997 a total of 379 peregrines were released in California, the Rocky Mountains and Pacific Northwest, and in the Midwest (Data on the total number of birds released each year in each region are contained in: Walton 2003, p.170; Burnham 2003, p.152. Tordoff and Redig 2003, p.174.) The East is not counted because releases had not occurred in this region since 1992. (Cade 2003). Applying the 1:13 ratio to the 379 birds released would mean that 29 pairs from 1995 through 1997 were due to captive-produced peregrines. Adding these 29 pairs to the 369 estimated pairs, which was obtained by using Enderson et al.,'s. 1:13 ratio through 1994, results in a total of 398 estimated pairs as a result of captive-produced peregrines by 1998, the cutoff for data used in by the FWS when delisting occurred in 1999. One way to check if this estimate of 398 pairs is in the general ballpark of a sound estimate is to apply the percentage of known pairs in 1994 due to releases of captive-produced birds when the 1:13 ratio was calculated (44%) to the total number of known pairs at the time of delisting. This would mean that roughly 44% of the 1,030 known pairs in the lower 48 states at the time of delisting should be due to captive-produced birds. The result, 453 pairs, is fairly close to the estimate of 398 pairs.

When the 1:13 ratio is applied to the total number of peregrines released in the U.S. and Canada, the result is a total of 128 pairs in Canada and 398 pairs in the U.S. But as Tom Cade has pointed out, one needs to assume that these pairs would have reproduced successfully between when they were established and when delisting occurred. So he assumed a growth rate of 5%-10% per year, which is consistent with historical trends. Applying this growth rate to the 1:13 ratio pairs would mean that by 1998 there would be around 600 pairs in the U.S. and 100 in Canada due to captive-produced birds.

The third method is to estimate the number of pairs extant in Canada in 1998 as a result of releases of captive-produced birds. Fortunately, Canada conducts a peregrine survey every five years so the results from the 1995 survey were used because data from this survey was used by the FWS at the time delisting occurred in 1999.(Data from the 1995 survey were published in the 2000 survey, and the 2000 survey is easier to obtain because it was published in a peer reviewed journal (Rowell et al., 2003). Other sources of information are from Canadian provincial wildlife agencies. When the peregrine was delisted in the U.S. there were 319 known pairs of *anatum* peregrines in Canada. Analysis of this total reveals that roughly 97 pairs were due to reintroductions of captive bred or fostered birds (To determine how many Canadian peregrines were extant in 1999 due to releases, a province-by-province analysis was employed for those regions in which *anatum* peregrines exist.

Labrador and Newfoundland: No captive birds were released (Government of Newfoundland and Labrador, ND).

New Brunswick and Nova Scotia: All six pairs were due to releases (Rowell et al., 2000, p.99).

Southern Quebec: It is assumed that thirteen pairs extant in 1995 were all due to releases (Rowell et al., 2000, pp.101,110).

Southern Ontario: Extensive releases occurred in this region so it is assumed that all fourteen pairs extant in 1995 were due to releases (Rowell et al., 2000, pp.101-102,110).

Southern Manitoba: The *anatum* was extirpated as a breeding species from Manitoba (Provincial government of Manitoba, ND); Releases of captive birds did occur so therefore the four pairs extant in 1995 are assumed to be the result of these releases (Rowell et al., 2000, pp.102, 110).

Southern Saskatchewan: It is assumed that the two pairs of peregrines extant in 1995 were the result of releases of captive birds, as both pairs lived in urban areas (Rowell et al., 2000, pp.102-103, 110).

Alberta: In 1995, there were twelve pairs south of 58º North Latitude and twenty-three pairs north of 58º North Latitude (Rowell et al., 2000, p.110). In 1997, it was estimated that 65% of the peregrines in the southern portion of Alberta were the result of captive bred or fostered birds. As for the northern portion of the population, an estimated 19% of the pairs originated in captive breeding facilities (Rowell and Stepinsky 1997). Applying these percentages to the number of pairs extant in 1995 results in

the estimates derived from these three methods is that they are generally in agreement with the estimate of 600 pairs of peregrines extant in the U.S. at the time of delisting were due to captive-produced birds. As the following analysis will reveal, the more likely total is around 550-600 pairs.

DATA ERROR AND PAIRS SURVIVING DDT

Another way to estimate how many pairs of peregrines extant at the time of delisting were due to data error is to estimate how many pairs were extant because of data error or because they survived the DDT-induced population crash. There are two main sources of information for the data error and surviving peregrines.

First, as detailed in the subsequent section, are the 301 pairs in Alaska, where no releases of captive-bred peregrines happened. In addition, the ESA and FWS did virtually nothing for these peregrines in the way of conservation efforts. This is clear from reading the FWS's summary of Alaskan peregrines when delisting occurred.[38]

Second, is the huge population of peregrines in the portions of the western U.S., especially the Rocky Mountain region, that survived the DDT-induced population crash. DDT was essentially not used in this region, and many of the peregrines would not migrate far, if at all, to regions where they might ingest DDT. Subsequent to the ESA's passage, researchers conducted surveys of this population, and the pairs of peregrines discovered by these surveys

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eight pairs south of 58º North Latitude and four pairs north of 58º North Latitude for a total of twelve pairs province-wide due to release of captive bred and fostered birds.
British Columbia: It does not appear that any releases of captive bred or fostered birds occurred prior to the 1995 national survey. Therefore, it is assumed that all pairs in the province by 1995 were the result of naturally occurring peregrines.
Yukon Territory: In 1995, there were a total of 113 pairs in the territory. Of these, only the Yukon River population, which consisted of 46 pairs in 1995, appears to have been augmented with captive-produced birds. It is not known how many pairs resulted from these reintroductions, but in the interest of not under-counting the number of pairs, it will be assumed that all 46 pairs were due to reintroductions.
Northwest Territories: It does not appear that any releases took place. For the sake of simplicity, 100 pairs will be used as the total estimate. So if these 100 pairs are subtracted from the Tom Cade's estimate of 700, then some 600 pairs of peregrines in the U.S. at the time of delisting were due to releases of captive-produced birds. This estimate is roughly consistent with the estimate derived from the 1:13 ratio, and it is in the ballpark of Cade's estimate of 700 pairs in North America.

[38] U.S. Fish and Wildlife Service 1999i, p.46544.
Essentially all the FWS did was monitor these Alaskan *anatum* peregrines, and this consisted largely of monitoring breeding pairs and their number of young fledged as well as pesticide levels in eggshells. A further discussion of Alaskan peregrines is in the section below titled, "Remote Alaskan Habitat." In short, the Alaskan peregrines are DDT survivors, and the ESA and FWS can claim essentially no credit for their conservation, especially because the ESA's habitat protection provisions—which are, after all, what distinguishes the ESA and makes it such a powerful law and so revered by the FWS and environmental pressure groups—seem to have had very, very little, if much of anything, to do with the conservation of *anatum* peregrines in Alaska.

should be regarded as cases of data error. The most notable result of these surveys was the discovery in the mid-1980s of more than 250 pairs of peregrines in the Colorado Plateau region of northern Arizona and southern Utah. Prior to these surveys, some in the falconing and ornithological communities knew that a potentially sizeable population existed in this region, but no surveys had ever been conducted because the area is remote and the terrain very rugged.[39] Subsequent to the initial surveys in the mid-1980s this population either increased through further surveys or population growth, or both, because at the time of delisting, this region had approximately 323 pairs of peregrines; 164 pairs in Utah and 159 pairs in Arizona. No releases of captive-bred peregrines took place in Arizona so it is assumed that all the pairs in the state were the result of progeny of birds extant at the time of the ESA's passage.[40] As for Utah, almost all of the state's 164 estimated pairs at the time of delisting were due to data error or birds that survived the DDT-induced population crash.[41]

When delisting occurred in 1999 other states had pairs of peregrines extant because they survived the DDT-induced population crash. Of the populations in Texas and New Mexico, almost all pairs, 11 and 29, respectively, were extant for this reason.[42] In California, approximately 84 pairs at the time of delisting were probably due to extant peregrines, which

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[39] Burnham and Cade 1992, p.4.

[40] Peregrine Fund 1999c, p.1.

[41] Releases in Utah occurred over an eleven-year period, from 1979-1989. (Peregrine Fund 1999c, p.1.) During the first six years peregrines were released in northern Utah in the general vicinity of the Great Salt Lake as well as the northeastern corner of the state. (Burnham et al., 1988, p.570.) By subtracting the number of pairs extant at the time of delisting due to releases of captive-bred birds, it is possible to arrive at a rough estimate of the number of data error pairs. At the time of delisting, there were an estimated eleven pairs in northern Utah. (Burnham 2003, p.135.) This estimate was checked against two sources of data, one of which was a report by the Utah Division of Wildlife Resources, the state's wildlife management agency, which indicates that in the late 1990s there were 11 pairs extant in the northern part of the state. (Even though the report was published in 2003, the data for the peregrine was collected in the late 1990s. As the peregrine was delisted in 1999, the data in the report for the peregrine is pertinent. From the report's map of nest sites known to exist since 1983, inclusive, there were eleven peregrine nest sites in northern Utah. (Bosworth, 2003, p.148). This would mean that at the time of delisting, some 153 pairs of peregrines were extant due to a combination of data error and birds that survived DDT. The other source of data was to apply the 1:13 ratio to the 105 total peregrines released in Utah.(Burnham 2003, p.152.) Applying the 1:13 ratio to these 105 birds would mean that roughly eight peregrines were due to captive-produced birds. In the interest of a conservative estimate, and assuming these birds reproduced, a total of eleven pairs will be assumed to be the result of captive-produced birds.

[42] No releases occurred in Texas, so it is assumed that this state's 11 pairs at the time of delisting were due to the seven pairs extant in the mid-1970s. (Peregrine Fund 1999c, p.1) As for New Mexico, the Peregrine Fund did not consider any of the pairs in New Mexico to be the result of captive-produced birds even though a few were released in the state. (Peregrine Fund 1999c, p.1) In New Mexico, at the time of delisting, there were an estimated 32 pairs, eight of which were known to exist prior to when releases occurred. (Peregrine Fund 1999c, p.1.) But only 28 birds total were released, and this occurred over three years, from 1977 through 1979. (Burnham 2003, p.152.) Given the very small number of birds released, as well as the Peregrine Fund's data, it is assumed that almost all of pairs were DDT-survivors or cases of data error. Therefore, it is assumed that three pairs were due to reintroductions while the remaining 29 were data error and DDT survivors. Three pairs were arrived at by a combination of applying the 1:13 ratio and adding an additional pair in order to arrive at a conservative estimate.

meant approximately 83 pairs were due to captive-bred birds.[43] The rest of the pairs in the remaining western states (Idaho, Wyoming, Montana, Nevada, Washington, Oregon, and Colorado) were almost totally due to reintroductions. When the peregrine was listed under the ESA in 1973, there were an estimated 11 pairs in these seven states.[44] When delisting occurred, there were an estimated 269 pairs of peregrines in these seven states and California. According to Tom Cade, roughly 90% of the 269 pairs in these states were due to reintroductions. This would mean that 242 pairs in these states were due to captive-produced birds, and 27 to extant birds.

When all these estimates are added together, the total is 447 pairs of peregrines due to data error or birds that survived the DDT-induced population crash.

One possible objection to this estimate of 447 peregrines is that peregrines released in some states, or their progeny, likely established themselves as breeding pairs in other states—a sort of "spillover" effect—and therefore estimates of pairs due to released birds is likely an undercount. However, if such a spillover effect did occur for released birds then it also likely occurred for those peregrines naturally extant (i.e., not as a result of releases). So it is reasonable to assume that the spillover effect worked both ways, for both released and naturally occurring birds.

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[43] In the interest of an accurate estimate, a conservative methodology was used. In California, prior to the commencement of releases, there were eight pairs known (Peregrine Fund 1999c, p.1). Releases of captive-produced peregrines began in 1977, with the release of two birds. Two birds were released the following year, then five in 1979, and nine in 1980. Large-scale reintroduction started in 1981, with the release of twenty-eight birds. From 1981 through 1992, an average of sixty-five peregrines were released each year (Walton 2003, p.170). But in 1980 there were thirty-nine pairs in California. The point is that prior to the beginning of large-scale reintroductions, there were thirty-nine pairs in California (Walton 2003, p.164). While a couple of these pairs may have been the result of the eighteen birds released from 1977 through 1980, it is reasonable to assume that almost all of these pairs were due to birds the DDT-induced decline. So in the early 1980s, roughly 37 pairs in California were essentially the result of factors unrelated to the ESA. This assumption is substantiated by information from the FWS. "The State of California now estimates a breeding population of perhaps 60 pairs," stated the FWS in 1984. "A decade ago, before any intensive surveys were made, the population was thought to be only a dozen or less. California has one of the largest aggregations of bird watchers, falconers, and others who share a special interest in raptors. To imagine more than a few pairs escaping notice was almost unthinkable in those early years. [And yet] [a]fter intensive surveys were initiated, over 30 pairs were located." (U.S. Fish and Wildlife Service 1984b, p.10524). Through 1997, the cut-off date the FWS established for data pertaining to the peregrine's delisting, (U.S. Fish and Wildlife Service 1999i, p.46546) a total of 852 peregrines had been released in California. (Walton 2003, p.170.) If the 1:13 ratio is applied to the peregrines released in California, then some sixty-six pairs of the 167 pairs known at the time of delisting were due to captive-produced peregrines. It is not known what proportion of the 167 pairs were due to population increase of thirty-nine pairs extant in the wild at the time large scale reintroductions started and the birds that were captive-produced. Tom Cade of the Peregrine Fund estimates that at the very least half of the 167 peregrines were due to reintroductions. Another factor to consider is that as of 1994, Brian Walton—the coordinator of the Santa Cruz Predatory Bird Research Group, the organization responsible for reintroducing peregrines to California—estimated in 1995 that at least 20% of territorial pairs in the California were due to captive-produced birds (Enderson et al., 1995, pp.147-148). Provided that this estimate is somewhat accurate, it would be very unlikely for the percentage of pairs to increase from 20% in 1994 to at least 50% in 1998.

[44]. Peregrine Fund 1999c, p.1; Enderson et al., 1995, p.145.

TOTALS AND CONCLUSIONS

There are two ways to arrive at estimates for the number of peregrine pairs extant in 1999 due to data error as well as surviving DDT. One method, described above, is to estimate the sub-totals for each state and add them together, which results in 447 pairs. The other method is to subtract the number of pairs extant due to releases and the number of pairs in Alaska from the total number of pairs at the time of delisting. The number of pairs due to releases of captive-bred birds is 567 (149 pairs in the Eastern U.S., 79 in the Midwest, 83 in California, and 256 in the rest of the Western U.S.). The total number of pairs in Alaska was 301, which is then subtracted from the total number of pairs at the time of delisting, 1,331, because no releases of captive-bred birds occurred in Alaska: the result is 1,030 pairs. The 567 pairs due to releases is then subtracted from 1,030, and the result is 463 pairs in the lower 48 states were due to data error of birds that survived DDT. When the two estimates are compared, they are very similar; 447 pairs vs. 463 pairs. The number of pairs in Alaska, 301, is then added because these ESA did virtually nothing for them, which brings the total to 748-764 pairs, or 56%-57% of the total of 1,331.

Another way of checking if these estimates are roughly accurate is to compare the estimated number of pairs due to captive-bred birds against Tom Cade's estimate for the same; 567 pairs vs. 600 pairs, or 43%-45%. If only these two estimates were used, this would mean that remainder of the population, 55%-57%, was due to data error and surviving DDT. Finally, when this estimate range, 55%-57%, is compared to the other range derived above, 56%-57%, it is clear they are remarkably similar because they overlap.

The upshot of all of these estimates is that approximately 55%-57% of American peregrine falcons at the time of delisting were extant for reasons other than the ESA. The implication of this is astonishing because it so fundamentally undermines claims that the American peregrine is an ESA success story and that the Act was responsible for the American peregrine's conservation and delisting.

As for the approximately 43%-45% of peregrine pairs extant due to releases, it would be inaccurate and misleading to give the ESA sole credit for these birds' existence for several reasons that will be explained in subsequent sections of this profile: private organizations were almost totally responsible for the efforts to raise peregrines in captivity and release them to the

wild; habitat protection under the ESA played an essentially negligible role; and the federal government seriously hindered conservation efforts to the point that the ESA was a net detriment to the peregrine's conservation.

Despite that the majority of the American peregrine's resurgence was due to a combination of data error and peregrines that survived the DDT-induced population crash, the FWS and environmental pressure groups are either unaware of this fact or have ignored it. Given that the FWS and at least some of these groups are very knowledgeable about the ESA, it is implausible they ignored this fact.

A typical example of the type of false and misleading claims made by ESA proponents is: "At the lowest point, only 39 pairs remained in the lower 48 states, all residing in the West," stated Margaret McMillan and Michael Bean of the Environmental Defense Fund, at the time of the peregrine's delisting in 1999.[45] While this was true when the estimate was made in the mid-to-late 1960s, it was certainly not true by at least the early-to-mid 1980s when surveys revealed the hundreds of peregrine pairs extant at the time the FWS listed the peregrine under the ESA. So using the figure of 39 pairs, without explaining that it turned out to be inaccurate, gives the highly misleading impression that the ESA was responsible from bringing the subspecies back from a few tens of pairs to over 1,000 pairs.

CAPTIVE PROPAGATION and RELEASES

The return of the American peregrine east of the Mississippi, as well as throughout portions of states west of the Mississippi, was the world's single most ambitious and, in some ways, successful wildlife restoration program due to the release of captive-bred animals. This massive effort to restore the peregrine was due in large part to the dedication and hard work of a relatively small number of individuals in the private sector, most of them falconers—people who practice the sport of falconry—and a few people in academia. The federal government played a relatively minor role, primarily through funding restoration efforts. There are two facets to this largely private effort that will be discussed. First, reintroduction of captive-bred peregrines to

[45] McMillan and Bean 1999.

areas where they nested prior to DDT-induced declines. Second, introductions of peregrines to habitat in which they did not nest historically.

CAPTIVE BREEDING AND RELEASES

The painstaking research that went into developing the successful techniques for breeding peregrines in captivity and then releasing them to the wild was done almost totally by private organizations and individuals.[46] To get a sense of the importance played by the private sector, of the 2,318 peregrines released through 1987,[47] approximately 70% were progeny of birds donated or lent by falconers.[48] Private falconers formed the backbone of the entire effort to breed and release peregrines, as they were the ones that initiated research into captive breeding, donated many of the birds used for breeding, founded the organizations that bred most of the peregrines that were subsequently released to the wild, and provided much of the funding for all of these efforts, especially in the critical initial years. The most prominent among these people was Tom Cade, professor of ornithology at Cornell University from 1967-1988. In 1970, Cade founded the Peregrine Fund, which would lead efforts to breed and release peregrines. In fact, the Peregrine Fund literally published the "bible" on captive breeding, titled *Falcon Propagation: A Manual on Captive Breeding*, in 1983. The manual, which was revised twice and translated into at least five languages, is the authoritative source on falcon and raptor propagation worldwide. Since its founding in 1970, the Peregrine Fund has grown to become the world's foremost raptor propagation and conservation organization.

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[46] The impetus for these efforts was the famous 1965 Madison (Wisconsin) Conference on the decline of peregrines and other raptors in the U.S. and Europe. After the conference, a group of biologists and falconers met and decided to initiate concerted and coordinated efforts to breed peregrines in captivity with the intention of eventually releasing them. A direct result of the conference was establishment of the Raptor Research Foundation in 1966 which served as a "valuable clearinghouse of information on the developing raptor propagation projects from 1967-1974" (Cade 1988, p.544). Despite this, the FWS has recently claimed that a 1974 meeting, sponsored by the National Audubon Society "sparked the beginning of an effort to reestablish the peregrine in the eastern United States" through releases of captive-bred birds (U.S. Fish and Wildlife Service 1999i, p.46548). This is misleading because it fails to mention that the spark behind the 1974 conference was the 1965 Madison conference and that there would have been no 1974 conference were it not for the heroic efforts of a small handful of dedicated falconers and academics. FWS seems to have portrayed events in this chronology in an attempt to give the ESA credit because the 1974 conference was held after the passage of the Act, which seem to imply that the ESA was in some way responsible for the conference.

[47] Burnham and Cade 1992; Enderson et al., 1995; Peregrine Fund 1999c; Burnham 2003; Midwest Peregrine Society; Walton 2003.

[48] Weaver 1988, p.823.

In order to understand the context in which captive breeding and release efforts occurred, it is necessary to recount a bit of the early history of these undertakings. A key event occurred in 1961 with the formation of the North American Falconers Association (NAFA). The creation of NAFA, "and the introduction of an annual national [falconing] field meet in 1962 created a pivotal environment for rapid informal information exchange," according to Jim Enderson, professor at Colorado College and an early NAFA member. The two NAFA publications (a quarterly newsletter, *Hawk Chalk*, and an annual journal) "accelerated learning" about conservation efforts and "reduced the risk of failure" for captive breeding, according to Jim Enderson.[49]

In 1965 a professor at the University of Wisconsin-Madison organized the first international conference on the status of the peregrine. The Madison conference, as it came to be known, galvanized conservation efforts for the peregrine. Funding for the conference came from the National Institutes of Health, the National Audubon Society, the American Museum of Natural History, and the Wisconsin Society for Ornithology. The Department of Interior was asked to contribute but refused.[50] Interior's refusal would come to characterize the Department's lack of commitment to peregrine conservation, especially funding, over subsequent decades. The Madison conference primarily dealt with assessing the status of peregrines in North America, as well as other parts of the world, and examining the factors, primarily DDT, that were thought to have contributed to the population crash of many populations of peregrines and other raptors.

After the conference a number of falconers, who consisted of private citizens as well as those in academia, gathered to decide what should be done to conserve the peregrine and save it from what at the time seemed a distinct possibility—extinction in North America. This small handful of falconers decided to try to breed peregrines in captivity for release to the wild. This task was led by Tom Cade, who would go on to establish and lead the most ambitious captive breeding effort, and an *ad hoc* cadre of falconers.

Another result of the post-conference meeting was the formation of the Raptor Research Foundation, the purpose of which was to disseminate information on raptor conservation,

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[49] Enderson 2005, p.141.

[50] Hickey 1988.

including captive breeding techniques for peregrines and other imperiled species. One early result of the Foundation was the start of the Breeding Project Information Exchange in 1974, a clearinghouse for information on captive breeding. In addition, the Foundation began publishing a newsletter in 1966, which became a peer reviewed journal, *Raptor Research*, in 1972. The Foundation is still in existence, as is the journal, which in 1987 was renamed the *Journal of Raptor Research*. The continued existence of the Foundation and its journal are testament to the critical role played by the Madison conference, and the falconers who attended it, in catalyzing peregrine and raptor conservation efforts. One of the Foundation's first initiatives was to acquire in 1966-67 several pairs of non-imperiled peregrines from coastal British Columbia—where this non-migratory sub-species (Peale's peregrine falcon, or *falco peregrinus pealei*) was essentially unaffected by DDT—and distribute them to a variety of people who were experimenting with captive breeding.[51] Meanwhile, at Cornell University, beginning in 1967 Tom Cade, who was a new member of the faculty and had attended the Madison Conference, began to lobby the university to get involved with his plans for the most ambitious captive breeding effort, a large-scale facility capable of producing in excess of 100 peregrine chicks a year.[52]

Cade's persistence paid off. In 1969 a second peregrine conference was held, this time at Cornell and the conference coincided with a scheduled meeting of the Raptor Research Foundation. Topics discussed revolved primarily around the effects of DDT and other anthropogenic pollutants on reproduction, how to conduct a continent-wide survey, and general problems associated with raptor research.[53] Following the conference, many of the participants signed a petition, drafted by Cade, to the governments of Canada, Mexico and the U.S. requesting the peregrine falcon be protected by national legislation.[54] As a result, in 1970 FWS listed the peregrine under the Endangered Species Conservation Act, the 1969 predecessor to the 1973 ESA.[55] Another result of the conference was the recommendation that a continent-wide

[51] Cade 1988, p.544.

[52] Cade 2003.

[53] Hodson 1971a; Hodson 1971b; Hodson 1971c.

[54] Cade 1971.

[55] Cade and Burnham 2003a.

survey be conducted every five years. Such a survey occurred in 1970, 1975, 1980, and in 1985 for Canada only.[56]

Captive breeding efforts were able to get under way in large part because private falconers donated or loaned their peregrines to the captive breeding facilities. In 1970, Tom Cade founded the Peregrine Fund, a private, non-profit organization dedicated to the restoration of the peregrine falcon in the U.S.[57] The Fund was able to build a large-scale captive breeding facility at Cornell with $125,000 seed money from the IBM Corporation.[58] The Fund experimented with captive breeding techniques over the next several years, which were based in part on efforts by the small handful of falconers who, over the preceding decades, had successfully bred peregrines. These past successes, however, were very small scale—a pair a falcons producing a few young over the course of several years—and unable to produce peregrines consistently. By contrast, the Peregrine Fund's goal was to produce large numbers of peregrines on a consistent basis.

1973 marked a turning point. The Peregrine Fund was able to produce 20 chicks, which represented the first large-scale production of captive peregrines.[59] Also in 1973, Professor James Enderson of Colorado College successfully bred three peregrines.[60] In 1974, with these successes and the knowledge that large-scale production was now possible, the Peregrine Fund, in cooperation with the Colorado Division of Wildlife, established a western breeding facility in Ft. Collins, Colorado.[61] The Peregrine Fund's ability to produce large numbers of peregrines consistently was a truly stunning achievement that few outside a very small group of dedicated falconers thought could be accomplished. Up until this point, peregrines were assumed to be too finicky and high strung to be bred in captivity with any consistency.

The role played by falconers in captive breeding efforts was of paramount importance. "It is highly unlikely that the conservationists' objective [of releasing birds to the wild] could

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[56] Cade and Fyfe 1970; Fyfe et al., 1976; Murphy 1990; White et al., 1990.

[57] Burnham and Cade 1992.

[58] Cade 2003.

[59] Clement 1974, p.30.

[60] Cade 1988, p.543.

[61] Burnham et al., 1988.

have been achieved without the intensely personal and essentially selfish desire of falconers to be able to continue possessing and using Peregrines in their sport, because this drive, more than anything else, was responsible for the successful breeding of Peregrines in captivity," according to Tom Cade.[62] In 1975, the Peregrine Fund established a west coast facility, the Santa Cruz Predatory Bird Research Group (SCPBRG), located at the University of California-Santa Cruz, which soon became an independent organization.[63] In 1984, the Cornell and Ft. Collins facilities were consolidated in Boise, Idaho where the Peregrine Fund has been located since. In 1982, two members of the University of Minnesota faculty, Patrick Redig and Harrison "Bud" Tordoff, started a separate effort to release captive-bred peregrines in the Midwest. Between 1982 and 1999, a total of 960 peregrines produced by the Midwest group were released in the Midwest and parts of the South.[64]

By 1974, with the feasibility of breeding peregrines in captivity firmly established, the next step was to develop techniques for successfully reintroducing the birds to the wild. As with captive breeding, techniques for reestablishing peregrines took several years to perfect.[65] In 1974, the National Audubon Society sponsored and hosted the third peregrine conference, the purpose of which was to map out a strategy for reintroducing peregrines.[66]

Breeding and reintroduction, as well as introduction, efforts proved remarkably successful. Between 1974 and 1999, a total of 6,769 peregrines were released; 1,209 by the Peregrine Fund in the eastern U.S., 960 by the Midwestern group led by the Raptor Center at the University of Minnesota, 2,109 by the Peregrine Fund in the Rocky Mountain region, and 777 by SCPBRG in California and Nevada.[67] The releases of captive bred or fostered birds were

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[62] Cade 1988, p.543.

[63] See: Walton and Thelander 1988; Burnham and Cade 1992; Santa Cruz Predatory Bird Research Group, ND, The History.

[64] Obtained from: Midwest Peregrine Society (www.midwestperegrine.org), searchable online database.

[65] The Peregrine Fund perfected the technique of "hacking"—the release of juvenile falcons from artificial nest sites and providing the birds with food for a few weeks until they are independent—which was initially developed by falconers centuries ago. Hacking was used in all four recovery regions. Two other techniques were used in the Pacific and Rock Mountain regions. One, called fostering, involved replacing eggs in the wild with chicks hatched in captivity. The parents would then raise the chicks as they were their own and the eggs, which may not have hatched due to the presence of pesticides, were then incubated in captive breeding facilities. The resulting chicks could be placed with wild parents or they could be raised in captivity and used for further captive breeding. The second technique, called cross-fostering, involved placing young falcons with prairie falcons. When grown, the peregrines would then seek out other peregrines (Burnham et al., 1988; Walton and Thelander 1988).

[66] Clement 1974.

[67] Peregrine Fund 1999b.

spectacularly successful, accounting for roughly 43%-45% of peregrines extant at the time of delisting in 1999. "Across the continent, this has been a hugely successful effort [to release and conserve peregrines] led by The Peregrine Fund…carried out largely with minimal federal involvement, especially here in the Midwest," according to the Midwest Peregrine Falcon Restoration project. "State conservation departments, universities and colleges, foundations, corporations, and private citizens, provided the money, initiative, labor, and dedication."[68]

The fourth and final peregrine conference was held in 1985 in Sacramento, California. It was hosted by the Peregrine Fund and underwritten by the Raptor Research Foundation, the San Francisco Zoological Society, the National Audubon Society, the Western Foundation of Vertebrate Zoology, Hawk Mountain Sanctuary Association, and the U.S. Army Chemical Systems Laboratory.[69] Whereas the participants at the Madison conference some twenty years earlier were faced with the possible extinction of the peregrine from North America, the Sacramento conference had a distinctly more upbeat mood. The effects of DDT were lessening and large-scale reintroduction and introductions were under way. The peregrine was well on its way back throughout much of the U.S.

The return of the peregrine so rapidly was due almost totally to the efforts of a small number of falconers who were determined to conserve the peregrine. The same dedication did not, however, characterize the FWS's involvement with conservation efforts. "With passage of the Endangered Species Act of 1973, we naturally looked to the U.S. Fish and Wildlife Service (FWS) for major support, but officials in the Office of Endangered Species explained to me that although they liked what we were doing, they only had a small budget and the Peregrine Falcon was not high on their list of priorities—they were more interested in species such as the red wolf, Whooping Crane, Bald Eagle, snail darter, and American alligator," stated Tom Cade.[70] This is astonishing because the peregrine would go on to become one of the poster species used by the FWS and pressure groups to demonstrate the ESA's success.

Even though the mid-1970s was a crucially important time period for peregrine conservation—this was when, due to years of painstaking research, large-scale production of

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[68] Midwest Peregrine Falcon Restoration Project. ND. Project History.

[69] Cade et al., 1988.

[70] Cade 2003, pp.75,77.

peregrines in captivity became a reality, and release techniques were being refined—"the Fish and Wildlife Service came into the act and began to help us and became a big partner and supporter of the program, albeit somewhat reluctantly," stated Tom Cade.[71] "The Endangered Species program people never gave it as high a priority as we thought it deserved. It was always a matter of pushing them along to keep their interest up."[72] This assertion is substantiated by the fact that at the 1974 conference hosted by Audubon, "[David] Marshall [of the FWS Office of Endangered Species] reminded the conferees that the U.S. Fish and Wildlife Service had not yet decided to fund any programs, and could in any event not fund more than a few," according to the official conference proceedings.[73] Another indication of FWS's general lack of interest is that the agency did not designate recovery teams—groups of experts chosen by the FWS, ostensibly to coordinate recovery efforts—for the peregrine in the Eastern and Rocky Mountain/Southwest regions until May of 1975, which was almost two-and-a-half years after the ESA's passage.[74] Yet falconers and university researchers were involved with conservation efforts all along, and the Peregrine Fund initiated experimental releases of captive-bred birds in 1974.[75]

Another sign of the FWS's initial refusal to be involved with peregrine breeding and releases is that much of the federal funding the Peregrine Fund did receive was the result of the Fund circumventing the FWS by appealing directly to Congress through the House Interior Subcommittee on Appropriations. The Fund started doing this in 1981.[76] The Peregrine Fund started to receive federal funding starting in 1975, and then in at least the subsequent two years, during which time the federal government contributed approximately $150,000 that was funneled to the Fund through the National Audubon Society. The balance of the estimated $500,000 needed to run the captive breeding program during these three years was raised by the Peregrine Fund primarily from private (corporations, foundations, and individuals) sources.[77]

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[71] National Wilderness Institute 1990.

[72] National Wilderness Institute 1990.

[73] Clement 1974.

[74] U.S. Fish and Wildlife Service 1975c.

[75] Barclay 1988; Cade 1988.

[76] Cade 2003, p.80.

[77] Plunkett 1978.

There were two reasons why federal funds were initially funneled through Audubon. First, the Peregrine's Fund's efforts were controversial within environmental pressure groups because captive breeding involved falconers and falconry techniques. "[T]hat alone is enough to damn it in the eyes of some of those in our ranks who are super-critical of falconry and the activities of falconers," said Richard Plunkett, an ecologist with Audubon.[78] Due to this opposition, "It was almost certain that the [FWS] Office of Endangered Species would not have been able to commit to funding the program as far back as 1974 had not a leading conservation organization such as National Audubon stepped forward to lend the program its backing and support and to 'run interference,' so to speak, against the operation's critics within the conservation community," added Plunkett. The other reason for Audubon's involvement was that the FWS was bound by rules under which contractors could only be reimbursed for work completed. This was untenable for the Peregrine Fund, which, as a start-up organization simply did not have large amounts of spare cash on hand. On the other hand, Audubon, as a large, wealthy organization, was able to advance the Peregrine Fund money quarterly and then get reimbursed by the Fund a number of months later when the federal government paid the Fund for services rendered.[79]

Despite that private entities and individuals initiated and largely carried out captive breeding and release efforts, in the 1990s and 2000s the FWS tried to revise history by giving the agency primary responsibility for captive breeding and release efforts. The FWS claimed it "initiated" recovery efforts, most notably captive breeding.[80] This assertion is factually incorrect,

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[78] Plunkett 1978, p.62.

[79] Plunkett 1978, p.62.

[80] According to FWS, "The FWS initiated recovery of the peregrine falcon by developing partnerships with the Peregrine Fund the Santa Cruz Predatory Bird Research Group, and the Midwestern Peregrine Recovery Group to breed peregrines for release in unoccupied historical habitat and to augment depressed populations." (Hoffman 1998). "The Service initiated the daunting task of recovering the peregrine falcon by developing partnerships with three non-profit captive-breeding institutions to raise young peregrines for release in unoccupied historical habitat and to augment depressed populations. The three institutions are The Peregrine Fund the Santa Cruz Predatory Bird Research Group, and the Midwestern Peregrine Recovery Group" (U.S. Fish and Wildlife Service ND, The Role of the Endangered Species Act); "One of the most remarkable events of 1998 was the announcement that the peregrine falcon is ready to graduate from the list of endangered and threatened species. The Peregrine Fund the Raptor Center, the Santa Cruz Predatory Bird Research Group, states and many volunteers have worked with the Fish and Wildlife Service over the last two decades to successfully breed and release peregrines into the wild" (U.S. Fish and Wildlife Service 1998e). The FWS also stated, "[I]t is also acknowledged that the peregrine falcon would not be recovered today without the protection of the Act and the Act's provisions which triggered so many effective recovery efforts throughout the range of the species. The Service's peregrine falcon recovery program is unprecedented in the world and in the history of endangered species conservation. Over the last quarter of a century the Service has orchestrated a recovery effort that included the cooperation and dedication of hundreds of federal, state, county, and local agencies and governments, conservation groups, universities, tribes,

highly misleading and blatantly dishonest. A small group of extremely dedicated falconers and people in academia, not the FWS, initiated recovery efforts. Much of the formal framework that devised the framework for returning peregrines to the wild was the result of the 1974 conference organized by the National Audubon Society, not the FWS.[81] And, as Tom Cade noted, the FWS came to the table belatedly and reluctantly. The FWS's efforts to take credit for the peregrine's return are similar to Interior Secretary Babbitt's efforts to do the same (see below under the section titled "Belated Delisting") when delisting occurred in 1999. Efforts by the FWS to claim credit for captive breeding and release programs are all the more absurd because in the mid-1980s the FWS did significant harm to captive breeding efforts through a law enforcement sting operation that was a fiasco (see below under the section titled "Captive Breeding Hindered by Interior Department").

The main thing the FWS did was supply funding for captive breeding and reintroduction efforts. "The ESA fostered cooperation and was a source of funding, especially through Section 6 provisions to the states," according to Cade and his colleague Bill Burnham. "Without the ESA, dollars for endangered species actions in FWS and appropriations for other agencies would have no doubt existed but would have been less. In short, restoration of the Peregrine would have occurred without the ESA of 1973, but probably not as quickly or at the same high level and scope."[82] To which they added, "Although it is hard to prove, we believe the almost universal cooperation witnessed on behalf of the Peregrine would have occurred without the ESA, but probably not at the same high level."[83]

So the main role the ESA played was as a funding mechanism, but the Act was not necessary to carry out captive breeding and release efforts. The reason for this is that falcon enthusiasts, most notably falconers, are extremely dedicated to peregrine conservation. Furthermore, the peregrine is a very charismatic species that appeals to a wide range of people

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private businesses, distinguished scientists, wealthy entrepreneurs and an army of volunteers ranging from young college graduates to retired citizens. Recognizing that everyone had something to give, the Service was able to combine the resources, talents, and expertise that this diverse group had to offer and use it effectively in the recovery of the peregrine falcon. So today, not only are we celebrating the return of the peregrine falcon, we are also celebrating the human effort that made it a reality" (U.S. Fish and Wildlife Service ND, The Role of the Endangered Species Act).

[81] Kiff 1988.

[82] Cade and Burnham 2003b, p.262.

[83] Cade and Burnham 2003b, p.262.

who have a general interest in wildlife conservation and the environment. These factors mean that in all likelihood sufficient funds for captive propagation and release efforts could have been raised without the ESA, as Cade and Burnham note. The Interior Department states ESA funding, "accelerated the pace of recovery."[84] It did in terms of funding. Overall, however, as Cade and Burnham have pointed out, the ESA was detrimental to peregrine conservation.

As with research carried out by the state of Louisiana on the American alligator, research by the Peregrine Fund and other groups involved in captive breeding and releases of the American peregrine falcon became important to the conservation of a number of other raptor species. According to the Fund, "The efforts to save this species resulted in breakthroughs in the field of endangered species research, and scientists from The Peregrine Fund have adapted these techniques for use on other species, including the Bald Eagle, California Condor, Aplomado Falcon, Harpy Eagle, Andean Condor, Philippine Eagle, Mauritius Kestrel, numerous Hawaiian birds, and other species."[85]

INTRODUCTIONS TO NON-NATIVE HABITAT

While the breeding and release of peregrine falcons to the wild garnered much publicity, one aspect of it that went largely unnoticed is that some of these peregrines were not reintroduced to habitat from which they had been extirpated but, rather, introduced. The introduction (i.e., releasing peregrines into habitat they did not historically occupy) of hybrid peregrines (a peregrine that did not historically exist but was created by mixing various sub-species from around the world) along the mid-Atlantic coast and in the Great Plains raises a number of troubling ecological and regulatory issues. The FWS and environmental pressure groups profess to be very concerned about the threats posed to ecosystems and indigenous species by introduced non-native species. But in the case of introduced peregrines this concern went out the window. The FWS, other federal agencies, state wildlife agencies and

[84] "The banning of DDT made the recovery of the peregrine falcon possible. But the protections provided by the Endangered Species Act and the extraordinary partnership efforts of the Service and state wildlife agencies, universities, private ornithological groups, and falcon enthusiasts accelerated the pace of recovery through captive breeding programs, reintroduction efforts and the protection of nest sites during the breeding season" (U.S. Fish and Wildlife Service 1999d). The Interior Department repeated this same statement, verbatim, in 2000 (U.S. Fish and Wildlife Service 2000f).

[85] Peregrine Fund 1999a.

environmental pressure groups decided to compromise their apparent commitment to conserving native species and their habitats in favor of jumping on the American peregrine bandwagon which garnered enormous amounts of publicity.

Historically, the peregrine of the Eastern U.S., known to many as the "rock peregrine," nested primarily in the Appalachian Mountains as well as cliffs and bluffs near some rivers and lakes. While the taxonomy of the rock peregrine was never firmly established, it was always assumed to be a separate sub-species because it was morphologically distinct from other North American peregrines. Sadly, the DDT-induced population crash extirpated the rock peregrine. So in the late 1960s and early 1970s, when Tom Cade and the Peregrine Fund started experimenting with captive breeding, it was generally accepted that if peregrines were to return to the eastern U.S. the birds would have to be hybrids created from other subspecies of peregrines. As it turned out, peregrine breeders used at least seven different subspecies, four of which were not native to North America.[86] This aspect of the captive breeding and release program can be justified given that it would not have been possible to reintroduce the native race of peregrine to the eastern U.S. If peregrines were to return then they had to be non-native.

ECOLOGICAL PROBLEMS

Much less justifiable than releasing non-native hybrid birds was the decision, sanctioned and abetted by the FWS, to introduce peregrines, that is place birds in habitat in which they did not historically nest, along the mid-Atlantic coast of New Jersey, Delaware, Maryland and Virginia. As a result of these introductions, non-native peregrines have eaten least terns, chased piping plovers, killed barn owls, and wounded migrating Arctic peregrine falcons. Piping plovers are listed under the ESA, Arctic peregrines have been listed, and the least tern and barn owl are declining species of concern to bird conservationists. The FWS, the Nature Conservancy and Chesapeake Bay Foundation, all three of which claim to be concerned about the ecological integrity of the Mid-Atlantic salt marshes were directly involved with releasing non-native peregrines. Furthermore, most of the ESA's proponents have touted the "success" of the introduced peregrines even though these organizations also claim to be very concerned about the problem of introduced species negatively impacting ecosystems and native species.

[86] Cade and Burnham 2003b, p.264.

EAST COAST INTRODUCTIONS: The rationale for introducing peregrines along the East Coast was that the initial release efforts in 1974, 1975 and 1976 in native habitat—lowland cliffs, such as those along the Hudson River—failed because the young, inexperienced birds were easy prey for great-horned owls. So the Peregrine Fund, with the permission of the FWS—indeed, all peregrines released were required by law to have FWS issued leg bands and people involved in releasing peregrines were required to have FWS issued permits—shifted strategy in the mid-1970s and decided to release peregrines from nesting towers erected in salt marshes along the mid-Atlantic coast. But salt marshes are flat and almost featureless. Yet peregrines nest on cliffs and steep bluffs, topographic features that are distinctly lacking from salt marshes. Simply based on this logic, it is clear this was not native habitat for the peregrine, but the FWS, state wildlife agencies, Peregrine Fund and environmental pressure groups ignored this because of their desire for funding and media coverage.

Peregrine released in the salt marshes, free from great-horned owls, flourished. By 1999, when delisting occurred, the mid-Atlantic population consisted of 65 pairs that fledged 110 young.[87] Of these, some 28 pairs nested on man-made towers in coastal salt marshes in Virginia, Maryland and New Jersey.[88]

Of the 28 pairs on nesting towers, five were established on four National Wildlife Refuges; three of which are in Virginia and one in New Jersey.[89] An additional National Wildlife Refuge in Virginia was a release site, but falcons did not become established there.[90] Also, The Nature Conservancy allowed releases to take place on two of its properties in coastal Virginia, one of which, Cobb Island, played a key role because it was the first sight in Virginia at which peregrines were released, starting in 1978.[91] Lastly, the Chesapeake Bay Foundation, a private, non-profit organization that bills itself as the foremost advocate of conserving the Chesapeake Bay, allowed peregrines to be released on an island it owns.[92] The FWS, Nature

[87] U.S. Fish and Wildlife Service 1999i, p.45648.

[88] Cade 2003, p.102.

[89] Martin NWR, Virginia (Smith Is.), 2 towers used; Chincoteague NWR, Virginia; Brigantine (Edward B. Forsythe NWR, New Jersey); Fisherman's Island NWR, Virginia (Eastern Shore of Virginia).

[90] Back Bay National Wildlife Refuge.

[91] Center for Conservation Biology, ND, VA Falcons..Cobb Island Hack Site.

[92] Center for Conservation Biology, ND, VA Falcons…Great Fox Island Hack Site.

Conservancy and the Chesapeake Bay Foundation tout themselves as conservators of native biodiversity and opponents of the introduction of non-native species. So it is astounding that these three organizations allowed non-native peregrines that have done damage to salt marsh ecosystem to be released on their lands along the mid-Atlantic coast.

The FWS and others involved in peregrine introductions did not receive much, if any, negative publicity until 1992 when the late Eirik Blom wrote a highly critical article in *Birdwatcher's Digest*, a popular bird watching magazine. Blom was eminently qualified to weigh-in on peregrine introductions, as he was one of the foremost bird and bird watching experts in the U.S., one of the most active birdwatchers on the East Coast, an editor with *Birdwatcher's Digest*, and a co-consultant of second and third editions of the National Geographic Society's *Field Guide to the Birds of North America*, widely regarded at the time as one of the leading bird field guides.

Blom had come to question the introduction of peregrines as a result of many discussions with those who were among the foremost experts on raptor conservation in general and peregrine conservation specifically: people at the Cornell Laboratory of Ornithology, a non-profit bird research and conservation organization affiliated with Cornell University; and those in charge of the three major field research stations for observing and counting raptors migrating down the East Coast in fall—Cape May, New Jersey, Hawk Mountain in Pennsylvania, and Assateague Island, which straddles the Maryland and Virginia border.[93] Cape May and Assateague are of particular importance to peregrine conservation because these are the two locations where peregrines have been captured, banded and released during the couple of months in early fall when they migrate south along the Eastern Seaboard. Banding has provided crucially important data on peregrine population demographics, population numbers, and when and where peregrines migrate. Efforts to band peregrines at Assateague date to the late 1930s, but systematic annual efforts began in 1970.[94] At Cape May, an annual banding program began in 1967, and the Cape May Hawkwatch, a program in which raptors migrating during the fall are systematically identified and counted, has been going since 1976.[95] While Hawk Mountain is not a prime spot

[93] Blom 1992, p.70.

[94] Seegar et al., 2003a.

[95] Schultz 1995; New Jersey Audubon Society, ND.

for migrating peregrines, because it along the Appalachian Mountains and most peregrines migrate along the coast, it is nevertheless an important source of data on migrating raptors because an annual fall migration count has been conducted there since 1935, making it the longest running annual migratory raptor count in the world. Equally impressive as the many decades these three banding and counting programs have been in existence are the people who administer and staff these three sites, as well as the Cornell Lab of Ornithology. Many of the most competent and experienced ornithologists, birdwatchers and other professional staff work for these three sites and Cornell. Therefore the staffs at these four sites are among the most qualified to render opinions on matters pertaining to raptor conservation, such as the introduction of hybrid peregrines to the salt marshes of the Mid-Atlantic U.S.

The peregrine banding and counting programs at Cape May and Assateague have been of particular importance. The people who operate and oversee the trapping, banding and counting programs at Cape May and Assateague have been afforded unparalleled opportunities to observe interactions between migrating Arctic peregrines and resident, non-native American peregrines. Operating the banding programs means that at least one, and likely two or more, teams of banders, with each team consisting of two people, try to trap peregrines from sun-up to sun-down. As such, the banding teams have enormous amounts of time to observe birds in the area, especially the migrating peregrines and other raptors they try to lure in, typically with a live pigeon or dove tethered to a line, and catch with large nets.

When the FWS and the Peregrine Fund initially started introducing peregrines to the salt marshes in the late 1970s, the people in charge of Cape May and Assateague had serious misgivings but kept their mouths shut because of the enormous popularity of the peregrine. Also, many of the very same public agencies that funded peregrine releases also funded research efforts at Cape May and Assateague. "For years now, the juggernaut of the peregrine project has rolled on, drowning out its critics and failures," asserted Eirik Blom.[96] "The migrant raptor count at Cape May is largely funded by the Office of Migratory Bird Management, U.S. Fish and Wildlife Service," according to the FWS.[97] Obviously, the people at the Cape May Bird Observatory, in particular its leader since 1978, Pete Dunne, were aware of this, and as a result

[96] Blom 1993, p.71.

[97] U.S. Fish and Wildlife Service 1993b, p.51044.

they were put in a very difficult position. If they spilled the beans in public about the problems with peregrine introductions, and thereby criticized one of the FWS's glamour initiatives, they might well jeopardize their federal funding. But if they kept quiet, then they would avoid a confrontation with the FWS and likely keep the federal dollars flowing. They chose the latter in the interest of maintaining funding and political harmony, instead of taking a principled stand for ecological integrity and sound conservation.

In the mid-1970s, following failed reintroductions of peregrines to native habitat, the Peregrine Fund, with the FWS's permission, shifted strategy and began introducing peregrines on towers erected in the salt marshes of the mid-Atlantic coast. In 1975 the first large-scale releases of peregrines took place with the introduction of four peregrines at the U.S. Military's Aberdeen Proving Ground on the Chesapeake Bay. This episode provides an example of how peregrine advocates ignored the ecological problems of peregrine introductions and successfully used public relations to further the cause. "Wide and enthusiastic press coverage accompanied the placement of four captive-bred peregrines atop a tower in Maryland last spring," gushed the National Audubon Society in an article for its magazine titled, "That the peregrine shall live."[98] As the organization regarded as the nation's foremost authority on birds and bird conservation, Audubon played an important role in peregrine introduction by giving its explicit approval, as well as its implicit approval by not speaking out against the introductions. "We're trying to reestablish the species, but not the race, because we no longer have the breeding stock from the northeastern United States. That's the best we can do," said Charles Callison, Executive Vice President for Audubon, in 1975, in an attempt to justify the release of peregrines.[99] Note that Callison termed this as "reestablishing," not establishing, which means Callison portrayed the salt marshes as historical habitat. It is stunning that the person who was the second in command at the foremost bird conservation organization was either ignorant of the ecological and historical realities of peregrine introduction, or, as is more likely, he chose to ignore them in order to jump on the peregrine bandwagon.

The Peregrine Fund was also very much a part of engineering positive media coverage. "The initial releases in 1975 attracted much media interest, and to accommodate often disruptive

[98] Zimmerman 1975, p.43.

[99] Zimmerman 1975, p.49.

publicity demands, we decided to focus much of the media attention on a few key hack sites," observed Stan Temple, who at the time was working for the Peregrine Fund and since the mid-1970s has been a professor of wildlife ecology at the University of Wisconsin-Madison. "Scott Ward, who worked on the [Aberdeen] site, had arranged an extravaganza with reporters, top brass form the military, U.S. Fish and Wildlife Service officials, and other cooperators being helicoptered in to the remote island site on the day that four young peregrines were placed in hack box."[100] But the story did not end there. "A few days later, in the middle of the night, the fledgling falcons were rescued minutes before a lightning strike exploded and burned their plywood 'eyrie,'" reported Audubon. "News of the rescue, and the assurance that the peregrine were safe and well, were promptly carried to faraway television viewers and newspaper readers. Indeed, the peregrine seems to have surpassed the whooping crane as a symbol of Americans' concern for environmental degradation, and the embodiment of their hope for its cure."[101] That the peregrine was being *introduced* to the coastal salt marshes simply did not register with the media or general public because the Peregrine Fund and FWS apparently did not disclose this to them. And the media, with the urging of peregrine advocates, turned the peregrine into a totem of environmental conservation that was essentially immune from criticism.

The reality on the ground, however, over the ensuing years was far different and more troubling than the rosy picture painted with lies and distortions by peregrine advocates and eagerly lapped-up by their willing dupes in the media eager for a sensationalistic story before flitting off to cover another story. What leaders of the four ornithological research sites—Cape May, Assateague, Hawk Mountain, and the Cornell Lab—told Eirik Blom was very troubling. "The people who have spent the past 20 years banding *migrant* peregrines along the Atlantic Coast report that a steadily growing number of the young birds they catch have puncture wounds and torn crops," according to Blom. "These injuries are being inflicted by resident peregrines, the introduced tower birds, who attack the migrants. Many banders are mad as hell about the placement of peregrines in coastal towers."[102]

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[100] Temple 2003.

[101] Zimmerman 1975, p.43.

[102] Blom 1992, pp.73-74.

Leaders of efforts to study migrating peregrines along the mid-Atlantic coast were very angry that an aggressive predator like the peregrine had purposefully been introduced into an ecosystem that was already under enormous stress from human-induced habitat destruction and degradation. Those at Hawk Mountain were equally upset, but because their site was not of primary importance to the peregrine, they did not have the direct experience of their compatriots on the coast. "[W]e have anecdotal evidence about peregrines eating least terms in New Jersey, chasing nesting piping plovers in Maryland and Virginia, [and] killing barn owls everywhere," stated Blom.[103]

Pete Dunne, the leading authority at the Cape May Bird Observatory referred to the problem of introduced peregrines, albeit somewhat elliptically. "IF you put Peregrines out onto open salt marsh, THEN there will be no Great Horned Owls to eat them. BUT Peregrines that are introduced into coastal marshes eat (among other things) Least Terns—and Least Terms happen to be an endangered species in New Jersey," Dunne stated. "No, I think it's about time that we spend just a little more effort assessing impact before the fact. All of man's actions affect the environment, well intentioned or not, and all too often the effects are only discovered later."[104] This cryptic statement was as far as Dunne was willing to go publicly, likely out of concern for jeopardizing his funding from the FWS and other public agencies that supported peregrine introduction.

At Assateague Island there are instances in which introduced, resident peregrines attacked migrating peregrines. In order to grasp this issue and problems posed by the non-native resident peregrines, it is necessary to understand a little bit about the difference in migratory patterns between the resident, non-native peregrines and the migratory peregrines, most of which are not hybrids. Resident peregrines anywhere tend to be highly territorial and aggressive towards other peregrines, but this problem is compounded in the case of the introduced birds on nesting towers. The introduced birds are essentially non-migratory because they live in a relatively temperate environment with abundant, year-round sources of birds on which to prey. In those cases that these introduced birds do migrate away from their nesting towers, it is usually not very far and it usually does not occur until the onset of cold weather in late October and early November. By this time of the year, virtually all of the migrating peregrines have passed

[103] Blom 1992, p.73.

[104] Dunne 1986, p.29.

through the mid-Atlantic coast because almost all of these peregrines are of the Arctic, or *tundrius*, subspecies and live in Greenland and the far north of Canada and perhaps Alaska. Due to the onset of cold weather, Arctic peregrines must vacate their breeding grounds in late August and early-to-mid September.

Due to these differences in climate and migratory patterns, the resident non-native peregrines are still occupying their territories when the migrating *tundrius* peregrines are migrating down the coast and passing the territorial resident peregrines. Migration is an especially tenuous time for peregrines, or any bird for that matter, because they require enormous amounts of energy to migrate successfully. Failure to eat enough food can result in death, either during migration or after arriving at wintering or breeding grounds so weakened that the birds succumb to predators, disease, or any number of potential threats. The imperative for birds to eat enough food during migration is especially acute for birds that nest in the northern latitudes, like the *tundrius* peregrine, because, in a somewhat counterintuitive pattern, they migrate the farthest south. *Tundrius* peregrines winter in Central and South America, some as far south as Peru and Argentina. Therefore, any disruption to Arctic peregrines during migration, especially something that would prevent food from being obtained or that would cause injury, such as an attack from another peregrine, could very well prove fatal.

The result of the FWS, Peregrine Fund and state wildlife agencies introducing and establishing resident peregrines along the migration route of both the *tundrius* peregrine, and increasing numbers of *anatum* peregrines that have become established in urban areas as well as mountains, has been predictable. In the late summer and early fall, these migratory *tundrius* and *anatum* peregrines are forced to fly an increasingly hazardous gantlet of resident non-native peregrines along the Mid-Atlantic Coast. Throughout the 1970s, 80s and 90s, as more artificial nest towers were erected and more non-native peregrines release, the peril increased for migrant peregrines.

The result of establishing non-native peregrines along the mid-Atlantic coast has been sadly predictable. Migrating peregrines flying this gantlet have been attacked by the resident non-native peregrines, and this has been repeatedly observed by the people running the peregrine banding station at Assateague Island. According to an article on an attack of a migratory peregrine by a resident peregrine written by the Chincoteague Natural History Association, a

non-profit organization founded in partnership with the FWS in order to promote conservation of Assateague Island and the surrounding region:

> "The bird was captured at the Refuge on October 21, 1996. The female [peregrine] was found in Refuge waters and was underweight, had lice and a large laceration on her back, impairing her ability to fly and making her vulnerable to predation. Biologists theorized that she had been attacked and forced into the water by resident peregrine falcons. Although the laceration healed, scar tissue and secondary complications held up her release until this time."[105]

The release took place on February 26, 1998, a year-and-a-third after the injured peregrine was captured. The longer an animal is in captivity, the less chance there is that it will be able to fend for itself successfully in the wild again because it hunting skills have deteriorated. So this peregrine's prospects were tenuous. This attack was not, however, an isolated occurrence on Assateague, according to the following account from 2003 by the Assateague Island Peregrine Falcon Survey:

> "In 1980 captive-bred peregrines of mixed subspecies were first released from a 'hack tower', a tall platform constructed on the Wash Flats [portion of Assateague Island]. In 1981 a pair took up residence, produced young, and remained on territory during the fall migration of tundra peregrines. Since that time residents have been present during each survey and we have witnessed aggression towards migrants in varying degrees. Other individuals of the newly established eastern race have at times taken territories on the north and south ends of the island, and have been observed defending these territories. It has been clear that the artificial establishment of this coastal population has resulted in many agonistic encounters for migratory peregrines in the autumn. In 2003 an adult female was present during parts of most days on the Wash Flats tower. She proved to be the most highly territorial individual present in many years. We observed her in the process of ejecting at least 18 migrant peregrines that were attempting to utilize the habitat, and she even extended her aggression to at least one hapless Cooper's hawk." [106]

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[105] Tracy 1998.

[106] Seegar et al., 2003b.

All of these instances of introduced peregrines attacking, wounding, and in some cases killing native bird species are almost assuredly only the tip of the proverbial iceberg. The salt marshes and beaches of the mid-Atlantic U.S. are a vast ecosystem, covering millions of acres. If introduced peregrines are observed attacking plovers, migrating peregrines and a cooper's hawk, eating least terns and killing barn owls, then it is only logical to conclude that many more such instances are occurring elsewhere away from human eyes.

Eirik Blom the leading critic of introducing peregrines to the salt marshes provided a broader perspective. "[W]e rushed in, cheered by environmentalists and politicians who would have screamed if we had suggesting introducing feral cats into the same marshes," lamented Eirik Blom. "But, if you look at it from the point of view of the marsh, there isn't any difference between the peregrine and the cat."[107]

In response to his critique of peregrine introduction, Eirik Blom was castigated by some of those involved in the peregrine captive breeding and release efforts, most notably Tom Cade of the Peregrine Fund. In an attempt to justify the release of peregrines along the mid-Atlantic coast, Cade and colleague Tom Barclay cited two pieces of literature they claimed proved the peregrine historically nested in this region.[108] But the two pieces of literature are invalid because they utterly fail to prove what Cade and Barclay claim. "The entire historical justification for putting nesting towers in coastal marshes rests on one discredited, unsupported, hearsay report and on one report that appears to have come from a non-coastal area," wrote Blom in his reply to Cade and Barclay. "All the rest is speculation or wishful thinking that flies in the face of the overwhelming available evidence."[109]

As Blom pointed out, one of the publications cited by Cade and Barclay was by the New Jersey State Geologist and published in 1890 but contained no specific evidence, only a notation that the peregrine "'has been found nesting in Cape May County.'" To which Blom responded, "Raptor biologists at the Cape May Bird Observatory have long treated the report as erroneous, noting other ornithological errors in the publication, including the completely unbelievable

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[107] Blom 1992, p.73.

[108] Barclay 1988; Cade and Barclay 1993, pp.64-67,

[109] Blom 1993, p.70.

record of nesting rough-legged hawks."[110] The rough-legged hawk nests in the tundra and boreal forests of Alaska and northern Canada, and the southern-most confirmed breeding occurrence is central Newfoundland, which is some 1,200 miles to the north of Cape May New Jersey.

The other publication cited by Cade and Barclay was published in 1946, and the author of it reported one or two nests of peregrines well inland on the "necks" of southeastern Virginia (the region along the western shore of Chesapeake Bay created by several rivers flowing into the bay). However, when the author purportedly saw the peregrines he was in Williamsburg, Virginia, which is miles from the necks region. The author's reported observation of peregrines in the necks region, which was "made without explanation or attribution, that the peregrines had been nesting in the area 'for at least 20 years,' is apparently based on hearsay, as Jones [the author] did not move to eastern Virginia until the mid-1940s," according to Eirik Blom.[111] In addition, as Blom noted, the mid-Atlantic coastal region, from New Jersey to Virginia, "have been subjected to intense ornithological research and investigation. Much of the research, unlike the two references cited by Cade and Barclay, was supported by extensive collecting of eggs, nests, and specimens. Nowhere in this body of literature is there evidence for breeding by peregrines in coastal areas."[112] Furthermore, the Mid-Atlantic salt marsh ecosystem is "some of the flattest land on earth," according to Blom and therefore devoid of the cliffs needed by peregrines for nesting.[113]

Even though peregrine advocates tried dishonestly to justify the introduction of peregrines to the salt marshes, cracks appeared in the façade. In the mid-to-late 1970s the FWS admitted twice, albeit indirectly and in all likelihood unwittingly, that the Atlantic Coast was not part of the peregrine's historical nesting habitat. "Local regions that look good for establishing nucleus populations include:…Chesapeake Bay and the Atlantic Coast from New Jersey into the Carolinas, where there are no natural eyries but where there is a good food supply," stated the FWS in a 1975 press release announcing the start of efforts to release peregrines along the East

[110] Blom 1993, p.69.

[111] Blom 1993, pp.69-70.

[112] Blom 1993, p.70.

[113] Blom 1992, p.72.

Coast.[114] Note that the FWS characterized the Atlantic Coast as containing no "natural eyries", or nesting sites.

The second instance the FWS let slip that peregrines were not indigenous to the mid-Atlantic coast occurred in the 1979 recovery plan for the peregrine in the Eastern U.S. The recovery plan has a map titled "Former Breeding Distribution of the Peregrine Falcon" that contains only a few identified breeding sites along the mid-Atlantic coast. These sites are associated with manmade structures in the New York City region or along the Chesapeake Bay, such as bridges and buildings in urban areas, not the salt marsh nesting towers erected in the salt marshes.[115] Even so, the recovery plan identified the Mid-Atlantic coast as one of four regions in which releases of captive bred birds was going to occur. The recovery plan also contains a map of the Mid-Atlantic region showing some ten "potential sites" for releases that do not appear on the map of the peregrine's former breeding distribution, which is another indication that the FWS knew the salt marshes were not native nesting habitat.[116] In 1991 the revised recovery plan reconfirmed that the salt marshes were non-native habitat because the plan did not identify the Mid-Atlantic region as being in the peregrine's historic breeding range even though the mid-Atlantic continued to be identified as one of the recovery regions in the eastern U.S.

The upshot of the analysis of all these different sources of information on the peregrine's historic nesting range in the eastern U.S. is indisputable. As is clear from Eirik Blom's analysis and the two recovery plans, there is no credible evidence the peregrine ever nested historically along the mid-Atlantic coast. All other assertions are either the result of lies, distortions or ignorance.

In a dishonest attempt to obscure the disastrous introduction of peregrines to the salt marshes, peregrine advocates have resorted to historical revisionism. They have claimed that releases at the coastal towers were done with the belief that the peregrines and their progeny would disperse inland to native habitat on cliffs along rivers and the Appalachian Mountains. "Also, our tactical assumption that falcons released from towers in the coastal salt marshes, and the progeny of established pairs there, would disperse to settle on inland cliffs has proved to be

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[114] U.S. Fish and Wildlife Service 1975d.

[115] U.S. Fish and Wildlife Service 1979q, p.3.

[116] U.S. Fish and Wildlife Service 1979q, p.17.

incorrect, as these birds have shown little inclination to move away from the coast, or else those that do disperse inland succumb to owls," claimed Tom Cade and Tom Barclay in 2000.[117] This claim is as disingenuous as it is delusional.

The phenomenon of animals returning to their place of birth is called philopatry, and raptor biologists have long known that peregrines exhibit philopatry very strongly. Cade and Barclay knew this and have even admitted as much. "Releases from specially constructed towers were initially designed to facilitate behavioral studies and to explore the possibility of modifying the peregrine's usual preferences for habitat and nest-sites," they stated in 1983. "It was hypothesized that if peregrines were raised and released from such structures they would become 'imprinted' to them and to the local area and that they would return to a similar structure and habitat for breeding."[118] Cade made a similar statement in 1985. "In the wild, Peregrines are known to have a strong tendency to home back to their natal territory, no matter how far they may travel in the post-breeding period, and we have been counting on this strong philopatry to bring our released falcons back to the hack-sites, where we hoped they would settle to nest. We have not been disappointed, as some Peregrines began returning the very next year following the first releases, and the number has been building up slowly each year."[119] Barclay echoed much of this in 1988; "We believed that a minimum population of 20 pairs could be self-maintaining and that it could be the nucleus of a founding population whose offspring might disperse and eventually begin to colonize nearby cliff sites."[120] Even the FWS, normally a couple of steps behind on peregrine conservation, knew in 1975 the reality of releasing a bird with a strong philopatric instinct. "The working hypothesis is that these young birds will develop a lasting fixation to the site, or at least to the immediate area where they are hacked, and that survivors will return to the same places to breed at the age of two or three years," stated the FWS in 1975.[121]

As is clear from the very statements of the architects of efforts to release peregrines to the wild, the intention of the introduction in the salt marshes was to have a "nucleus" of breeding

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[117] Cade et al., 2000.

[118] Barclay and Cade 1983, p.6.

[119] Cade 1985a, p.336.

[120] Barclay 1988, p.552.

[121] U.S. Fish and Wildlife Service 1975d.

pairs on the nesting towers, which clearly means that these pairs would be a permanent, or at the very least long-term, fixture in the marshes. Despite this, Cade and Barclay made a crude and dishonest attempt at historical revisionism in 2000 by trying to claim the purpose of these releases was so peregrines would disperse to native habitat in the Appalachian Mountains.

MIDWEST INTRODUCTIONS: Another aspect of peregrine introduction that also deserves attention, but which is much less problematic than what occurred along the Mid-Atlantic coast, is the introduction of peregrines in the Midwest and Great Plains. Introducing peregrines to this region is not as problematic because the peregrines have been largely confined to urbanized areas, which by their very nature have been subjected to massive anthropogenic habitat destruction and degradation. So the addition of a few peregrines has had a negligible impact. But some of the Midwest peregrines were released into native habitat from which they disappeared following the DDT-induced population crash.

The region of the Upper Mississippi Valley and Western Great Lakes historically contained an estimated fifty pairs of peregrines before the DDT-induced population crash: thirty pairs in an approximately 160 mile stretch of the Mississippi River and tributaries from Red Wing, Minnesota, which is south of Minneapolis-St. Paul, to Dubuque Iowa; a few pairs in the Boundary Waters Canoe Area of northern-most Minnesota, the Door Peninsula of Wisconsin, as well as some spots in Michigan; and six or so pairs along the Minnesota's northern shore of Lake Superior.[122] When delisting occurred in 1999, there were forty-four pairs in the Midwest, but the peregrine's range had significantly expanded to include primarily urban regions in states they existed historically, as well as cities in a number of other Midwestern states to which peregrines had been introduced.[123]

The decision to introduce peregrines to Midwestern cities was initially made for the same reason peregrines were introduced to the Mid-Atlantic coast; great-horned owls preyed on the initial peregrines released in the historic range. Releases along the Mississippi River in Wisconsin in 1976 and 1977 largely failed due predation by great horned owls. As a result, peregrine releases were halted and not resumed until 1982 when a plan was formulated to deal

[122] Redig and Tordoff 1985.

[123] U.S. Fish and Wildlfie Service 1999i, p.46548.

with the owl problem, which included releasing peregrines in historic habitat where owls were not as prevalent, shooting owls near release sites, and releasing peregrines into urban environments where owls did not live.[124] Peregrines released in urban areas became the primary focus of Midwest releases. From 1987-1998, 56% of the region's pairs of peregrines nested on buildings, followed in descending order by cliffs (23%), smokestacks (11%), and bridges (9%).[125]

Due to the peregrine's popularity, many states and municipalities wanted to get in on the release program. And as a result, peregrines were released far from their historic range, including: Sioux Falls, South Dakota; Omaha, Nebraska, Columbus and Akron, Ohio; Madison, Wisconsin; Kansas City, Missouri; Junction City, Kansas; Detroit and Grand Rapids, Michigan; Lexington and Burgin, Kentucky; Indianapolis, Fort Wayne, Muncie, South Bend, and Evansville, Indiana; Des Moines and Cedar Rapids, Iowa; Birmingham, Alabama; Little Rock and Newark, Arkansas; and Chicago, Illinois. One aspect of peregrine releases in the Midwest that provides an indication of the political nature of the project is how many sites also happened to be the capital of their respective states (Des Moines, Madison, Little Rock, Indianapolis, and Columbus). States provided significant portions of the funding for releases so state wildlife agencies felt the need to justify these expenditures to the legislators who appropriated the funds. And what better way to do so than to release peregrines in the capitol city where legislators could observe the birds and hopefully garner publicity and a good photo opportunity.

There was, however, a benefit, albeit unanticipated, of introducing peregrines so widely across the Midwest. In 2000, peregrines nested successfully on cliffs along the upper Mississippi River for the first time in many decades when five pairs set up territories; two pairs each in Wisconsin and Minnesota, and one pair in Iowa. The two founders of the Midwest Peregrine Falcon Restoration Program, Bud Tordoff and Pat Redig of the University of Minnesota, attribute this success with two factors: large numbers of peregrines along the river dispersing from a combination of release sites and nesting pairs on power plant smokestacks; and the dispersal of peregrines from urban areas, where available nesting territories were occupied, in search of unoccupied nesting sites.[126] However, this same dispersal effect could also have been

[124] Redig and Tordoff 1985.

[125] Tordoff and Redig 2003, p.180.

[126] Tordoff and Redig 2003, p.182.

achieved by releasing more peregrines in urban areas near historic habitat, such as Minneapolis-St. Paul, as well as along the Mississippi River. "We were probably too impressed with the potential of owl predation," Tordoff and Redig admirably admit.[127] As owls grew accustomed to increasing numbers of peregrines along the river and peregrines learned how to defend themselves, owl predation seems to have declined.

At the time the FWS the American peregrine in 1999, the total price tag for releasing peregrines in the Midwest was $2,970,000, or about $2,500 per peregrine. "By any standard, this is a lot of money but still only about a tenth of the cost of one F-16 fighter plane, currently selling new for $28,000,000," according to Tordoff and Redig.[128] While this is certainly true, it is not a terribly relevant analogy because it mixes apples and oranges. A more germane comparison would have been how much conservation value could have been obtained for $847,500—the cost of questionable releases in the Midwest, which is estimated very conservatively at 339 falcons—through initiatives such as land purchase or leasing, public education, research, etc.[129] The expenditure of significant amounts of money on introducing peregrines to environments where they never existed and were not even remotely near where they existed diverted valuable conservation dollars away from other deserving causes.

Eirik Blom's critique of peregrine introductions also drew a critical response from Tordoff and Redig. "The release of peregrines in several corn-belt cities far from any traditional nesting places is, of course, a deliberate effort to get pairs established in those cities. Blom seems to dislike this, but we see no reason why the folks in those cities should not have peregrines to enjoy, if they choose to, and we have helped the various state DNRs [Departments of Natural Resources] in the releases."[130] To which Blom replied. "Most disturbing is the contention in both responses that peregrines are special birds. Cade and Barclay argue that no scientific defense is necessary for the coastal towers because peregrines are top-of-the-line predators. Tordoff contends that placing peregrines in new areas in the Midwest is justified because people should have a right to enjoy the birds there. These arguments support my

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[127] Tordoff and Redig 2003, p.182.

[128] Tordoff and Redig 2003, p.173.

[129] Midwest Peregrine Restoration project, searchable online database.

[130] Tordoff and Redig 1993, p.69.

contention that aspects of the [release] project were designed to benefit people—peregrine fans and falconers—rather than birds. I stand by my original statements—the soul of a peregrine weighs no more than the soul of a least tern or piping plover, and endangered species restoration is about birds, not people."[131]

NON-NATIVE SPECIES: The FWS and environmental pressure groups constantly warn against the dangers non-native, otherwise known as exotic or invasive, species because the serious damage they can cause to the health of ecosystems. But the astounding aspect of the introduction of peregrines to the Mid-Atlantic salt marshes is the FWS and pressure groups tout this as a success of the Endangered Species Act. An examination of the broader issue of non-native species reveals the depths of ESA proponents' duplicity; on the one hand professing concern about non-native species, but on the other hand trumpeting the purposeful introduction of non-native peregrine falcons to the Mid-Atlantic coast as great success story.

The ESA's proponents profess to be concerned about the threat posed to native species and ecosystems by non-native species. The FWS has an "Invasive Species Program,"[132] the Nature Conservancy, until 2009, had a "Global Invasive Species Initiative,"[133] Defenders of Wildlife released a report titled "Endangered Ecosystems: A Status Report on America's Vanishing Habitat and Wildlife,"[134] and many of the organizations that trumpet the peregrine as one of the ESA's success stories are also apparently concerned about invasive species.[135] "The ESA is a critically important law because it requires developers, politicians, biologists, industrialists—all citizens—to consider how their actions affect species and associated ecosystems," assert William Snape and Robert Ferris, Defenders of Wildlife's then Vice President for Law and Species Conservation Director, respectively.[136] In 1996 Environmental

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[131] Blom 1993, p.70.

[132] U.S. Fish and Wildlife Service ND, Invasive Species Program.

[133] The Nature Conservancy, ND, The Global Invasive Species Initiative.

[134] Noss and Peters 1995.

[135] Defenders of Wildlife has an "Invasive Species" initiative (http://www.defenders.org/programs_and_policy/science_and_economics/invasives/index.php); the Union of Concerned Scientists focuses on invasive species as part of its Sound Science Initiative (http://www.ucsusa.org/ssi/invasive-species/ 7); National Parks Conservation Asso,ciation also mentions invasive species (http://www.npca.org/about-us/center-for-park-research/invasive.html).

136 Snape and Ferris 1995, p.4.

Defense Fund released a report on how to reform the ESA, and one suggestion addressed ecosystem conservation. "Build a scientifically-sound approach for protecting ecosystems and assemblages of species within the overall framework of the act. The goal should be to conserve entire assemblages of species—an ecosystem approach to conservation."[137] Of course, the irony that Environmental Defense Fund promoted the something that was not a scientifically-sound approach to conserving ecosystems—the introduction of peregrines to the salt marshes—was likely lost on the authors of the report—which included Michael Bean likely the ESA's foremost expert, David Wilcove, currently a professor at Princeton University.

A number of other pressure groups also claim to be concerned about ecosystem conservation. The National Wildlife Federation has also focused on invasive species, and in 2003 publishing an article about invasive species living in National Wildlife Refuges, titled, "A Plague of Aliens."[138] "Why do species become endangered?" the Federation asked: "Invasive species," among the other answers. "The consequences of invasive species for the economy and environment are profound. Exotic invaders comprise *the second largest threat* to global biodiversity after habitat loss, threatening 46 percent of species listed under the Endangered Species Act."[139] And the American Land Alliance states, "Invasive species and climate change are also serious threats. Condemning other species to extinction is not just irresponsible — it also threatens ecosystems and the web-of-life that comprise our natural resource base and ecological foundations, and that enrich our lives."[140] Somehow these groups, despite their apparent commitment to raising the alarm about the threat posed to ecosystems by non-native species, overlooked the introduction of peregrines to the salt marshes of the Mid-Atlantic coast, which garnered enormous amounts of attention from the media, federal government, state wildlife agencies, and these very same groups.

The National Audubon Society, among all pressure groups, has led the charge against invasive species. Audubon launched an "invasive species campaign" to combat the harm wrought by non-native species. "Audubon's invasive species campaign is grounded in sound

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[137] Wilcove et al., 1996, p.12.

[138] Tangley 2003.

[139] National Wildlife Federation 2005, p.1.

[140] American Lands Alliance, ND.

science," according to the Society. "Priority sites for invasive species control reflect Audubon's dedication to protecting the threatened birds identified on our science-based WatchList as well as the need to control invasive species on Important Bird Areas identified by Audubon's scientists."[141]

Audubon's WatchList is the latter day incarnation of the Blue List, a compilation of birds in jeopardy, but not necessarily those listed under federal endangered species legislation. Audubon published the Blue List from 1971-1986, after Audubon joined Partners in Flight, a coalition of governmental and non-governmental organizations. In 1996, on behalf Partners in Flight, Audubon published the first WatchList, the latest version of which was published in 2007 in conjunction with the American Bird Conservancy, another bird conservation organization.

According to the latest version of the 2007 WatchList, "Audubon and the America Bird Conservancy have joined forces to rally conservationists around America's most imperiled birds." Audubon and the Bird Conservancy elaborate: "WatchList 2007 lays the groundwork for an "industry standard" to guide conservation priorities among conservation organizations and government agencies."[142] In addition to the list of imperiled bird, the WatchList website contains a section titled, "What You Can Do," that consists of action items for the common citizen, one of which is; "**In the 2007 WatchList, people are urged to "Combat Invasive Species:** Invasive non-native species disrupt the delicate ecological balance that sustains birds and other wildlife. Federal, regional, state, and local regulations are needed to combat this growing environmental threat."[143] The website also has a section on Legislative Priorities, three of which are, "Protect Endangered Species," "Support Wetlands," and "Fund Ecosystem Restoration."[144]

The irony, of course, is that by supporting the release of invasive peregrines to the salt marshes of the Mid-Atlantic coast, Audubon is working against the very initiatives it advocates, including protecting endangered species, wetlands and ecosystems. The dimensions of this can be grasped by the number of birds on the WatchList that have been, or very well could have been, preyed on or attacked by peregrine falcons introduced to the salt marshes.

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[141] National Audubon Society ND, Stop the "Alien" Attack.

[142] National Audubon Society 2007a.

[143] National Audubon Society 2007g.

[144] National Audubon Society 2007d.

One of the birds on the 2007 WatchList is the piping plover, the same species that has been harassed by introduced peregrine falcons. Audubon considers the plover's plight to be so dire that it is one of only twenty species identified as "Priority Continental Species." As Audubon notes; "The following 20 WatchList 2007 "red" list species are among the most imperiled bird species that regularly breed in the continental U.S. They need our help simply to survive amid a convergence of environmental challenges, including habitat loss, invasive species and global warming."[145] As for the plover, Audubon paints an ominous picture. "Habitat destruction, human disturbance, and predation continue to be the primary threats to Piping Plovers. Nests and young can be destroyed by unrestricted off-road vehicles, beach-goers, and unleashed pets."[146] Audubon fails to mention unleashed non-native peregrines.

The least tern is also on the WatchList. It is a "red" species, which means, "species in this category are declining rapidly and/or have very small populations or limited ranges, and face major conservation threats. These typically are species of global conservation concern."[147] The least tern's profile states: "Least Terns have the unfortunate distinction among North American terns of being classified for protection throughout much of their North American range. The Least Tern is a USFWS Bird of Conservation Concern, a continentally threatened species, and classified as "Threatened," "Endangered," or a "species of concern" in most states."[148] Due to its preference for nesting on beaches, "recreational, industrial, and residential development in coastal breeding areas continues to diminish many populations," according to the WatchList.[149]

Eleven other species of shorebirds on the WatchList also have to run the gantlet of introduce peregrines because they breed in, or migrate through, the coastal salt marshes and beaches of the Mid-Atlantic coast. One of the species, the buff-breasted sandpiper is in the "red" category. The rest are "yellow," which "includes species that are either declining or rare. These typically are species of national conservation concern." These species include the roseate tern, a close relative of the least tern, and nine species of sandpipers (American golden plover,

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[145] National Audubon Society 2007f.

[146] National Audubon Society 2007e.

[147] National Audubon Society 2007a.

[148] National Audubon Society 2007c.

[149] National Audubon Society 2007c.

Hudsonian godwit, marbled godwit, red knot, sanderling, semipalmated sandpiper, stilt sandpiper, western sandpiper, and Wilson's plover).

In 2003 Audubon launched a major campaign aimed at combating invasive species, complete with a report that put the spotlight on national wildlife refuges. "The National Wildlife Refuge system contains some of the nation's most valuable bird and wildlife habitat," states Audubon. "Particularly important to migratory birds is the System's extensive wetlands habitat," and "[a]ccording to the Fish and Wildlife Service, invasive species have become the single greatest threat to the Refuge system, causing 'widespread habitat destruction' and 'contributing significantly to the decline of trust species.'" Such wetland habitat, of course, includes the Mid-Atlantic salt marshes in which nesting peregrines are an invasive species. According to Audubon, "[m]ore than 250 wildlife refuges have been infested by invasive species that choke out, devour, and destroy native birds, wildlife, and their habitat."[150] Indeed, as Audubon notes, "more than one-quarter of North American bird species are in trouble or decline," and Audubon is able to determine this from the WatchList it maintains.[151] In response to this dire situation, "Audubon recommends a strategic, science-based approach to managing the threat invasive species pose to America's birds and wildlife," including the expenditure of large sums of federal funds, and, most particularly, the passage of federal legislation to combat invasive species.[152]

When Audubon launched its campaign and released the report, the Society also issued a press release. "Invasive species are like a buzz-saw cutting through some of America's most valuable bird and wildlife habitat," stated Robert Perciasepe, Audubon's Senior Vice President for Public Policy. "If invasive species are not controlled, they will continue to wreak havoc on America's already declining birds and the natural places they inhabit."[153] Perciasepe's knowledge about wildlife issues is very suspect because he strongly implied the bald eagle would be extinct without the ESA and a number of species found in California, including the peregrine falcon and gray whale, represent ESA success stories. While Audubon has focused its invasive species campaign on birds and National Wildlife Refuges, the organization fails to acknowledge

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[150] National Audubon Society 2003a.

[151] National Audubon Society 2003a.

[152] National Audubon Society 2003a.

[153] National Audubon Society 2003b.

that not only are the nesting peregrines along the Mid-Atlantic and invasive but that the FWS purposely introduced peregrines to four Refuges along the Mid-Atlantic coast in New Jersey and Virginia.[154]

There are a number of ironies about Audubon and other pressure groups taking up the cause of invasive species when almost all of them have touted invasive peregrine falcons on artificial nesting towers in the salt marshes of the Mid-Atlantic coast as an ESA success story. The Endangered Species Coalition and Environmental Defense Fund claim the introduced peregrines are evidence of the ESA's "Record of Success" in publications that contain lists of purported ESA success stories.[155] "Virginia was the site of the first peregrine falcons to be reintroduced to the Atlantic coast; 11 pairs of peregrines nested in the state last year," according to the Endangered Species Coalition.[156] Similarly, Environmental Defense Fund stated, "In 1978, Virginia's barrier islands were the site of the first peregrine falcon reintroduction on the Atlantic coast."[157] Despite these claims by supposed experts on the ESA, placing peregrines on coastal nesting towers was an *introduction*, not a *reintroduction*. Claiming the introduction of peregrines to the Atlantic coast as a success is a farce, especially given these groups' purported concern about the integrity of ecosystems and about non-native species being a threat to biodiversity.

Beyond the tawdry mendacity of these pressure groups' stance on invasive species vis-à-vis non-native peregrines is the larger context of the considerable threat posed to native flora and fauna by invasive species. A study published in 1998 concluded that non-native species were the second leading threat to imperiled species in the U.S. (which includes species listed under the ESA as well as other federal and non-federal lists of species). Habitat degradation jeopardizes

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[154] Martin NWR, Virginia (Smith Is.),2 towers used; Chincoteague NWR, Virginia; Brigantine (Edward B. Forsythe NWR, New Jersey); Fisherman's Island NWR, Virginia (Eastern Shore of Virginia).

[155] "The first peregrine falcons to nest east of the Mississippi since the 1960s nested in New Jersey in 1979; by 1986, 14 nesting pairs were in the state" (Environmental Defense Fund 1992, p.9). "The success of the Endangered Species Act can be found in every state," claims Michael Bean of Environmental Defense. As proof he asserted, "Peregrine falcons, which had ceased to nest anywhere east of the Mississippi River by the 1960s, resumed nesting in New Jersey in 1979 and by 1986 there were 14 nesting pairs in the state" (Bean 1992, p.81). Environmental Defense Fund. 1994. *The Endangered Species Act: A Record of Success*. Washington, D.C., 1994; Michael Bean and Margaret McMillan. *The Endangered Species Act: A Record of Successes*. Environmental Defense Fund:Washington, D.C., November, 1996; Margaret McMillan. *The Endangered Species Act at Twenty-Five Years: Selected Species Improving in Status Under the Endangered Species Act*. Environmental Defense Fund: Washington, D.C., December, 1998.

[156] Endangered Species Coalition 1992, p.13.

[157] Bean and McMillan 1996, p.25.

85% of imperiled species, followed by non-native species at 49% (these two causes sum to more than 100% because the categories are not exclusive and hence a species can suffer from both).[158] In yet another irony about peregrine introduction in general, the study's lead author is David Wilcove, who at the time worked for Environmental Defense Fund, one of the groups most concerned about the ESA as well as invasive species, and, as noted above, was co-author of a report that claimed peregrines introduced to the coastal salt marshes represented a success story of the Act. ESA advocates like Wilcove are blissfully unencumbered by a sense of irony, to say nothing of a sense of shame.

The more direct context of the introduced peregrines is that the introduction has potentially significant implications for the conservation biology and ecology of the salt marsh and coastal ecosystem of the Mid-Atlantic. In a report titled, "Endangered Ecosystems," Defenders of Wildlife identifies "Coastal Communities in the lower 48 States and Hawaii" as one of America's "21 most endangered ecosystems."[159] Defenders notes, "Overall, beach and coastal strand communities (occurring on dunes) are the rarest and most vulnerable [of the coastal communities]. They sustain very high concentrations of endangered species…In Maryland, 95 percent of natural barrier island beaches and over 50 percent of dune habitats have been destroyed."[160] These habitats also support piping plovers and least terns, species preyed on or harassed by introduced peregrines, the eleven other species of shorebirds on the 2007 WatchList, as well as many other more common species; all of which have to run the introduced peregrine gantlet. "We are convinced that the loss of ecosystems, which threatens to diminish the quality of life nationwide, should be of the highest significance," asserted Rodger Schlickeisen, then President of Defenders.[161] As to what should be done, he said, "we recommend that saving ecosystems be made a national goal. Achieving this goal will mean…improving the scientific base on which these decisions [to conserve ecosystems] are made."[162] So it would seem that the introduction of peregrines to the mid-Atlantic coastal

[158] Wilcove et al., 1998.

[159] Noss and Peters 1995, p.58.

[160] Noss and Peters 1995, p.59.

[161] Noss and Peters, 1995, p.vii.

[162] Noss and Peters, 1995, p.vii.

ecosystem ought to merit mention by Defenders. It is unconscionable that Defenders and other organizations countenanced, and the FWS explicitly sanctioned, the degradation of an ecosystem, especially one that has been subject to substantial destruction and degradation.

As the issue of introduced peregrines reveals, advocates of the ESA selectively invoke the damage that can be done to ecosystems by non-native species. To mark the ESA's thirtieth anniversary, a number of groups—including the Center for Biological Diversity, Defenders of Wildlife, Earthjustice, Endangered Species Coalition, Natural Resources Defense Council, National Wildlife Federation, and U.S. PIRG—published "factsheets" on a number of species. The factsheet on the Aleutian Canada goose states; "All ecosystems are a delicate balance. The decline of the Aleutian Canada goose demonstrates that non-native species can devastate an entire ecosystem."[163] Yet the "factsheet" on the American peregrine conveniently omits any reference to damage caused to the Mid-Atlantic coastal ecosystem by the introduced peregrines.

REINTRODUCTIONS TO HISTORIC HABITAT

The return of peregrines to their native habitat in the Appalachian Mountains casts further doubt on the rationale for releasing non-native peregrines from towers erected in coastal salt marshes. In 1981, peregrines occupied a nest site in the mountains of New Hampshire, the first time in decades historic habitat east of the Mississippi River was occupied.[164] This success relatively early in the Eastern release program—recall that large-scale releases of peregrines did not start until 1975—was clear evidence that peregrines could successfully re-inhabit their historic habitat and the continued releases along the coast were unnecessary to insure the return of the peregrine. While establishing viable populations would have taken longer by relying solely on releases in historic habitat, this seems a reasonable compromise in order to prevent introducing a species to non-native habitat where it would cause harm. By 1996, there were 42 pairs nesting in the mountains of Maine, New Hampshire, Vermont and northern New York.[165]

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[163] American Rivers et al., 2003d.

[164] Corser et al., 1999.

[165] Corser et al., 1999.

The tradeoff of releasing peregrines only in native habitat would likely have been a delay in when the peregrine in the eastern U.S. were ready to be delisted; instead of 1999, the date would have been pushed back by a number of years.

Whether this is a reasonable tradeoff depends on one's point of view. If one is primarily concerned with peregrine restoration, then introducing peregrines to native habitat would be of secondary importance. But if one is concerned with the integrity of naturally functioning ecosystems, then the introduction of peregrines to non-native habitat would be of primary importance. By 2002, peregrines began to inhabit some of their former lowland, riparian habitats in southern and central New England and the mid-Atlantic along the Connecticut, Hudson and Susquehanna Rivers.[166] This provides a further indication that reintroductions and restoration of the peregrine to the eastern U.S. could have been completed without the coastal introductions. But the FWS, the Peregrine Fund, state wildlife agencies and environmental pressure groups chose not to take the slower route of ecological integrity. Instead they chose to take the quicker route of deceit and corruption.

CONTINUED DENIAL

Not surprisingly, the FWS and pressure groups continue to claim the peregrines released in the salt marshes were reintroduced, not introduced. In the years leading up to the FWS's delisting of the peregrine in 1999 the agency refused to acknowledge that it presided over the introduction of peregrine falcons to the salt marshes. Worse, the agency maintained that the introduction was actually a reintroduction. When Jamie Rappaport Clark, FWS Director from July 1997 to January 2001, had her confirmation hearing before the Senate she listed her credentials, including when she was a college student. "My studies ranged from peregrine falcon reintroductions in Northern Maryland," to white-tailed deer research, she stated.[167] A few months after FWS delisted the peregrine, Clark waxed rhapsodic about her about her role in the introduction of peregrines, in an article titled, "Sharing the Rewards of Endangered Species Recovery." "During the early days of the Endangered Species Act, I cared for five of these then-endangered falcons at Maryland's Aberdeen Proving Ground," she stated. "I knew the species

[166] Cade 2003, p.103.

[167] Clark 1997.

was on the verge of disappearing, but I was confident that America's support for the Endangered Species Act would ultimately save the world's fastest bird from extinction."[168] Clark sees her experience as containing larger lessons. "As a hack site attendant, I released five Peregrine Falcons. All of us share a responsibility for saving species from the brink of extinction. Each of us doing our part, however small, can keep wonderful creatures like the Peregrine Falcon from disappearing forever."[169] Clark even went so far as to hold up the introduction of peregrine falcons into the salt marshes as an example of imperiled species conservation to be emulated. "The recovery of the peregrine has been a model of partnership in the conservation and recovery of an endangered species," Clark said in 1998 when the FWS released the proposal to delist the peregrine.[170] Clark's involvement in the fiasco of introducing peregrines to the salt marshes has become a badge of honor for her that she brandishes as proof of her credentials and long-standing commitment to conservation. "When I began my career almost 30 years ago, peregrine falcons were in dire straits," observes Rappaport. She then elaborates:

> "I spent a summer in college working with the Cornell University Lab of Ornithology in Ithaca, New York, where I had the chance to help make history. I was a member of a team of biologists that was releasing captive-bred peregrine falcon chicks back into the wild. Having disappeared east of the Mississippi by 1970, the species was about to take its first steps on the road to recovery, and I was helping make it happen. As a young biologist, I would have never dreamed that nearly 20 years later, I would be Director of the U.S. Fish and Wildlife Service and part of history again, as I announced the full recovery of the peregrine falcon. That incredible success was a direct result of the Endangered Species Act—our nation's most forward-thinking and effective wildlife conservation law. Because of dedicated recovery efforts made possible by the act, peregrine falcons were able to fly off the endangered species list. And today, the species is thriving once again."[171]

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[168] Clark 1999a.

[169] Clark 2003.

[170] U.S. Fish and Wildlife Service 1998b.

[171] Clark 2011.

If anything, the introduction of the peregrine falcon is a model for how endangered species recovery should not be done. After leaving the FWS, Clark first took a senior position at the National Wildlife Federation and then moved to Defenders of Wildlife, where, since February 2004 to October 2011 she was Executive Vice President, which put her in charge of Defenders' day-to-day operations, and since October 2011 as the organization's President. Clark has also become environmental pressure groups' chief spokesperson for the ESA, having supplanted Environmental Defense Fund's Michael Bean. In this capacity, Clark has testified a number of times before Congress on the ESA. "We can still see bald eagles in the lower 48 states and other magnificent creatures like the peregrine falcon, the American alligator, and California condors, largely because of the Act," claimed Clark in a May 2005 Senate hearing.[172] A few months later, she made the same statement in a House hearing.[173] Such claims about the peregrine and alligator, as documented in this book, are utterly without merit. In many ways it is entirely fitting Clark began her career helping introduce peregrines to the salt marshes of the Mid-Atlantic given her involvement in this shameful, fraudulent and ecologically damaging program that was done for the sake of media coverage and raising funds, not the conservation of native species and the ecosystems in which they live. It is also fitting that in many ways Clark has made her experience as a hack site the central metaphor of her career because, in her mind, it establishes her career-long commitment to, and involvement in, wildlife conservation.

Many of the lessons of introducing peregrines are summed-up by Eirik Blom:

> "We made environmental decisions for emotional reasons, caught up in the high-flying imagery and language of the peregrine. We were invited to join a crusade to save the most regal of birds, the king of the skies. The media, without questioning the larger implications, obliged with lavender prose about the beauty of the beast, the grandeur of the peregrine in a stoop, the way the human heart soars when a peregrine drifts by on stiff wings or tears into a victim. In magazines and newspapers, headlines trumpeted: THE PEREGRINE IS BACK."[174]

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[172] Clark 2005a.

[173] Clark 2005b.

[174] Blom 1992, p.73.

The decision to introduce peregrines to the coastal salt marshes was a mistake, and one that is not easily undone because of the peregrine's enormous popularity. "The soul of a peregrine weighs no more than the soul of a least tern or a piping plover," said Blom. "All three species are endangered. There peregrine just gets better press."[175] It is no wonder the FWS and environmental pressure groups do not mention the introduction of peregrines to the salt marshes because the FWS gave the regulatory approval for this fiasco and pressure groups went along for the ride. In addition, by giving official approval to the introductions, the FWS is responsible for violating the Endangered Species Act because introduced peregrines are responsible for violating the Act's prohibition on listed species being harassed, pursued and hunted. Amazingly, this was not the only instance of the FWS violating the ESA during the American peregrine falcon's tenure under the Act. During the course of Operation Falcon, the sham law enforcement sting operation that will be discussed in this profile of the peregrine, the FWS's Special Agent Gavitt helped take peregrine eggs from the wild without a permit (see section titled "Conservation Hindered by Interior Department"). As both the introduction of peregrines to the salt marshes and collecting eggs demonstrates, the FWS seems to think it is acceptable to violate the ESA in order to engage in so-called conservation efforts, which were actually shams and fiascos.

CONCLUSIONS ON ECOLOGIAL ASPECTS OF INRODUCTIONS: The time has come to take down the nesting towers in salt marshes along the Mid-Atlantic Coast. The thirty-nine pairs of peregrines that existed on towers at the time of delisting have no business being there. The FWS, state wildlife agencies, and environmental pressure groups erred in allowing the towers to be erected in the first place and in allowing the continuing maintenance of the towers. The predictable results of peregrines nesting in the salt marshes—predation of least terns and barn owls, harassment of piping plovers, attacks on migrating peregrines, and likely predation and attacks on a wide array of coastal bird species, including thirteen of those on the Audubon Society's WatchList—is vivid proof of the introductions never should have occurred and that the nesting towers need to come down. In addition, introduced peregrines pursuing, harassing, and hunting piping plovers puts the FWS, which ultimately provided the go-ahead for introductions through the issuing of federal permits, in direct violation of the ESA. After all, harass is one of

[175] Blom 1992, p.73.

the nine terms used to define the prohibition on taking a species listed under the Act. "The term 'take' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct," states the text of the ESA [176]

Casting further doubt on the introduction of peregrines to the salt marshes is that one of the primary rationales for doing so, predation by great-horned owls along lowland river cliffs, turned out not to be a problem at the higher elevations of the northern Adirondack Mountains where the first successful nesting in historic habitat occurred in New Hampshire in 1981. When this occurred, the coastal towers should have been dismantled and all release efforts in the Eastern U.S. should have shifted to native habitat in the mountains. Instead, the FWS and state wildlife agencies, with the aid of the Peregrine Fund and acquiescence of pressure groups, continued to release peregrines into the salt marshes and construct nesting towers. But, of course, the towers were not dismantled because once the charismatic peregrine became established in the salt marshes its advocates in the public and private sectors knew they had a gold mine on their hands that could yield significant amounts of publicity and funding. Peregrines in coastal towers are relatively easy to observe, and so the FWS, state wildlife agencies and falcon enthusiasts kicked their public relations and fund raising machines into high gear in order to sell the public and the media on magnificent, easily observed peregrines nesting along the coast.

By contrast, peregrines nesting in mountains are much more difficult for the public to observe because of a number of factors; steep topography, vegetation that can obscure observation, nesting cliffs tend to be hundreds of feet up cliff faces, and mountainous areas are much farther away from large population centers than the coast. "Eventually, the peregrine falcon would have recovered on its own, but the recovery wouldn't have been so dramatic or widespread without the release programs," surmises Robert Mesta, FWS biologist who was heavily involved with the peregrine program.[177] Note the use of the term "dramatic," which has everything to do with public relations and nothing with biology and ecology.

A slower return of the peregrine to the Eastern U.S. would seem a small price to pay for not harming the salt marshes of the Mid-Atlantic coast, one of the most threatened ecosystems in

[176] Endangered Species Act, 1973, sec.1532 (19).

[177] Salvesen 1996.

the U.S. The complicity of the FWS, state wildlife agencies, falcon enthusiasts, and environmental pressure groups in the introduction of peregrine falcons to this ecosystem, which, in some instances resulted in the ESA being violated, is astounding and one of the leading examples of how politics, public relations and fundraising can trump species conservation.

REGULATORY PROBLEMS

In addition to the ecological problems associated with introducing peregrines in the salt marshes of the mid-Atlantic coast, there is a regulatory history that cast further doubt on the introductions. This history started in May 1977 when President Carter issued Executive Order 11987. The Executive Order mandated federal agencies "restrict the introduction of exotic species into the natural ecosystems on lands and waters which they own, lease, or hold for purposes of administration" and encourage State and municipal governments, as well as private citizens, from introducing exotic species as well.[178] This was germane to peregrines released in the east and Midwest because they were hybrid birds that contained non-native genetic stock, including peregrines from Spain, Alaska, and the Pacific Coast of Canada. In response to Carter's Executive Order, in June 1977 the FWS sent the Peregrine Fund a telegram mandating a halt to releases in the Easter U.S. This was soon followed by a more formal memorandum stating that funds for species listed under the ESA could not be spent on the conservation of species that were either not indigenous to the U.S. or not protected under the Act.[179]

This sent shock waves through peregrine conservation community, especially those involved in captive breeding and releases. As a result, a couple things happened. One, the recovery team for the Eastern U.S. tried to negotiate a solution with the FWS. Two, many of the major environmental pressure groups—including the National Audubon Society, National Wildlife Federation, and World Wildlife Fund-U.S—sent letters to the FWS voicing support for the use of exotic peregrines in the East.[180] Thomas Kimball, Executive Vice President for the National Wildlife Federation claimed the FWS's demand that releases of peregrines cease was

[178] "Executive Order 11987, 1977.

[179] Cade and Burnham 2003b, p.264.

[180] Cade and Burnham 2003b, pp.264-5.

"unfortunate and arbitrary." After he visited a release site, which was likely in a salt marsh, Kimball said a person "cannot begin to describe the beauty of seeing a flying peregrine again."[181] S. Dillon Ripley, the highly respected Director of the Smithsonian Institution, similarly gushed, calling the breeding and release program, "a triumph of ornithological management in the very best sense."[182]

BUREAUCRATIC EXPEDIENCY

Instead of dealing with the underlying problems of introducing, not reintroducing, non-native hybrids, the FWS resorted to bureaucratic expediency to save the cherished peregrine program. The first time it did so was in 1978 when "the Director [of the FWS] issued a policy statement confirming support for the use of intercrossed North American peregrines to establish an eastern peregrine falcon population and the use of endangered species funds [to do so]," according to the FWS.[183]

The FWS thought it had solved the problem through the 1978 policy statement, but a few years later it was in for a rude shock that the agency tried to solve through yet more bureaucratic expediency. The first official indication of the FWS's solution was in 1983 when the agency proposed to "clarify the status" of the American peregrine falcon at the same time the agency proposed to downlist the Arctic Peregrine falcon from endangered to the less imperiled status of threatened.[184] The proposed status clarification was actually a mechanism to provide all free flying peregrines in the lower 48 states equal protection under the ESA's Similarity of Appearance Provision.[185] The point of the Provision is to avoid intentional or unintentional take of unlisted species by affording them the same protection as listed, but similar appearing species. In the case of the peregrine falcon, it is difficult to distinguish various subspecies in the field, short of capturing and inspecting them. So the FWS proposed to give blanket protection to all

[181] Wade 1978, p.1055.

[182] Wade 1978, p.1055.

[183] U.S. Fish and Wildlife Service 1999k.

[184] U.S. Fish and Wildlife Service 1983c.

[185] Endangered Species Act, 1973, sec. 1533 (4)(e).

peregrines. In 1984 the FWS followed up on its proposal by making it final.[186] But reading the Federal Register provides no indication of the underlying reason for this change.

LEGAL PLOY

The true reason why the FWS downlisted the Arctic peregrine falcon in 1984 was to provide cover for the legal ploy the Interior Department had to engage in to provide protection to the captive-bred exotic hybrid peregrines released by the Peregrine Fund and others. The problem the FWS wanted to solve was that these released peregrines, because they were exotic, were not afforded protection under the ESA. The FWS was apparently unaware of the legal ramifications of releasing hybrid peregrines, and it took a memorable incident for the agency to realize this.

The wheels were put into motion in June 1979 when the Interior Department, in conjunction with the Peregrine Fund, placed a peregrine hack box on the roof main Interior building. The Peregrine Fund placed four young peregrines in a hack box to much fanfare. "The prospects of seeing this magnificent bird once again soaring above the Nation's Capital testifies to the fact that all the news about endangered species is not gloom and doom," said Interior Secretary, Cecil Andrus.[187] One month later, when the one of the peregrines flew for the first time, the Interior Department was similarly exultant. The peregrine was named Rachel after Rachel Carson, the former Interior Department employee whose book, *Silent Spring*, popularized the issue of DDT—even if some of its claims about direct toxicity to birds were unfounded—and became one of the seminal documents of the burgeoning environmental movement. "As a living tribute to Miss Carson's life, her work, and her prophecy, the first female peregrine to fly from the site of the special captive-breeding project carries her name," proclaimed Cecil Andrus.[188] By the beginning of August the four peregrines were not only flying but able to catch their own food.[189]

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[186] U.S. Fish and Wildlife Service 1984b.

[187] U.S. Fish and Wildlife Service 1979f.

[188] U.S. Fish and Wildlife Service 1979i.

[189] U.S. Fish and Wildlife Service 1979k.

All looked well until at least one of the peregrines was true to its name—peregrine means wanderer—and made its way north to New Jersey. There it was shot by a pigeon hunter who kept it in his freezer for a year, and then had the falcon stuffed and mounted by a taxidermist.[190] When the stuffed peregrine was eventually discovered by law enforcement authorities, it amazingly still had its leg bands attached so there was no question about its origin as one of the birds released on the roof of the Interior building in 1979.

Eventually, the FWS and Secretary Andrus were notified about the stuffed peregrine (Andrus left office in January 20, 1981 so it had to have taken place prior to this date), but what occurred next is where the story gets interesting. The determination was made, likely by Interior Department's Office of the Solicitor, the Department's legal arm, that the New Jersey man who shot the peregrine could not be charged with breaking federal law. This was because the peregrine, as an exotic hybrid, was afforded no legal protection under the ESA or any other potentially applicable law, such as the Migratory Bird Treaty Act. Upon hearing this, Secretary Andrus "hit the roof," according to Jay Sheppard, a longtime FWS employee. As the story was told and retold around the Interior Department, it was said that Andrus was so angry he hit the roof with such force that a permanent dent was made in the ceiling of the Secretary's office.[191] While the story of the ceiling is of course apocryphal, Andrus's anger was not. According to Sheppard, part of Andrus's anger was directed at the Peregrine Fund because the Fund had assured him the four birds released from the Interior Department roof were, indeed, afforded the ESA's protection. But Andrus's anger was largely misplaced because the FWS and the Interior Department's Office of the Solicitor had ultimate the responsibility to scrutinize the legal status of hybrid peregrines released to the wild, not the Peregrine Fund. More importantly, even if President Carter had not issued the Executive Order on exotic species, it is very unlikely the hybrid peregrines would have been afforded legal protection.

The FWS made a somewhat oblique reference to the incident of the shot peregrine in the proposal to downlist the Arctic peregrine but provided no clarification beyond this: "A few of these released falcons as well as wild birds have been found shot or trapped by unauthorized individuals in the past few years. The Service has found it difficult to prosecute an individual for

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[190] McLain 2003.

[191] Sheppard 1995.

the take of a released peregrine falcon under the Endangered Species Act because of the status of some of these subspecies used for stocking purposes."[192]

At the time the stuffed peregrine was discovered, the FWS realized the potential fiasco that would result if it became widely known that peregrines in the Eastern U.S. could be legally killed. If members of Congress found out they would be furious, especially those on the House Interior Subcommittee on Appropriations to whom the Peregrine Fund had successfully sold the captive breeding and release program so that by 1981 the Fund could receive federal funding. And if the general public and the media learned about this, they would be disillusioned and perhaps lessen their support for peregrines and endangered species in general.

Given the FWS's 1978 attempt to ignore the hybrid peregrine problem through a crude and quick "fix," when the problem of the stuffed peregrine subsequently cropped-up the agency may have been tempted to do something similar again. But the FWS's hand was forced in 1983 when the Interior Department's Solicitor issued a legal opinion, which is a formal document that carries the force of law, that found the intercrossed (i.e., exotic hybrid) peregrines were not afforded protection under the ESA.[193]

Instead of taking a hard look at the serious biological, ecological and regulatory issues surrounding these peregrines, or lack thereof that permitted their release, the FWS tried to sweep the entire issue under the carpet in 1984 when the agency downlisted the Arctic peregrine (*falco peregrinus tundrius*) from endangered to threatened. The FWS "solved" the hybrid peregrine problem by attaching it to Federal Register rule on the Arctic peregrine. The rule declared that all free-flying peregrines, be they native or hybrid, in the lower 48 states were henceforth considered endangered, and thereby protecting them under the ESA's Similarity of Appearance provision. In the case of the peregrine, "[t]his was done because intercrossed peregrines were not readily distinguishable from listed American and Arctic peregrines, making enforcement of the taking prohibitions for the listed subspecies difficult," according to the FWS.[194]

The FWS was able to pull off this legal ruse because Arctic peregrines from Canada and Greenland migrate down the East Coast in the fall on their way to wintering habitat in Central

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[192] U.S. Fish and Wildlife Service 1983c, p.8800.

[193] U.S. Fish and Wildlife Service ND, Commonly Asked Questions.

[194] U.S. Fish and Wildlife Service ND, Commonly Asked Questions.

and South America. When they migrate Arctic peregrines overlap geographically and temporally (for a few weeks at least), with introduced American peregrines. Due to the extreme difficulty differentiating Arctic peregrines from the hybrid American peregrines, especially when the birds are flying, the FWS simply extended the ESA's protections to the hybrids.

But in order to pull off this bit of trickery, the FWS had to publish proposed and final rules in the Federal Register. This had the potential to draw unwanted scrutiny from public officials, special interest groups and the general public. So instead of publishing stand-alone proposed and final rules for the hybrid peregrines, the FWS cleverly decided to piggyback the hybrid ploy on the back of proposed and final rules to downlist the Arctic peregrine from endangered to threatened. So it appears that the downlisting of the Arctic peregrine was done as a smokescreen to conceal the legal ploy of using the Act's Similarity of Appearance provision to extend protection to the hybrid, exotic peregrines released in the East and Midwest.

The Arctic peregrine's recovery criteria provides another piece of evidence that the Arctic peregrine's downlisting was due less to its actual status than it was an effort to cover-up the fiasco of releasing hybrid exotic American peregrines. The FWS approved the recovery plan for the Arctic peregrine in 1982, and the plan contained three recovery criteria relating to population levels, DDE residues, and eggshell thickness (see footnote #1). For downlisting to occur, these criteria had to be met or exceeded for five consecutive years, which would have been 1986 or 1987 at the earliest (depending whether 1982 or 1983 was considered as the first year goals could be met). In either case, the Arctic peregrine did not meet the productivity goal until 1982 and the population goal until 1984, which means that if the FWS was following the recovery plan, 1988 or 1989 was when downlisting first could have occurred.[195]

There are two possible explanations for why the FWS chose not to follow the recovery criteria and downlist the Arctic peregrine in 1984. First, the FWS is not legally bound to follow recovery plans, including plans' recovery criteria. In the case of the Arctic peregrine, the FWS could have surmised that the criteria were wildly inaccurate and therefore essentially invalid. While this proved to be true for DDE residues and eggshell thickness, as discussed in the Arctic peregrine's profile, this is not as probable for the population and productivity goals because by 1984 the peregrine was well on its way towards meeting them, which indicated the goals were

[195] U.S. Fish and Wildlife Service 1993b, p.51040.

reasonable. Second, the FWS considered factors other than the downlisting criteria. This is the more plausible explanation due to the agency trying to conceal the solution to the American peregrine's legal problems by piggybacking the solution onto the Arctic peregrine's downlisting. Another way of looking at this issue is that if the recovery criteria were so inappropriate that the Arctic peregrine merited downlisting even though none of the criteria were met, then the peregrine could just as easily have been delisted, if not in 1984 then soon thereafter instead of in 1994.

Even before the FWS made the decision to downlist the Arctic peregrine, the agency had been urged to do so. "The proposed reclassification of the Arctic peregrine (and the retention of the American peregrine as endangered) was suggested to the Service in 1980 as a result of the 5-year review," stated the FWS in 1984. "That recommendation came principally from the Eastern Peregrine Falcon Recovery Team and the Peregrine Fund."[196] Obviously, the FWS did not act on the recommendation at the time but somehow chose to do so in 1983, which just so happened to coincide with the hybrid peregrine fiasco.

After the FWS downlisted the Arctic peregrine, it still had the problem of the Solicitor's opinion. "The 1983 Solicitor opinion was subsequently withdrawn, and the [U.S. Fish and Wildlife] Service continues to endorse the eastern [peregrine] restoration program."[197] In other words, the FWS blithely went on its way and refused to take a look at the serious biological and ecological issues surrounding the release of hybrid "American" peregrines. Even though much of the effort to release American peregrines in the East and Midwest was not restoration, but rather introduction, such a distinction was of little importance to the FWS because of the overarching imperative of having a wild population of peregrines.

CONCLUSIONS ON INTRODUCTIONS

The implications of introducing peregrines to the mid-Atlantic coastal ecosystem for the FWS, environmental pressure groups, and the ESA are quite serious. After all, conservation of ecosystems is the ESA's secondary goal, to say nothing of fact that the FWS may have violated the Act by allowing the introductions to occur and continuing to allow introduced peregrines to

[196] U.S. Fish and Wildlife Service 1984b, p.10522.

[197] U.S. Fish and Wildlife Service ND, Commonly Asked Questions.

take piping plovers, a species protected under the ESA. Given the importance that the FWS and pressure groups attach to ecosystem conservation—in some cases going so far as to claim erroneously that it is the ESA's primary goal—their unwillingness to criticize the disruption caused to the mid-Atlantic coastal ecosystem by the introduction of peregrine falcons is both troubling and telling. The most likely explanation for this unwillingness is a conscious decision on the part of the FWS and pressure groups to compromise what they know to be biologically and ecologically sound for the sake of political expediency and positive public relations. No doubt recovery in the Eastern U.S. would have taken longer had the coastal towers not been used, but this seems a small price to pay for helping to maintain the integrity of coastal ecosystems.

REMOTE ALASKAN HABITAT

Of the 1,331 pairs of American peregrine falcon in the U.S. when delisting occurred in 1999, 301 pairs were in Alaska. Yet, very, very little in the way of conservation efforts, other than monitoring, took place for these Alaskan peregrines. The reason for this is that much of the habitat in Alaska was such remote areas that human-related habitat disturbance, degradation and destruction were essentially non-issues. Also, no releases of captive-bred peregrine took place in Alaska. Indeed, by 1984, according to the FWS, "…the Alaskan population of American peregrine falcons is in stable condition."[198] The overwhelming reason for this, as with the Arctic peregrine falcon, was falcon's remote habitat. As a result, by 1984 the Alaska *anatum* peregrine population was healthy and remained so for the next fifteen years until delisting. Therefore the ESA and FWS can claim virtually no credit for the "recovery" of American peregrine falcons in Alaska, which represented 23% of the U.S. total when delisting occurred.

HABITAT PROTECTION IN LOWER 48 STATES

Given that essentially no habitat protection occurred in Alaska, the issue of habitat protection turns to the lower 48 states and 77% of the American peregrine's population. As with

[198] U.S. Fish and Wildlife Service 1984b, p.10523.

much pertaining to the conservation of the American peregrine, it is useful to turn to the views of experts, and none had more expertise than Tom Cade and Bill Burnham of the Peregrine Fund. "Protection provided the Peregrine under the ESA added little, if any, additional conservation benefit for the species," assert Cade and Burnham.[199] The FWS concurred with much of this view when the agency delisted the peregrine: "[W]e conclude that habitat modification or destruction was not a limiting factor in peregrine recovery. It does not currently threaten the existence of the American peregrine falcon nor is it likely to in the foreseeable future."[200] The FWS added, "In the absence of habitat protection under the Act, there are no other existing Federal laws that specifically protect the habitat of this species…However, loss of habitat was not identified as a threat to the species and was not a factor identified as contributing to the species' listing."[201]

The reason habitat protection was of very little importance for the recovery of the peregrine is that the peregrine usually nests on cliffs and mountainside ledges, habitat that is very inaccessible and extremely difficult to destroy. The FWS and some environmental pressure groups acknowledge this. "Losses of nest sites have not posed any overall problem to this falcon," the FWS admitted.[202] "We're seeing huge success stories with those animals that did not have big bunches of their habitat missing, but something else was contributing to their demise," stated Bob Ferris, then Vice President for Species Conservation for Defenders of Wildlife.[203] Even the National Audubon Society seems to agree implicitly on this point. "After near extinction only two decades ago, the Peregrine Falcon has made a comeback due to federal restrictions on DDT and other pesticide use, and successful captive breeding programs."[204] Notice that there is no mention of habitat protection. Several experts involved in peregrine conservation have also stated that habitat protection was relatively unimportant.[205]

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[199] Cade and Burnham 2003b, p.262.

[200] U.S. Fish and Wildlife Service 1999i, p.46554.

[201] U.S. Fish and Wildlife Service 1999i, p.46555.

[202] U.S. Fish and Wildlife Service 1983c, p.8798.

[203] Shogren 1999.

[204] National Audubon Society ND, Species Profiles; Peregrine Falcon.

[205] "Overall, habitat protection targeted specifically at the recovery of Peregrines has been minimal. Fortunately their recovery has not been dependent on it." (Walton and Thelander 1988). "The reason why it has recovered has really not been the protection from human take or disturbance that many have been offered, it has been because of reduced levels of DDT in the environment,

Despite that habitat protection was of minimal importance in the lower 48 states, the FWS and environmental pressure groups paint a picture in which habitat conservation under the ESA was a significant factor contributing to the peregrine's resurgence. "The Peregrine falcon population has started to increase in response to reintroduction and habitat protection," claims Defenders of Wildlife.[206] "Although critics claim that section 9 of the ESA prohibits any land use, two private logging operations in Vermont were merely delayed to allow Peregrine falcons to nest. The landowners suffered no economic impact beyond a slight delay in logging until the falcons were finished breeding.[207] Environmental Defense Fund claims the "peregrine falcon did not return entirely on…[its] own: The Endangered Species Act played an critical role in…[its] recovery by funding translocations of birds from areas where they were more numerous, by preserving habitat, and by mandating stiff penalties for shooting and other acts harmful to endangered species."[208]

But the FWS is much bolder, claiming it was "busy protecting peregrine falcon habitat" through:

> "Section 7 (a) (2) of the Act [which] prohibits federal agencies from engaging in any action that is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of its critical habitat. Federal agencies must consult with the Service prior to conducting, authorizing, or funding activities that might affect a listed species. The Service has conducted thousands of consultations with tribal governments and federal agencies, such as the Forest Service, Bureau of Reclamation, and Bureau of Land Management, on Federal projects, and on State and private projects that required Federal permits or funding. These consultations resulted in the protection of hundreds of nest sites, thousands of acres of foraging habitat, and the funding of recovery and research projects that contributed significantly to the recovery of the peregrine falcon."[209]

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production and release of peregrine falcons, funding and the cooperation and the hard work of many." (Burnham 1985, p.156).

[206] Defenders of Wildlife, ND, Endangered Species Act (ESA) Success Stories: The Eastern United States.

[207] Defenders of Wildlife, ND, Endangered Species Act (ESA) Success Stories: The Eastern United States.

[208] Environmental Defense Fund 1999c.

[209] U.S. Fish and Wildlife Service ND, The Role of the Endangered Species Act.

Feeling even more expansive, the FWS has also stated, "[I]t is also acknowledged that the peregrine falcon would not be recovered today without the protection of the Act and the Act's provisions."[210]

ESA proponents have also claimed that the designation of critical habitat, a provision under the ESA that affords species' habitat a heightened level of protection, was beneficial to the peregrine. Pressure groups—among them the Center for Biological Diversity, Defenders of Wildlife, the Endangered Species Coalition, the Sierra Club, Earthjustice, and the Natural Resources Defense Council—labeled the American peregrine falcon as one of a number of "species that have benefited from critical habitat."[211] If this were so, then one would expect some mention of the importance of critical habitat in the FWS's final federal register rule delisting the American peregrine. There is none because the five critical habitat sites in California added essentially nothing to the resurgence of the peregrine.

In reality, critical habitat played little if any role in the peregrine's conservation. Critical habitat was designated for the peregrine in 1977 at five sites in Napa and Sonoma Counties, California that were being considered for geothermal energy development.[212] A number of pressure groups, including the Sierra Club and Wilderness Society, supported the designation of critical habitat.[213] It is ironic that these organizations, which have long been proponents of non-fossil fuel based energy, such as geothermal, opposed the geothermal project in California. The Napa County Board of Supervisors also supported the designation of critical habitat in an apparent attempt to use the Endangered Species Act to prevent a form of land use to which they were opposed.[214]

Once again, peregrine experts provide a much needed dose of truth and reality, this time on the role, or lack thereof, of critical habitat in the conservation of the American peregrine. "Designation of critical habitat for Peregrines was unnecessary as the Peregrine is amazingly adaptable and opportunistic, breeding and wintering in a variety of habitats, including cities,"

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[210] U.S. Fish and Wildlife Service ND, The Role of the Endangered Species Act.

[211] Center for Biological Diversity et al., ND, Bush Administration.

[212] U.S. Fish and Wildlife Service 1977c, p.40686; U.S. Fish and Wildlife Service 1983c, p.8798.

[213] U.S. Fish and Wildlife Service 1977c, p.40686.

[214] U.S. Fish and Wildlife Service 1977c, p.40686.

note Bill Burnham and Tom Cade of the Peregrine Fund.[215] "Fortunately, FWS did not seek to declare critical habitat…for the Peregrine. Whether by calculated decision or simply omission, the Peregrine did not generate conflict over land use practices…because of critical habitat," asserts Frank Bond one of the founding members of the Peregrine Fund and an authority of peregrine conservation in the U.S.[216]

The foregoing discussion of habitat conservation, however, does not mean that habitat degradation and destruction has not been detrimental to the peregrine historically, because it has been. But several factors must be considered. First, it is highly unlikely, or even impossible, that much of the degraded and destroyed habitat—such as wetlands in California used by peregrines for hunting but which have been converted to housing and agriculture—will ever be restored. Second, the advent of DDT following WW II is the overwhelming cause of the peregrine's rapid decline and even extirpation from many regions. Habitat loss played a relatively minor role compared to DDT. Third, at the time of the peregrine's delisting in 1999, there were 95 nest sites in urban environments (e.g., bridges, skyscrapers, smokestacks), which indicates peregrines are more tolerant of some human altered environments than perhaps was initially believed. Furthermore, the owners or managers of 88 of these sites said that after delisting they would do nothing to prevent or discourage peregrines from continuing to nest.[217] "[S]ome forms of habitat modification have negatively affected peregrine falcons while other forms [such as cities in which peregrines live] have benefited them. It would be burdensome to estimate the net, overall effect of habitat modification on the species throughout North America," stated the FWS when it delisted the peregrine. [218] Fourth, peregrines seem to be more tolerant of certain types of human disturbance than was initially thought. As the National Wildlife Federation notes: "Peregrines appear to be less affected by the amount of traffic or human development below their nesting cliffs than by human presence on a cliff, which may interrupt incubation and can cause peregrines to desert their nest. Compared to the western U.S., suitable nesting cliffs are relatively rare in the East, and eastern populations of nesting peregrines are

[215] Cade and Burnham 2003b, p.262.

[216] Bond 2003, p.281.

[217] Martell et al., 2000.

[218] U.S. Fish and Wildlife Service 1999i, p.46554.

especially vulnerable to human disturbance."[219] Peregrine's tolerance of different types of disturbance has been observed since the early 1970's.[220] Fifth, as Cade and Burnham state above, the ESA provided little, if any, benefit to the peregrine.

While there is no doubt that peregrine nesting sites have been protected from disturbance under the auspices of the ESA, these actions have been relatively insignificant when compared with the banning of DDT, data error, captive breeding, peregrines in Alaska, and the five factors discussed above. Claims that habitat protection under the ESA has played a significant role in the peregrine's conservation are without merit.

CANADIAN CONFUSION

In the final Federal Register rule delisting the peregrine, as well as various press releases announcing the delisting, the FWS cites 1,650 pairs of peregrines as proof of ESA success. This is an inflated number because 319 of these pairs were *anatum* peregrines from Canada. Given that the ESA has no jurisdiction in Canada, one wonders how the FWS can claim any credit for conserving Canadian peregrines. The accurate number is the 1,331 pairs of American peregrines in the lower 48 states and Alaska. While some might try to make the case that Canadian captive breeding and release efforts were boosted by the exchange and sale of birds from the U.S., in all likelihood this would have occurred with or without the presence of the ESA. Furthermore, the ESA's onerous permitting requirements were a serious obstacle to the sale and sharing of peregrines from the U.S. to Canada and from Canada to the U.S.

It seems the reason the FWS lumped-in Canadian peregrines was to inflate the number of peregrines "saved" by the ESA. While this was an amateurish effort to give the ESA undeserved credit, the FWS likely knew that many in the media would fail to distinguish between U.S. and

[219] National Wildlife Federation, ND, 25 Species Profiles: Peregrine Falcon.

[220] As pointed out by in the proceedings of a 1974 conference on peregrines; "[Ian] Newton [of The Nature Conservancy of Great Britain] feels that 'normal disturbance is a minor factor. He pointed to a Sussex nesting site on a limestone cliff where there was hourly dumping of refuse over the cliff (above the nest) every day, without abandonment. The destructive disturbance is that caused by birdwatchers, photographers, cliff-climbers, and falconers who may keep the birds off their eggs for repeated intervals of ten minutes or more. It is thus essential to protect specific sites" (Clement 1974, p.30).

Canadian peregrines.[221] But the media, which too often lazily and uncritically accepts information on the ESA from the FWS and proponents of the Act, also bears responsibility.

CONSERVATION HINDERED BY INTERIOR DEPARTMENT

There are two ways in which the Department of Interior seriously hindered conservation. One was a law enforcement "sting" operation, known as Operation Falcon, which the FWS Division of Law Enforcement carried out in the early 1980s and which was a fiasco. The second was the cumbersome federal permitting process, which was not so much a single event like Operation Falcon as it was a constant source of frustration, delay and expense for those conserving peregrines.

OPERATION FALCON

From 1981-1984 the FWS ran an elaborate law enforcement sting operation called Operation Falcon. The operation is better known as Falcon Scam, the name given to it by the falconing community, because it was a fiasco based on almost totally non-existent evidence that was used to ensnare many innocent people and hinder captive breeding efforts. The operation targeted a purported network of people involved in illegal commerce of peregrines and gyrfalcons, another species of falcon native to North America. Among those under investigation were private falconers and falcon breeders, the very same group of people who made possible the captive breeding efforts that were responsible for the return of falcons in much of the U.S. Indeed, at the conclusion of the Operation, an estimated 75% of the more than 1,400 peregrine released by the Peregrine Fund were birds contributed by falconers, or the progeny of birds contributed by falconers.[222] Operation Falcon was all the more of a shock to the falconing community because it was they, including people in academia, who petitioned the Department of Interior to list the peregrine in 1970, and it was they who led the efforts to conserve the

[221] Watson 1999; Shogren 1999.

[222] Berry 1985, p.484.

species.[223] Because Operation Falcon was built on the false premise and largely non-existent evidence of large scale illegal trade, its results were accordingly miniscule: ten wild *anatum* peregrines and three wild *anatum* eggs were from the U.S., although the eggs were illegally taken from a wild nest by FWS law enforcement personnel; and four or five *tundrius*, or Arctic, peregrines that were most likely from Canada.[224]

At the time it was carried out, Operation Falcon was the single largest wildlife law enforcement operation in U.S. history. There were several factors that converged to make the operation the "perfect storm" in which falcon conservationists found themselves caught.

First, was politics. In the early 1980s, the Interior Department, reeling from criticism of Secretary James Watt and threatened budget cuts by President Reagan, felt it had to do something dramatic to show that it was relevant and that it cared about the environment. "Rescuing" charismatic falcons was an ideal vehicle to accomplish this. Even though Watt was no longer Secretary when arrests were eventually made, the Operation was initiated during his tenure.

Second, was an important shift in the FWS's approach to law enforcement that pre-dated Watts's tenure. In the early 1970s, the FWS Division of Law Enforcement underwent a change when it started to recruit former FBI, CIA, Secret Service and other agents who had law enforcement backgrounds but had very little, if any, knowledge of wildlife or wildlife conservation. This was a marked shift from the "old school" personnel who were knowledgeable about wildlife and tended to take a less confrontational approach than the new recruits in the early 1970s. As a result of this change, the Division of Law Enforcement adopted much more aggressive tactics, such as infiltration, surveillance and the use of sting operations, and its new agents adopted a much more adversarial approach than their predecessors.[225] "The changes we've made will give us a harder hitting Federal force that will be able to deal more effectively with wildlife violations," stated Lynn Greenwalt, then Director of the FWS. The new harder hitting approach was "a major step in developing the kind of sophisticated and professional law enforcement program we need to meet the challenges of today's wildlife problems."[226] The new

[223] Cade 1998; Cade and Burnham 2003a, p.16.

[224] Shor 1988 , pp. 835-838.

[225] Cade 1977.

[226] U.S. Fish and Wildlife Service 1974a.

Law Enforcement agents were notorious for their swagger, and they saw themselves as the thin green line that stood between wildlife and the vagaries of commerce.

Heading the Division of Law Enforcement was Clark Bavin, who "was to FWS Law Enforcement what J. Edgar Hoover was to the FBI in approach and other similarities," according to Tom Cade and Bill Burnham.[227] Bavin was ambitious in the worse sense of the term. When Bavin's appointment was imminent in 1972, Nathaniel Reed, then Assistant Interior Secretary for Fish, Wildlife and Parks, was enthusiastic. "We are appointing a very bright and energetic young man as the new Chief of Enforcement for the Bureau whom I have great confidence in," Reed gushed. "I believe he will be able to take on the responsibilities of this Act, not only in the coming fiscal year, but with increasing emphasis on the funding levels in years to come."[228] Bavin perceived that the charismatic peregrine would make an ideal vehicle for garnering publicity for himself and the Division as well as increases in budgets and personnel.

Third, Operation Falcon was motivated by the FWS's philosophical suspicion and even opposition toward commerce in wildlife.[229] This antipathy towards commerce also damaged conservation of the American alligator and three species of kangaroos, and it likely had much to do with the FWS hiring new agents more oriented towards law enforcement than wildlife conservation.

Soon after Bavin's arrival, the Division of Law Enforcement began to focus on birds of prey. As early as 1974, the Division of Law Enforcement's agents were investigating people involved with birds of prey, including falconers. By 1976, Law Enforcement claimed that wild caught peregrines were being sold for up to $25,000 on the international falconry market. An

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[227] Cade and Burnham 2003b, p.262.

[228] Reed 1972, p.73.

[229] According to Interior Secretary, William Clark: "The Department is greatly concerned about the impact illegal trade is having on wild populations of birds, converting a public trust to a private gain. We intend to review in depth the existing regulatory mechanism that has apparently been defied on such a large scale. In the meantime, we will use available resources to combat schemes to commercially exploit falcons and other birds of prey that belong to the American people" (U.S. Department of the Interior 1984). And Attorney General William French Smith stated: "Illegal trafficking in protected wildlife has become an enormous problem. A multi-million dollar illegal market is threatening the existence of some species, and creating an incentive for organized international criminal activities. I am encouraged, however, by our highly effective effort to penetrate the networks of illegal trade in raptors through cooperation, not only among Federal and State agencies, but also with foreign governments. This type of cooperation is essential if we are to eradicate this unlawful commerce before it eradicates our protected wildlife" (U.S. Department of the Interior 1984).

indication of the increasingly adversarial role taken by Law Enforcement occurred in 1977 when Tom Cade—Chairman and founder of the Peregrine Fund—was in violation of the ESA because of not complying with a technicality of his captive breeding permit issued by the FWS. He was in violation because the permitting process under the new Division of Law Enforcement had become unnecessarily burdensome and slow, even for people with unimpeachable credentials and reputations like Cade.[230] At some point in the mid-1970s, Bavin informed Cade that he had a file on him and all his associates, i.e., the Peregrine Fund and the falconers that supported it. The unmistakable message to Cade and the falconing community was to put them on notice that they were under suspicion and very likely under investigation. In order to obtain information on falconers, agents from the Division of Law Enforcement attended falcon conservation and falconry conferences, oftentimes undercover where they stuck out like sore thumbs because of their obvious ignorance about falcons and falconry and because the falconry community is very small and insular. Law Enforcement agents also began staging unannounced visits to falcon captive breeding facilities.[231]

All this, however, was a prelude to the main event; Operation Falcon. The premise behind the operation was that falconers in the U.S. and Canada were illegally "laundering" wild-caught falcons through their captive breeding facilities, especially the large-scale facilities which at the time was synonymous with the Peregrine Fund, by passing off the wild birds as captive-bred in order to feed a multi-million dollar international market financed by wealthy Arabs.[232] There were three factors that seemed to convince the FWS of the existence of a massive black market for wild North American falcons.

First, the FWS tried to breed peregrines in captivity but failed utterly. These efforts took place at the Patuxent Wildlife Research Center, the FWS's premier research facility located some ten miles outside Washington, D.C., where the agency studied a wide range of issues, including on the relationship between DDT and eggshell thinning, as well as efforts to breed imperiled wildlife in captivity. In December 1969 the FWS placed five pairs of peregrines in pens at Patuxent.[233] Over the next 15-20 years the peregrines at Patuxent never had any success

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[230] Cade 1977.

[231] Cade and Burnham 2003b, p.266-68.

[232.] McKay 1989.

[233] Maestrelli and Wiemeyer 1975.

breeding. There was a very simple reason for this. Adult and juvenile peregrines caught in the wild, such as those at Patuxent, very rarely breed in captivity.[234] Had those at Patuxent bothered to consult with those at the Peregrine Fund, who during this same time period were having remarkable success breeding increasingly large numbers of peregrines, they would have learned this.

Also, it appears that the FWS may not have been very committed to captive breeding in the first place. The inception of the peregrine captive breeding program is mentioned in a journal article focused on the FWS's captive breeding program for the bald eagle. After the initial three pairs of eagles were placed in pens in 1969, "the eagles were usually examined once a year. Prior commitments during the 1970-72 breeding seasons precluded detailed observations," stated the FWS.[235] "Extended observations," of the eagles were made starting in 1973, according to the agency.[236] Given the FWS's lackadaisical approach towards bald eagle captive breeding, it is reasonable to assume a similar lack of commitment, to say nothing of ignorance, characterized peregrine falcon captive breeding efforts. Captive breeding of bald eagles, peregrine falcons, or any species for that matter, requires, among other things, meticulous daily monitoring, which the FWS did not do in the case of the case of the eagle and in all likelihood did not do for the peregrines, especially because the agency appears to have been totally unaware that wild-caught peregrines seldom bred successfully in captivity.

It also reasonable to assume that the relative success of the FWS's bald eagle captive breeding program (124 captive-bred eagles released to the wild) played a role in convincing the agency, and especially the Division of Law Enforcement, that it was simply not possible to breed peregrines in captivity.[237] If this perception existed, it was very likely reinforced by the fact that the three of the five pairs of bald eagles at Patuxent as of 1980 consisted of eagles that were adults or sub-adults when they were captured from the wild: one pair had a three year old female; another pair consisted of a male that was taken from the wild as a nestling, released as a sub-adult, and then taken into captivity again as an adult; and a third pair consisted of a male that was

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[234] D'Elia 2010, p.197.

[235] Maestrelli and Wiemeyer 1975, pp.48-49.

[236] Maestrelli and Wiemeyer 1975, p.49.

[237] Nye 2010.

three when captured and a female that was an adult when captured.[238] After all, in the minds of Bavin and others at the FWS, if adult and sub-adult bald eagles could successfully breed in captivity then why couldn't adult and sub-adult peregrines do the same, especially when some of the smartest and most capable wildlife researchers in the country were overseeing captive breeding efforts? It is not hard to image the perception of Bavin, his agents and, perhaps, those at Patuxent: peregrine captive breeding was simply not possible so Cade and company at the Peregrine Fund must be acquiring the increasing numbers of peregrines they were producing, tens and then a hundred or more annually, from the wild.

Second, was the deep-seated antipathy of many at the FWS towards wildlife commerce. Falconers, by dint of acquiring and exchanging birds, were often engaged in commerce, albeit usually on an extremely small scale (e.g., trading or buying one or two birds).

Third, as mentioned, was Clark Bavin, the new head of FWS law enforcement, and the aggressive new agents he was hiring.

Bavin and his staff knew they were at a disadvantage because the falconing community was, and remains, small and tight-knit. So to penetrate the falconing community, the FWS hired Jeff McPartlin, a falconer with a 1972 felony conviction for illegally trying to ship two gyrfalcons, a species of falcon that lives in the Arctic regions of North America, to Saudi Arabia.[239] But by agreeing to testify against his smuggling partner in the 1972 conviction, who was a well-liked former officer of the North American Falconers' Association (NAFA), McPartlin was able to get a reduced sentence. This, coupled with his previous reputation for shady dealings made him an outcast in the falconing community, and he was expelled from NAFA.[240] Of particular note, in the late 1960s in Iowa he operated a mail order "feather merchant" business, the raptor equivalent of a puppy mill, from which he shipped low quality and unhealthy hawks and kestrels (the smallest species of North American falcon) to inexperienced and untrained bird hobbyists in the U.S. Feather merchants like McPartlin were pariahs to the vast majority in the falconing community who took immense pride in their ability

[238] Wiemeyer 1981, p.69.

[239] Shor 1988.

[240] Relegated to the fringes of falconing, McPartlin engaged in and witnessed questionable or illegal dealings of falcons. In 1977 McPartlin tried one last time to be admitted to the North American Falconer's Association. His application was rejected by Kent Carnie, a NAFA vice president and founding board member of the Peregrine Fund. Yet Carnie was overruled and McPartlin was admitted (McKay 1989, pp.27-29).

to undertake the difficult and demanding work of keeping and caring for birds of prey under humane and safe conditions. McPartlin had, to say the least, a checkered career. In addition to being ostracized from the falconing community, the U.S. military rejected him from serving because "he was considered psychologically and emotionally unfit for duty," according to writer and journalist, George Reiger.[241]

As a result of his notorious past, expulsion from NAFA, huge ego, a sense of grandiosity, and the need for a paycheck, McPartlin was desperate to improve his reputation in the falconing community. When he was approached by the FWS Division of Law Enforcement as early as 1975 about becoming a paid informant, he jumped at the chance. When he learned the FWS was convinced of a large-scale black market for falcons existed, he eagerly concurred. But McPartlin's perception of large-scale illegal commerce in falcons was, to a large degree, colored by his dealings on the fringes of the falconing community—which, like the fringes of many communities, contain a few "bad apples"—as well as his desire to retaliate against the leadership of the falconing community that had ostracized him due to his felony conviction and shady dealings.[242]

Also, it is entirely plausible that McPartlin—who, prior to working for the FWS had bounced around from one job to another in the western U.S.—saw being a paid federal informant as a source of steady income. Indeed, given his unscrupulous nature, McPartlin was likely aware that the duration of his employment by the FWS, and hence the amount of money he earned from the agency, was in direct proportion to size of the "problem" he portrayed to the Division of Law Enforcement.

At first, McPartlin was a part-time informant for the FWS, and his initial work in the mid-1970s and early 1980s was not promising. The FWS was only able to garner three convictions on minor infractions, hardly evidence of the large, lucrative market in illegal falcons McPartlin and FWS maintained existed.[243] Yet the FWS and McPartlin were undeterred. Based in no small part on McPartlin's claims of a major international black market in falcons—with

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[241] Reiger 1985, p.23.

[242] Shor 1988, p.832.

[243] McKay 1989, p.31.

gyrfalcons selling for as much as $100,000—the FWS launched Operation Falcon in 1981.[244] At this point the FWS hired McPartlin full time.[245]

The goals of the Bavin and McPartlin meshed perfectly. If successful, Bavin would be able to put a big notch on his belt and the FWS Division of Law Enforcement would likely get a budget increase—empire building pure and simple. Success for McPartlin's seemed to mean he would be able to rehabilitate his tarnished reputation by being the knight in shining armor who rescued falconing from what he perceived as the unscrupulous people who had come to dominate it. In so doing he would also get revenge on the falconing community that had shunned him, and he would be able to earn some much-needed income.

McPartlin was especially embittered towards the Peregrine Fund and seemed keen on doing it harm for two apparent reasons; his dealings with some of the Fund's leaders as well as the Fund's prominence. In 1977, when Kent Carnie, one of the early directors of the Peregrine Fund and its longtime archivist, was Vice President of the North American Falconers' Association (NAFA) he led efforts to deny McPartlin membership in NAFA because of his shady reputation, his having been a feather merchant, and the gyrfalcon conviction. Carnie, however, was overruled by others in NAFA's leadership and McPartlin and was granted membership.[246]

McPartlin's activities also led him to cross paths with two people from the Peregrine Fund. Sometime in the late 1970s to early 1980s, a falcon released by the Peregrine Fund at a hack site disappeared before it should have (i.e., before it was ready to leave the release area to survive on its own). But the falcon happened to have a radio transmitter so its movements could be tracked. As it turned out, McPartlin brought that same transmitter to a repairman who reported the serial number to the Peregrine Fund. Jim Weaver and Bill Burnham of the Peregrine Fund reported McPartlin to the FWS Division of Law Enforcement.[247] Apparently no charges were filed against McPartlin because by this point he was a paid federal informant. It is entirely possible McPartlin broke the law by capturing the peregrine. If so, this would not be the

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[244] McKay 1989, p.33.

[245] Shor 1988, p.832.

[246] McKay 1989, pp.27-29.

[247] Cade and Burnham 2003b, p.271.

last time the FWS or people in its employ violated the Endangered Species Act, as well as other federal laws, by illegally taking peregrines from the wild. But there is little doubt McPartlin learned about Weaver's and Burnham's attempt to turn him in.

McPartlin also seems to have been motivated by simple jealousy, a desire to damage or destroy the Peregrine Fund because of its prominence and success. The Fund represented all that McPartlin was not; successful, well-funded, in possession of an unimpeachable reputation, associated with those in falconing community who were honest and ethical, and able to garner increasingly positive attention in the media. In a certain sense, the Peregrine Fund and its success were beyond the comprehension of someone like McPartlin whose life consisted of lies, failures, and shady dealings.

When Operation Falcon broke in 1984, it was clear that the Peregrine Fund was the foremost target of the FWS. Falconers and falcon conservationists across the country were interviewed and many of them were asked specific questions about the Peregrine Fund. Yet the FWS was unable uncover any incriminating information about the Fund or its employees, and was unable to obtain any warrants for search, seizure or arrest of any Peregrine Fund employees or facilities because, of course, the Peregrine Fund was innocent.[248] In short, Operation Falcon was a sham, built almost entirely on false or non-existent data, and the lies and thirst for power on the part of Clark Bavin and Jeff McPartlin. This is substantiated by fourteen points.

First, is simple logic. If, as the FWS alleged, the major peregrine captive breeding facilities were not actually breeding peregrines but instead were the leaders of a massive conspiracy to launder wild-caught falcons for sale to the Middle East, then it was one of the most open and transparent conspiracies in history. Captive propagation of peregrines, especially the efforts of the Peregrine Fund and other large-scale breeding facilities, was widely known and easy to find out about. The leaders of captive propagation efforts were eager to publicize their efforts, in part to gain credit, but also out of a desire to attract funding. In order to do this they needed to demonstrate their competence and progress. The pioneers of captive breeding efforts eagerly shared their methods, trials-and-errors, and successes in many publications. Falcon breeders published extensively starting in 1976 in the Raptor Research Foundation's journal, which had been established for precisely that purpose.[249] Those in academia, such as Tom Cade

[248] Cade and Burnham 2003b, pp.271-272.

[249] Beebe 1967; Lejune 1971; Galicz et al., 1971; Nelson 1971; Schwartz 1972; Nelson 1972; Jones and White 1978; Barclay and

at Cornell and Jim Enderson at Colorado College—who were under pressure, as all professors are, to "publish or perish"—readily published scholarly articles on captive breeding, beginning in 1967.[250] Furthermore, starting in at least 1972 the Peregrine Fund published an annual report on captive breeding and release efforts in which the Fund provided detailed data on its efforts.[251] The Peregrine Fund also published two manuals summarizing much of their work; one on releasing peregrines to the wild by the hacking method and published in 1981, and the other on captive breeding and published in 1983.[252] The FWS had the ability to access all of these publications that were available years, in some cases more than a decade, before Operation Falcon commenced.

Furthermore, because all the major captive breeding facilities received public funding, they could be inspected by public officials, including those from law enforcement agencies. The Peregrine Fund began receiving federal funding in 1975, which would have entitled the FWS's Division of Law Enforcement to inspect the Fund's facilities. If the FWS was so concerned the Peregrine Fund was laundering wild caught peregrines, then the Division could have even stationed one of their officers at the Peregrine Fund full time, which would have cost tens of thousands of dollars annually, instead of the millions of dollars spent on Operation Falcon. Not only would stationing someone at the Peregrine Fund have saved the FWS a great deal of money, but it would have provided the Division of Law Enforcement with irrefutable evidence that the Fund was a legitimate captive breeding and release facility.

Clark Bavin, however, had no interest in such a practical, cost effective and ultimately conclusive means to determine the legitimacy of the Peregrine Fund and other captive breeding operations. In order to build him empire he needed to engage in big, splashy investigations, spend lots of money, use tens-of-thousands of man hours, and spend years doing so; not spend a few tens of thousands of dollars on an obscure initiative to prove conclusively that captive breeding of peregrines was possible.

Cade 1983; Burnham et al., 1978.

[250] Enderson 1967; Cade 1975; Schwartz et al., 1977; Cade 1978; Cade et al., 1978; Cade 1980; Barclay and Cade 1983; Burnham 1983.

[251] Cade 1972.

[252] Sherrod et al., 1981; Weaver and Cade 1983.

Second, the number of birds claimed to be involved in illegal commerce—by the FWS, and some pressure groups (notably the National Audubon Society and Environmental Defense Fund)—cannot be substantiated.[253] According to an extensive account of Operation Falcon:

> "[T]he 400 birds [both peregrines and non-endangered gyrfalcons] which USFWS agents estimated were involved in black-market trading between 1981 and 1984 all but melt under scrutiny. When pressed to account for the numbers, the USFWS replied that the figure was partly based on Canadian estimates. But when the Canadians were pressed to account for the figure, they said it had originated with the USFWS."[254]

Even at the time of Operation Falcon, the FWS was aware that these numbers could not be substantiated, but persisted in using them in order to make the operation appear more impressive than it actually was. In October 1984, Clark Bavin, Chief of FWS Division of Law Enforcement, reportedly admitted—in a private conversation to some falconers during the annual meeting of the Raptor Research Foundation in Blacksburg, Virginia—that the 400 falcons claimed to be involved in Operation Falcon could not be substantiated or verified from FWS records.[255] This assertion about Bavin's admission was made by Frank Bond one of the founders of the Peregrine Fund and a lawyer, at a Congressional hearing in 1985. The purpose of the hearing was to uncover information on Operation Falcon, and it was attended by Bavin and others at the FWS as well as Bond Tom Cade and others in the falconing community. Given the high emotions about Operation Falcon, Bond's assertion was explosive. Yet nobody from the federal government, including Bavin, who testified at the hearing, contradicted or otherwise challenged Bond's assertion. The only conclusion, then, is that it was true. Nevertheless, in public the FWS insisted that 400 falcons were involved, despite that the agency knew this number to be unverifiable.

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[253] According to Michael Bean of Environmental Defense; "An [*sic*] FWS undercover investigation, dubbed 'Operation Falcon,' revealed an extensive black market in peregrines and other birds of prey. At least 71 peregrines were found to have been taken illegally from the wild in the United States. Most subsequently were claimed falsely to be captive-bred birds entitled to the act's special Raptor Exemption (Leape 1985)" (Bean 1986, pp.361-62).

[254] McKay 1989, pp.207-208.

[255] Bond 1985a, p.161.

When Operation Falcon broke in 1984, the FWS apparently claimed 181 peregrines were illegally taken or smuggled in the U.S.[256] In 1985 the FWS reduced to 71 the number of peregrines taken illegally in addition to 19 other peregrines involved in illegal activities, such as manipulating leg bands or transporting falcons without proper permits.[257] However, the FWS has not been able to substantiate even these numbers. Furthermore, backpedalling is a sure sign of weak or perhaps non-existent evidence

A meticulous analysis of publicly available court documents was carried out by Williston Shor, then editor of *Hawk Chalk*, the journal of the North American Falconers' Association. Shor's analysis revealed that the FWS actually claimed only 35 peregrines were involved in illegal activity the U.S. Yet 11 of these birds were not based on credible information so the more accurate number is 24 peregrines. In addition, of the 35 alleged peregrines, only 16 were allegedly sold illegally. However, because some of these 16 were not based on credible information—in this case, statements by a notorious German smuggler well known for dishonesty—the more accurate number is 10 peregrines sold or transferred illegally.[258]

More significantly in terms of the ESA, it appears that only ten wild American, or *anatum*, peregrines and two wild *anatum* eggs, were from the U.S. (there were initially 9 peregrines and three eggs, which later became 10 peregrines and 2 eggs when one of the three eggs taken illegally by FWS agent Gavitt and Jeff McPartlin hatched—this illegal taking is detailed below in point #4).[259] The existence of five additional *anatum* eggs were not from a credible source, did not result in charges being filed and so must be discounted. All the other credible instances of peregrines involved in illegal activity were either *anatum* peregrines from Canada (5 birds), or *tundrius*, or Arctic, peregrines trapped in the U.S. on their fall migration to Central and South America (6 birds, one of which was released after a couple weeks in captivity).[260] These *tundrius* peregrines were most likely not from Alaska, where a couple hundred or so pairs were protected under the ESA, but rather from Canada, where a massive

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[256] Shor 1988, p. 835.

[257] Lambertson 1985b, p.462.

[258] Shor 1988, pp.835-838.

[259] Shor 1988, pp.835-838.

[260] Shor 1988, pp.835-838.

population of a couple thousand pairs existed, as is detailed in the profile on the Arctic peregrine falcon. So simple probability dictates that these six *tundrius* peregrines caught in the U.S. were very likely from Canada.

In addition, there was virtually no significant number of peregrines from Canada being exported illegally. Of the wild peregrines in the U.S. involved in Operation Falcon, only eight were from Canada. All eight were sold by a smuggler to McPartlin, and McPartlin then sold five to five different buyers in the U.S.[261] The FWS claimed that a total of forty peregrines were illegally taken in Canada during Operation Falcon, but the agency never substantiated this claim.[262]

The overall conclusion to be drawn from these data on the actual number of illegal falcons from the U.S. is mind-boggling because the FWS claimed Operation Falcon involved hundreds of illegal falcons. Operation Falcon was a farce because there was no large-scale black market for illegal falcons, and captive breeding operations were not laundering wild caught falcons. Operation Falcon stretched over three years, which does not even take into account that the FWS was building towards the operation for at least seven years prior to its launch, and involved the expenditure of millions of dollars. And what was there to show for this? Innocent people ensnared and their lives seriously impacted, as well as captive propagation and conservation efforts hindered—all for only ten *anatum* peregrines from the U.S., which at the time was an insignificant portion of the population, and perhaps, but almost certainly not, four or five U.S. *tundrius* peregrines.

Third, the alleged taking of peregrines from the wild was not a threat to either the *anatum* or *tundrius* sub-species. Audubon claimed, "traffic in peregrines threatens the recovery of wild populations."[263] But according to Tom Cade of the Peregrine Fund, "Contrary to what the Audubon people have been saying…taking [falcons from the wild]…whether it is legal or whether it is illegal, is not a threat to the continued existence of wild populations of peregrine falcons. There is no basis in biological fact for this idea, and it is not a valid reason for demanding more rigorous rules or control or for shutting off legal commerce in domesticated

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[261] Shor 1988, pp.835-838.

[262] Shor 1988, pp.835-838.

[263] Leape 1985b, p.546.

peregrine falcons." As Cade pointed out, at the time he made this assertion in 1985, peregrine populations in all regions of the U.S.—east of the Mississippi, Midwest, Rocky Mountains, Pacific Coast, and Alaska—were increasing and had been for a few years.[264] Presumably if there was a major drain on the populations due to illegal commerce, as supporters of Operation Falcon alleged, then this would have been reflected in declining populations.

Fourth, "[i]n the United States, during the period of Operation Falcon, the biggest supplier of wild falcons for export to the Middle East was the United States government," according to Paul McKay, a journalist who wrote a book about the fiasco.[265] Almost all of the peregrines involved in illegal international commerce originated in Canada, not the U.S.[266]

Fifth, the FWS and perhaps its informant, Jeff McPartlin, very likely violated wildlife laws, most notably the Endangered Species Act, but also the Migratory Bird Treaty Act and perhaps other laws, during the course of Operation Falcon. Towards the end of the Operation, the FWS was growing increasingly desperate to show that peregrines were being taken in the U.S. Almost all the birds involved in Operation Falcon to that point were from Canada, which is also where the two falcon smugglers who were the main culprits snared by the Operation were located. As a result of the FWS's increasing desperation, the agency appears to have violated the ESA in order to "prove" that U.S. peregrines were involved. On May 18-19, 1984 John Gavitt,

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[264] Cade 1985b, p.498.

[265.] McKay 1989, p.207.

"Internal documents of the USFWS show that Jeff McPartlin [a U.S. citizen, convicted in 1971 on federal felony charges of illegally transporting falcons across the U.S. border from Canada, hired by FWS to infiltrate the "illegal" falcon trade during Operation Falcon] sold the Ciesielski family [notorious German falcon smugglers] nineteen gyrfalcons and three prairie falcons for $112,000. The average purchase price was just over $5,000 for falcons the USFWS was claiming could be resold for up to $100,000 each. The Ciesielskis were not only Cowboy's [McPartlin's nickname] biggest Middle East customers, they were his *only* customers. No other person was convicted in the United States—or even charged—for exporting wild gyrfalcons or peregrines to the Middle East" (McKay 1989, p.207). "Every falcon sold to the Ciesielskis was either trapped from the wild by McPartlin, or taken from nests in Alaska by [U.S. Fish and] wildlife service agents. Clearly, the Ciesielskis were notorious, willing smugglers. But, McPartlin was the only demonstrated person in the United States who would sell illegal gyrfalcons to them. Subtracting McPartlin's dirt-cheap gyrfalcon sales, there was not a single U.S. shipment of wild gyrfalcons or peregrines to Arabia" (McKay 1989, p.207). "There *were* major operators—the Ciesielskis, Luckman, and John Slaytor. But did they constitute a multimillion-dollar trade?" (McKay 1989, p.208). "The biggest smugglers in the United States were the Ciesielskis, who paid $112,000 over more than two years for twenty-two falcons supplied by a single source—the United States government. The other major U.S. dealers, Steve Baptiste and Dave Jamieson, were convicted and fined $20,000 for illegally exporting *hybrid* falcons without permits. They, along with those in the Peter Whitehead shipment that began Luckman's smuggling career, were not wild birds. They were legally bred in captivity, but shipped from the United States without legal export papers" (McKay 1989, p.208). "The other celebrated case involved a California wildlife bandit name DeCarnelle who illegally *imported* fourteen wild Finnish goshawks into the United States, with the advice and encouragement of McPartlin. Perhaps the most despicable of the Operation Falcon dealers, the unscrupulous crook pled guilty, plea-bargained, and was find $30,000" (McKay 1989, p.208).

[266] Shor 1988, pp.835-838.

one of the FWS Special Agents in charge of Operation Falcon, and Jeff McPartlin accompanied two falconers to a peregrine nest on cliffs by Lake Powell in Utah, on land administered by the National Park Service, so that they could remove eggs. McPartlin and one of the falconers directed Gavitt and the other falconer. Gavitt manned the safety rope at the top of the cliff so that the other falconer could get down the cliff to the nest where he took three eggs. Gavitt then used a rope to pull up the box with the eggs inside and then, of course, manned the rope while the falconer climbed back up the cliff.[267] According to Will Shor, the person who conducted the most extensive investigation of the so-called evidence involved in Operation Falcon, no evidence could be found by him or others in the falconing community who closely examined the Operation that the FWS obtained a federal permit to remove these three eggs and to disturb the nesting pair of peregrines. Obtaining the eggs and disturbing the nesting peregrines without a permit would have placed the FWS in violation of the ESA and other federal laws.[268]

The eggs were placed in an incubator at McPartlin's house. Even though all three eggs were viable at the time they were taken, only one hatched.[269] This was not surprising because McPartlin had very little, if any, experience caring for eggs. Had these eggs been cared for by competent breeders, like those at the Peregrine Fund, they very likely would have hatched because not only were they viable but they were in the latter stages of incubation. So the FWS was directly responsible for the death of two peregrines. Yet the FWS falsely claimed, and perhaps lied, in a Congressional hearing, "No endangered falcons were taken from the wild by the Service."[270] Even people associated with the Peregrine Fund personally confronted Clark Bavin and Don Car, an official with the Justice Department, about Agent Gavitt's apparent violation of the ESA, they failed to file charges.[271]

One of the many ironies of Operation Falcon is that during the course of the operation the Interior Department said it was especially worried about the purported illegal take of peregrines from the western U.S., "where they are highly endangered, " according to Ron Lambertson, a

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[267] Bond 1985a, p.167.

[268] Shor 1988, p.833.

[269] Bond 1985a, p.167.

[270] Lambertson 1985a, p.173.

[271] Cade and Burnham 2003b, p.271.

senior official at the Interior Department.[272] "[B]ut when they [falconers] remove them [peregrines] from States like Utah and Colorado where there are very few breeding pairs, we are very concerned," added Lambertson.[273] He made these comments at one of the Congressional hearings that looked at Operation Falcon. Ironically, it was FWS agent Gavitt who was responsible for taking peregrines from the western U.S.

During the time of Operation Falcon, the FWS was documented as being responsible for taking the most peregrines from the lower 48 states. Also, the FWS aided McPartlin in taking several gyrfalcons from Alaska, in apparent violation of state and federal wildlife laws, as there was no evidence the FWS or McPartlin obtained the necessary federal and state permits to take and then transfer the birds.[274] There were also several times during Operation Falcon that members of the falconing community informed various federal wildlife officials about McPartlin's illegal activities.[275] On five separate occasions during Operation Falcon people in the falconing community alerted law enforcement authorities about McPartlin's illegal activities; once to federal authorities in New York, once to state authorities in Wyoming, and three times to state authorities in Montana.[276] This willingness by falconers to police themselves by turning to authorities is yet more evidence that most of the falconing community was composed of honest, law abiding citizens, which is a far cry from their portrayal by the FWS and some pressure groups.

Sixth, the high prices for peregrines claimed by the FWS and the National Audubon Society, which were cited as evidence of the large and lucrative market for peregrines, could not be substantiated. The FWS claimed that in the U.S. peregrines were being sold for as much as $2,000 and gyrfalcons for $10,000.[277] Audubon initially claimed the price for peregrines was "$4,000 in this country, and over $6,000 on international markets."[278] Audubon subsequently increased the amount to "prices reaching $10,000 a bird."[279]

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[272] Lambertson 1985b, p.476.

[273] Lambertson 1985b, p.476.

[274] Bond 1985a, p.167.

[275] Berry 1985, p.478

[276] Bond 1985a, pp.161-162.

[277] U.S. Department of the Interior 1984.

[278] Leape 1985a, p.154.

These prices were figments of the FWS's and Audubon's imaginations. From 1983-85, the median price for captive bred-peregrines, either from the U.S. or Canada, sold to U.S. citizens declined from $2,000 to $1,500. Most notable was that this price drop occurred from 1984-1985, which is when the Raptor Exemption regulations to the ESA, which allowed certified falconers to buy and trade falcons, went into effect. As a result, in 1984 commercial captive breeding took off. In 1984 four U.S. breeders sold 26 of their 44 captive bred peregrines to U.S. citizens, an increase from zero the year before when a single Canadian breeder sold all of the 30 captive bred peregrines purchased by U.S. citizens.[280] The fact that actual prices were far lower than claimed by the FWS and pressure groups is yet more evidence that the purported vast black market simply did not exist. As the law of supply and demand dictates, when something is scarce it costs more, when it is more abundant it costs less. So as the supply of legal captive-bred peregrines increased, the price naturally dropped.

One facet of Operation Falcon consisted of an effort by the FWS and pressure groups to portray falcon breeding as big business, but this was simply not the case. Almost all breeders had relatively small operations, which typically consisted of a few peregrines. So selling falcons was really more of a way to recoup costs, than to make a profit by people who simply enjoyed flying and breeding falcons.[281] The few large breeders were formal organizations like the Peregrine Fund that, as mentioned, could easily be audited and monitored by the FWS if it wanted to do so.

These realities, however, were lost on the FWS, Audubon and other pressure groups. They contended that legal commerce in peregrines encouraged illegal commerce. This view reflects basic ignorance of how laws and economics function. Efforts to prohibit commerce in products , such as alcohol in the early 20th century, demonstrates that this causes illegal activity and prices to increase and quality to decrease. But when commerce is legalized, the black market dries up, crime subsides, prices drop, and the quality of the product improves, as occurred

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[279] Leape 1985b, p.546.

[280] Berry 1985, p.480.

[281] As Robert Berry President of the North American Raptors Breeders' Association put it in testimony before Congress, "Falcon breeding is not a business, as some have stated. It is really a labor of love. Nevertheless, the breeder, like the amateur dog and cat breeder, is entitled to some sort of compensation for his basic costs. This cost recovery concept has been a tremendous incentive to peregrine falcon breeding programs encouraging more breeders to get into the breeding business and enabling these breeders to purchase valuable breeding stock that was not otherwise available." (Berry 1985, p.478).

in the U.S. after the passage of the 21st Amendment to the Constitution in 1933, which ended Prohibition. As pointed out in the profile of the American alligator, Prohibition led to an increase in the murder rate, and the repeal of Prohibition led to a decrease in the murder rate.[282] The same logic about the negative impacts of trade bans applies to peregrine falcons. Furthermore, the belief that legal commerce spurs illegal commerce is the same fallacious thinking employed by opponents of trade in American alligator hides and parts.

Seventh, pressure groups fabricated or exaggerated data to make Operation Falcon appear more substantial than it actually was. As it did with the American alligator, the National Audubon Society led the charge to support Operation Falcon, and one of the reasons was the group's long-standing opposition to wildlife commerce even if the facts were not in its favor and even if commerce was beneficial to a species' conservation.

On June 29, 1984 the Department of Interior issued a press release announcing thirty arrests had been made as a result of Operation Falcon.[283] That same day the National Audubon Society also issued a press release that increased the number of people arrested in the U.S. to fifty. Audubon's press release also falsely claimed that several leaders and officers of the North American Falconers' Association—incorrectly called the "North American Falconry Association" in the press release, in yet another demonstration of Audubon's ignorance of the issue at hand—were arrested.[284] In a subsequent interview with Alaska Public Radio, Amos Eno a spokesman for Audubon, admitted the fifty arrests were the result of his own estimates for which he had no substantiation, which is just a fancy way of saying he fabricated them.[285] Eno was obviously communicating closely officials at the Interior Department because he had been leaked the press release announcing Operation Falcon. This was not surprisingly given his close ties with Interior. He had been the assistant to Nathaniel Reed, the Assistant Interior Secretary for Fish, Wildlife and Parks from 1971-77, and knew Bavin from his time at Interior.[286] Audubon's press release also apparently quoted Eno calling for Congress to appropriate $2

[282] Jensen 2000.

[283] U.S. Department of the Interior 1984.

[284] Bond 1985a, p.161.

[285] Bond 1985a, p.161.

[286] Cade and Burnham 2003b, p.271.

million so the FWS could hire twenty more law enforcement agents in order to strike against the illegal falcon trade.[287]

Audubon, however, was not alone in its falsehoods and enthusiasm for Operation Falcon. The convictions stemming from Operation Falcon are only the "tip of the iceberg," claimed Kathryn Fuller, then World Wildlife Fund (WWF) U.S. vice president. She would go on to be WWF's president from 1989-2005 and Chair of the Ford Foundation from 2004-2010. "A thriving, extremely lucrative trade in endangered birds of prey caught in the wild, primarily for falconry, poses serious threats to populations of some of these birds," she added.[288] Fuller's career at this point provided an indication of her views on Operation Falcon and wildlife trade in general. After graduation law school in 1976 Fuller went to work for the U.S. Department of Justice, initially in Office of Legal Counsel and subsequently as an attorney in the Land and Natural Resources Division. While in the Division, she assisted in creating the Wildlife and Marine Resources Section, which she led from 1981-82. It is highly likely that Fuller, as the head of the portion of the Justice Department's that dealt with wildlife, was aware of Operation Falcon and presumably supported it. When Operation Falcon broke, Fuller was the Director of TRAFFIC U.S.A. (Trade Records Analysis of Flora and Fauna in Commerce), the parent body of which was established by the IUCN, the International Conservation Union. TRAFFIC U.S.A. was established as a program office of WWF U.S., and as such it was supposed to be the foremost expert on wildlife commerce in the U.S.

TRAFFIC U.S., however, had extremely poor knowledge of falcon trade in the U.S., as Fuller's comment revealed. Another possibility for Fuller's stance on Operation Falcon, given her career to this point, was that she was a true believer in the incompatibility between wildlife conservation and wildlife trade. Or perhaps Fuller did have accurate information about falcon trade in the U.S. but she chose to ignore it in order to jump on the Operation Falcon bandwagon and grab some attention in the media for herself and her employer, WWF U.S.

This latter explanation is very plausible given that in 1989, following her appointment that year as President and Chief Executive of WWF U.S., she oversaw the key role played by the organization in orchestrating the international elephant ivory trade ban. As detailed in the book *At the Hand of Man* by Raymond Bonner, the ban was implemented over the strenuous

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[287] Cade and Burnham 2003b, p.270.

[288] Rheem 1986.

objections of WWF staff in southern Africa because ivory commerce was an important part of several country's—most notably Zimbabwe, Botswana and Namibia—conservation strategies. These countries had large and increasing elephant populations, which were due in no small part to commerce-linked conservation programs. By contrast, in countries like Kenya and Tanzania that had outlawed hunting and commerce, elephant populations were declining. Most of the people in these countries who bore the costs of living with elephants were rural peasants who had to bear the burden of living with animals, including the elephant, that would destroy crops and sometimes kill them. Unable to benefit financially from elephants, people resorted to the cattle-and-crops solution, i.e., displacing elephants and other wildlife with forms of land use from which they could earn money.

In the lead-up to the ivory ban, WWF U.S. was well aware of these realities and the tension over them that existed between southern and eastern African countries. But WWF decided to side with the pro-ban camp in large part because Fuller and others in the organization perceived the ban as an opportunity to raise previously undreamed of funds due to the media spotlight on the issue. A key aide to Fuller was Buff Bohlen, the former Interior Department official who conspired with two other people to write the provisions of the ESA that made it such a powerful land use control law.

In short, the views of those who were actually on the ground conserving elephants in southern Africa took a back seat to a cynical calculation on the part of Fuller and WWF to favor funding and public relations over sound and successful wildlife conservation. Not only was the ivory ban bad for elephant conservation but it ran roughshod over the sovereignty of countries that opposed to the ban had over their own resources. The ivory ban was, and remains, one of the foremost examples of the pressure groups implementing their anti-commerce agenda, as well as what has come to be known as eco-imperialism. Ironically, people like Fuller and those at other environmental pressure groups tend to see themselves as advocates for the poor and disposed of the Third World, and as opponents of colonialism and imperialism. Yet by supporting the ivory ban these people and groups were engaging in precisely the type of imperialistic behavior they purported to abhor.

Eighth, Operation Falcon was all the more of a debacle given the meager convictions that were secured.[289] In 1986 the FWS touted fifty-five convictions, and a total of more than

[289] "Among the sixty-eight convictions, there were only five felony convictions, including the controversial Doyle decision. The

$324,000 in fines, as a result of Operation Falcon.[290] A total of sixty-eight convictions of U.S. wildlife laws were eventually secured, along with almost $500,000 in fines.[291] In the U.S., thirty

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rest were misdemeanor penalties. Those conviction figures pale beside the eighty pending felonies announced by the USFWS in June 1984, and indictments cited by USFWS officials for 438 violations of federal statutes. Few of the misdemeanor convictions involved schemes for commercial profit; most involved falconers who bought or traded illegal birds for personal use only. Almost all [convictions] involved deals with McPartlin, who regularly sold falcons at cut-rate prices, traded for them, or simply gave them away. Twelve of the thirty-six gyrfalcons the USFWS took from the wild, for instance, were given away. There were also several multiple convictions for the same falcon originally taken from the wild by McPartlin. In one case, Cowboy [McPartlin's code name] sold a gyrfalcon to an Illinois falconer, who sold it to his Canadian cousin. That cousin sold it to Glen Luckman, who delivered it back to McPartlin in November 1983. Cowboy then sold it to the Ciesielskis three days later. Each recipient of the gyrfalcon was charged with an offense. Given these facts, it is difficult not to conclude that Operation Falcon was largely a PR mirage—a straw man secretly set up and then publicly knocked down by U.S. and Canadian wildlife agencies" (McKay 1989, p.209).

"The conviction of Dr. James Doyle, a plastic surgeon from Texas who also rehabilitated, at his own expense, over 400 raptors. In addition, he was a falconer. The charges, and subsequent conviction, of Doyle had all the appearances of entrapment. McPartlin contacted Doyle and offered him two wild caught peregrines. Doyle said he was interested in acquiring the peregrines but only if they had proper documentation. "'McPartlin did tell me the birds were coming out of the wild. That did take me aback. But I said I absolutely would not take them unless they had legal [leg] bands, and a legal transfer permit [from the state of Montana]. My thinking was, if there was a chance the falcons were coming from the wild, the state of Montana could pick this up. They would never give him a permit.' But, under the direction of the USFWS sting operatives, the state of Montana did. When Doyle arrived in Great Falls [Montana], McPartlin had official leg bands, matching state and federal permits, a phony breeding permit, and phony breeding-age peregrine falcons to convince Doyle that the birds, were, in fact, legally captive-bred. Only then did the Texan agree to buy the peregrines" (Ibid, pp.204-205).

Doyle's appeal was ruled on by the 9th Circuit Court of Appeals (U.S. v. Doyle, United States of America, 786 F.2d 1440 (9th Cir. 1986)). The highly questionable portion of conviction on the basis of violating the Lacey Act—a federal statute that makes interstate transport of wildlife a crime if it is in violation of state law—was upheld. However, the portion of the conviction for violation of the Endangered Species Act was overturned, and the text of this portion of the ruling provides yet more evidence that Operation Falcon was a farce:

"To convict Doyle, the government must prove beyond a reasonable doubt that the falcons which Doyle transported were anatum peregrine falcons (falco peregrinus anatum). Doyle contends that there is no credible evidence to show that the falcons were anatum peregrine falcons. We agree.

"The government relied primarily on the testimony of McPartlin. He identified the falcons from memory, and through photographs, as anatum peregrine falcons. When asked how he knew the nestling falcon (newborn) was an anatum peregrine, he replied, 'I base that on the fact that that is the only subspecies of peregrine falcon that nests within the state from which that bird came in the wild state.' He conceded that he could not conclusively make the identification on the bird's features. McPartlin also testified to the identity of the other bird, the immature falcon, by the location where it was trapped.

"The government may establish the identity of an object through circumstantial evidence, United States v. Sanchez, 722 F.2d 1501, 1506 (11th Cir.), cert. denied, 104 S.Ct. 2396, 104 S.Ct. 2396, 81 L.Ed.2d 353 (1984), but here the circumstantial evidence was based on hearsay and should not have been admitted. McPartlin had no first-hand knowledge of the falcons' origins. He was told by other government agents where the falcons had been trapped. This evidence is suspect because the man who allegedly trapped the nestling falcon was available, but the government elected not to call him. At the time of trial, the government also had possession of the falcons which they had seized. Because of the age of the falcons, the government was in a position to make a positive identification. The government elected not to do it.

"The government argues that McPartlin's identification of the immature bird was on the basis of its characteristics in addition to its place of origin. McPartlin's identification was contradicted by other evidence in the record. The physical features which McPartlin described were not sufficient to justify his conclusion, particularly when the government failed to bring in other available evidence which would have positively established the species of the falcons.

"Because we find that there was insufficient evidence to identify the falcon as an endangered anatum peregrine falcon, we need not reach the other issues raised by Doyle under the Endangered Species Act. In addition, because we reverse on count III, the Endangered Species Act count, involving the need to identify a specific subspecies, we find it unnecessary to dispose of appellee's motion to strike material attached to appellant's reply brief."

[290] "A major investigation that included endangered species and resulted in successful prosecutions in 1985 was 'Operation Falcon,' which revealed a variety of illegal activities, such as the taking of anatum peregrine falcons from the wild. To date, 55

people were arrested initially when Operation Falcon was announced, most of whom were charged with felonies under the Lacey Act, a federal statute that prohibits interstate transport or commerce of wildlife that has been taken in violation of state law. Of those arrested, three went to trial, and two of the trials resulted in prison sentences. Almost all of the other cases were plea bargained, fines were assessed, and nearly all the charges were reduced to misdemeanors.[292] Those arrested agreed to misdemeanors, even though they knew they were innocent, because they also knew the U.S. government was on a witch-hunt. So these people took the path of least resistance, plead guilty and paid small fines rather than face possible financial ruin and the emotional stress of going up against the massive resources of the U.S. Department of Justice.

Ninth, part of the reason for the uncritical support environmental pressure groups gave to Operation Falcon stemmed from one of the 1978 amendments to the ESA, specifically the "Raptor Exemption," which, as its name implies, exempted owners of raptors from the ESA's punitive regulations. Specifically, endangered or threatened raptors held in captivity on or before November 10, 1978, or any progeny from such raptors, were exempt from the ESA's prohibitions, most notably restrictions on interstate commerce. While the exemption covered all raptors, in effect it applied almost solely to peregrine falcons because the peregrine was the only raptor listed under the ESA coveted by falconers. Congress passed the amendment at the behest of falconers and captive breeders because, as discussed above in the section titled "Captive breeding," they contended that captive propagation of peregrines was essential for the conservation of the sub-species. Falconers and breeders were well aware they were under suspicion from the FWS and pressure groups so they saw the Raptor Exemption as a means to

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people have been convicted of violating wildlife protection laws involving birds-of-prey, including the Endangered Species Act,and fines now total more than $324,000" (U.S. Fish and Wildlife Service 1986a).

[291] McKay 1989, p. 208.

[292] Shor 1988, p.834.

provide them with legal protection, as well as a means to facilitate the transfer and sale of peregrines that routinely occurred among those involved in captive breeding operations.[293]

The conservation benefit of captive breeding was lost on pressure groups due to their general opposition to wildlife commerce. An indication of these groups' opposition is they accepted uncritically the FWS's false data on which Operation Falcon was initiated, carried out and concluded.[294] "Absent the very serious tightening of those regulations, the Act's Raptor Exemption is likely to remain a significant loophole complicating law enforcement and species recovery efforts," claimed Michael Bean of the Environmental Defense Fund.[295] After he made this statement in 1986, peregrine populations continued to increase rapidly to the point both listed sub-species were delisted.

Even though Congress passed the Raptor Exemption in 1978, the FWS dragged its feet for more than four years and did not promulgate the proposed regulations necessary to implement the exemption until January 1983. Two of the likely reasons for this delay were the FWS's opposition to commerce, coupled with the agency's general ignorance of falconry and falcon breeding. The proposed regulations were supposed to provide a mechanism for the legal sale of captive-bred raptors to qualified individuals (i.e., people who had the necessary government permits and certification from the North American Falconers' Association). The

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[293] There were, and are, several conservation benefits of commerce in peregrines: commerce creates incentives for people to breed peregrines and these peregrines can then be released to the wild; captive bred peregrines can take pressure off wild population by providing a ready supply of birds for markets; were a catastrophic event—such as fire, a destructive weather-related storm, or disease—to occur at one of the major breeding facilities from which birds were being released to the wild, such as the Peregrine Fund's facility in Idaho, the network of breeders across the county could serve as an insurance policy against this type of catastrophe and as a source of peregrines with which a major facility could be reconstituted; and commerce can help increase the genetic diversity of captive birds.

[294] According to James Leape Council for Wildlife Programs, National Audubon Society:

"The reason for our concern is twofold. First, it is clear that the provisions allowing transportation and sale of peregrine falcons have weakened the protection of that species…Operation Falcon revealed that there is substantial take of peregrines from the wild under cover of the Raptor Exemption. What I mean by that is that a significant number of people, falconers and others, are taking peregrines from the wild, banding them as exempt birds that is, as captive-bred birds, and then transporting them in interstate commerce and selling them.

"It is also clear that so long as sale and transportation in interstate commerce is allowed, it will be very difficult to prevent those takings, because, as has been recognized since the beginning of federal wildlife law enforcement, prohibitions on interstate commerce in protected species are essential to the protection of wild populations" (Leape 1985a, p.150).

Michael Bean of Environmental Defense stated, "Although the measure [the Raptor Exemption] passed easily in 1978, it was not without its critics, who contended that by allowing commercial transactions in captive birds, unscrupulous individuals would be tempted to remove birds from the wild and try to pass them off as captive bred birds. That fear soon proved to be well founded. An [*sic*] FWS undercover investigation, dubbed 'Operation Falcon,' revealed an extensive black market in peregrines and other birds of prey (Bean 1986, pp.361-62).

[295] Bean 1986, pp.361-62.

impetus behind the proposed regulations were; alleviation of pressure on wild populations, increasing the number of birds available for release to the wild by allowing breeders to recoup expenses through the sale of birds, and dispersal of captive birds so as to insure against a catastrophic event at a breeding facility.[296]

Tenth, opposition by pressure groups to the Raptor Exemption was all the more ludicrous because the final regulations implementing the exemption were not promulgated until July 8, 1983, meaning that up until then sale or transport of peregrines other than under ESA-related permits was prohibited by federal law. And it was not until November 1983 that the regulations were put into effect. But by this point, the regulations were useless for that year's "crop" of peregrines because birds are born in the spring and summer.

The reason why the new regulations issued in November were useless for peregrines born in 1983 had to do with the development by the FWS of a seamless metal leg band for peregrines, which was the linchpin of the regulation. The seamless leg band was specially designed for the implementation of the regulations because it made illegal transfers of birds much more difficult than previous bands which had seams and so could be manipulated (i.e., removed from a live peregrine and placed on another peregrine) much more easily. But because the new band was seamless, it could only be slipped on birds during the first few weeks after hatching. If the falcons' feet grew too large, as would occur a few weeks after birth, then the band could no longer be slipped on. So by the time the band was ready for use in November, the feet of the peregrines hatched that year were too large to allow the band to band to be slipped on. A further delay in implementing the use of the seamless leg ban was due to the fact that individual states had to promulgate regulations to implement the regulations.

All of this minutia about leg bands and peregrines was very germane to Operation Falcon, as was pointed out at the time by Frank Bond attorney and founding board member of the Peregrine Fund. "Therefore, given the fact that 'Operation Falcon' was revealed on June 29, 1984, well into the 1984 breeding season, and the very fact that only about 6 or 7 States by that time had promulgated companion regulations to comport with the regulations under the [raptor] exemption, we have hardly had an effective time period to determine the efficacy of the 1978 amendment," he stated.[297] One of the cornerstones of Operation Falcon was the FWS's

[296] Cade and Burnham 2003b, p.271.

[297] Bond 1985a, p.160.

allegation that falconers and breeders were circumventing the Raptor Exemption regulations by manipulating the new leg bands vis-à-vis the Raptor Exemption. This allegation, however, was baseless because the leg band system under the Raptor Exemption had only been in place for a few months, and only in a few states, by the time Operation Falcon broke at the end of June 1984.

The chronology of the regulations for the Raptor Exemption, most notably that 1984 was the first year when the seamless leg band could be used, meant that it was very implausible the regulations were violated. Or if the regulations were violated it is very unlikely such violations were part, or a substantial part, of Operation Falcon because the operation formally started in 1981 and the FWS had been building its so-called case against falconers since the mid-1970s.

Despite the realities of this chronology, the National Audubon Society claimed otherwise, and the most apparent reason is Audubon fundamentally misunderstood the FWS's system for marking raptors with leg bands. Audubon claimed that Operation Falcon revealed that manipulation of the seamless metal leg band had occurred.[298] Audubon's misunderstanding of the chronology of development and use of the seamless metal leg band also helped the organization conclude incorrectly that there was widespread illegal taking of raptors.[299] Even though this was pointed out to Audubon on multiple occasions, the organization, most notably Amos Eno and James Leape, the organization's council, persisted in making unfounded conclusions based on misunderstanding the leg band system. This strongly suggests that Audubon willfully ignored the correct information presented to it by those in the falconing community.

Eleventh, at the time of Operation Falcon became public in June 1984, the FWS[300], Audubon[301] and Environmental Defense Fund[302] claimed the Raptor Exemption should be

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[298] Leape 1985b, p.546. See also; Berry 1985, p.482.

[299] Leape 1985b, p.546. See also; Berry 1985, p.482.

[300] According to Ron Lambertson, Associate Director for Wildlife Resources, FWS; "I was just reading through some of the reports here, and it says that the [small, private] breeders produced a total of 65 peregrine chicks in 1984 and they released only 13 into the wild, whereas the federally supported Peregrine Fund produced 270 chicks and released 254 into the wild. So, the claims that captive breeding will increase the wild population, I think, are, at best, pretty weak" (Lambertson 1985b, p.467).

[301] "[I]t is very difficult to breed peregrine falcons in captivity. There were 65 breeders trying to breed peregrines last year, and there were 12 who produced peregrines. So, over 80 percent failed" (Leape 1985b, p.543). "These records show conclusively that private peregrine breeders are *not* making the significant contribution promised by proponents of the Raptor Exemption," asserted Audubon's James Leape. He added, "This record simply cannot justify the Raptor Exemption's waiver of the basic protections of the Act" (Leape 1985b, p.545).

[302] According to Michael Bean "Moreover, the belief in 1978 that the exemption would facilitate greatly the production of captive

repealed because small-scale captive breeders (i.e., facilities typically run by one or two people) produced relatively few peregrines compared to the few large-scale facilities such as the Peregrine Fund. This claim is largely spurious and based on a poor knowledge of peregrine biology, which is not surprising given the poor knowledge the FWS and pressure groups had of other aspects of peregrine conservation.

One rationale for passing the Raptor Exemption was the potential for small breeders to provide birds for release to the wild. The assertions by the FWS and pressure groups that small, private breeders were not making a meaningful contribution were based on yearly reports filed by breeders with the FWS. These reports showed that in 1984, 65 individual breeders possessed 227 peregrines, but that only 12 of these breeders were successful in raising 79 peregrines from 172 eggs. Of these 79 peregrines, 25 were given to other falconers and breeders, 22 sold or bartered to other falconers and breeders, 15 retained by the breeders, 16 released to the wild, and 1 died. The FWS and pressure groups contrasted these numbers with the Peregrine Fund's results from the same year—281 peregrines hatched, 259 released to the wild—and concluded two things. First, the Raptor Exemption should be abolished because the small-scale breeders for whom it was intended were unable to breed peregrines successfully. Second, the relative lack of success by small-scale breeders, despite having over 200 peregrines in captivity, was likely due to the fact that they were not truly interested in breeding but were front operations for the alleged massive smuggling of peregrines.[303]

The combination of a number of points, however, rebuts these two conclusions. One, these numbers are inaccurate—private breeders donated or sold 21, not 16, peregrines or eggs for conservation purposes—which brings the total to 25% of the 1984 production that went towards conservation.[304]

Two, has to do with the numbers "proving" small-scale private breeders were not making a significant contribution to peregrine conservation. In 1984 many of the peregrines held by small breeders were young, sexually immature birds. And the reason so many young birds were in the hands of small-scale breeders was that following the promulgation in 1983 of the

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birds for reintroduction to the wild proved to have been overly optimistic. By the end of 1984, only five of 65 breeders had produced peregrines for release to the wild, as they had released a total of only 16 birds (Leape 1985)" (Bean 1986, pp.361-362).

[303] Lambertson 1985b, p.464.

[304] Berry 1985, p.479.

regulations implementing the Raptor Exemption, there was a marked jump in the number of private peregrine breeders, from 20 in 1981, to 43 in 1983, to 63 in 1984, to 89 in 1985. As these breeders ramped-up, they had to do so with young birds they could train to reproduce in captivity. By 1984 these breeders were on the cusp of having enough sexually mature birds to begin to produce larger quantities of peregrines.

By 1985, one year after the FWS and environmental pressure groups were poor mouthing the apparent meager results from private breeders, the 89 breeders had 327 birds in their possession and produced 82 chicks.[305] It was estimated that the 327 birds in captivity would produce 400 to 700 peregrines per year once they reached breeding age. One reason proportionally fewer of the peregrines produced by small breeders went towards conservation purposes, compared to those produced by the Peregrine Fund and other large-scale operations, is that, during the course of exercising and training birds for the sport of falconing, some birds simply fly off, never to return. The loss of even one bird was a significant setback to a small-scale breeder. In 1985 it was estimated that 10-20 birds per year were accidentally released due to this reason.[306]

In addition, due to their ignorance of peregrine conservation, the FWS and pressure groups failed to realize that almost all the peregrines held by private captive breeders were not the *anatum* subspecies that could be released in the lower 48 states. Instead, the vast majority were the *pealei*, or peale's, subspecies—an essentially non-migratory coastal subspecies that ranges from the Aleutian Islands down the Pacific northwest coast to Washington's Olympic Peninsula—or hybrids of various peregrine subspecies around the world that were not considered *anatum* peregrines by the FWS.[307] So the peregrines being produced by small-scale breeders could not have been released in the Rocky Mountain and Pacific regions, where the indigenous race was being bred for release.

Twelfth, the program to release peregrines in the Midwest region (North Dakota, South Dakota, Minnesota, Wisconsin, Michigan, Iowa, Nebraska, Iowa, Illinois, Kansas, Missouri, Kentucky, Ohio, and Indiana) provides vindication of the Raptor Exemption. Almost all the

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[305] Berry 1985, p.477.

[306] Berry 1985, p.479.

[307] Bond 1985b, pp.563-64.

birds produced for release in the region were purchased from small-scale private breeders. Of the approximately 1,092 peregrines released in the Midwest, 1,024, or 94%, were produced by 36 private breeders other than the Peregrine Fund. Indeed, the Peregrine Fund only supplied 5 birds. Of the rest of the birds, 728 were supplied by four breeders, 214 by seven breeders, and the remainder by twenty-six breeders that each supplied between 1 and 9 birds.[308] Private breeders were paid an average of $1,200 and a maximum of $2,000 per bird.[309] This is a far cry from the tens of thousands of dollars the FWS and pressure groups claimed was being paid on the black market.

Propagation of peregrines by private breeders is precisely the scenario envisioned by those, most notably the Peregrine Fund, who advocated the passage of the Raptor Exemption. Instead of having to construct and maintain an expensive breeding facility, the coordinators of the Midwest program—two members of the faculty at the University of Minnesota—were able to draw on the dedication and expertise of private falcon breeders. Ironically, the Environmental Defense Fund, one of the pressure groups that opposed the Raptor Exemption and denigrated small-scale breeders, has lauded the release of captive bred peregrines in the Midwest as a success of the ESA.[310]

Thirteenth, if the FWS and pressure groups that supported Operation Falcon were truly concerned with conserving peregrines, then they should have focused on a number of significant causes of mortality, not the ten U.S. American peregrines illegally taken from the wild. At the time of Operation Falcon, it was estimated that roughly 8,600-9,570 North American peregrines died annually from various causes; pesticides (5,000), natural attrition (3,000-3,750), electrocution on power lines (>300), shooting (>200), illegal take in Mexico, Latin America and Canada (122-222), and illegal take in the U.S. (7-20).[311]

Fourteenth, Operation Falcon poisoned relations between falconers and the FWS. Falconers felt betrayed because, as Tom Cade pointed out in the section above on captive breeding, they, more than anyone else, were responsible for the success of captive breeding and

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[308] Tordoff and Redig 2003, p.186.

[309] Cade and Burnham 2003b, p.270.

[310] Bean and McMillan 1996; McMillan 1998.

[311] Shor 1988, p.840.

release efforts. It was they who petitioned to have the peregrine listed under the ESA, and it was they who approached law enforcement authorities on multiple occasions to report Jeff McPartlin's illegal activities. To this day, many falconers still view the FWS with suspicion and are very reticent, or even refuse, to be involved in any conservation project that involves the federal government.[312]

Operation Falcon was such a fiasco that the U.S. House of Representatives held an entire hearing, and a portion of another hearing, to examine what occurred. The transcript of these hearings, and the testimony submitted, lays bare the spurious claims made by the FWS and pressure groups about the existence of a multi-million dollar black market in North American peregrine falcons. The hearings also made clear that supporters of Operation Falcon were motivated by a philosophy that was anathema to commerce as a means of conserving wildlife, as well as a desire to garner sensational media coverage. Support for this opposition to commerce was also voiced by Rick Parsons, then part of the agency's efforts to implement CITES and other international treaties and before then part of the Division of Law Enforcement. Parsons later went on to head Safari Club International, the U.S. based hunting lobby.[313]

One of the many shameful aspects of Operation Falcon is that some of the very pressure groups (the National Audubon Society, Defenders of Wildlife, and Environmental Defense Fund) that have touted the American peregrine as an ESA success story were enthusiastic supporters of Operation Falcon. These groups were opposed to the Raptor Exemption because of their opposition to commerce and their fear that the Exemption would lead to widespread illegal commerce. "That fear soon proved to be well founded," asserted Michael Bean of Environmental Defense Fund. "An FWS undercover investigation, dubbed 'Operation Falcon,' revealed an extensive black market in peregrines and other birds of prey."[314] To substantiate these and other claims, Bean cited the 1985 Congressional testimony of James Leape council for Audubon. The fact that Leape's testimony, and the assertions contained within in it were

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[312] Cade and Burnham 2003b, p.272.

[313] "The danger, to put it very simply, is stealing of falcons from the wild in the stage of an age or the stage of a very young bird. Some of our own experts on raptors say even the marker could not prevent that from happening because the marker cannot be placed on the bird until it is four days old." Parsons also said, "For one thing, that is assuming you accept the premise that those activities [captive breeding] would in fact enhance the species. I think a further look into that, there is some debate on certain points. I don't think it is something that can be accepted on its face." (Parsons 1977, p.571). See also (U.S. Fish and Wildlife Service 1976e).

[314] Bean 1986, p.361.

thoroughly rebutted by a number of witnesses from the falconing community at the Congressional hearings, seems to have made no impression on Bean. Indeed, Bean made the above statement in 1986, which would have provided him ample time to evaluate the evidence from the hearings.[315]

What is clear is that Bean and other proponents of Operation Falcon were essentially not interested in uncovering the truth about the Operation because they perceived they could reap political and public relations benefits from their organizations' tried-and-true method of playing the game of "who shouts loudest," not who is most honest and accurate. These groups knew they could mount effective public relations and media campaigns, abetted by a largely compliant media, by appearing to don the white hat of righteous defenders of wildlife against the black hats bent on destroying the peregrine through rapacious commerce. Furthermore, pressure groups were secure in the knowledge that the leadership of the falconing community would not be able to mount a very effective public relations and media campaign because they tended to be fairly publicity averse, and because they would be viewed with suspicion by a public and media weaned on the notion that wildlife and commerce do not mix. Even though the falconing community utterly demolished every single piece of evidence raised by pressure groups in support of Operation Falcon, they still lost the public relations battle.

Another shameful aspect of Operation Falcon was that prior to the raids culminating the investigation, the FWS distributed to the media, others in law enforcement, and, most likely, pressure groups like National Audubon, a twenty-two page summary of the Operation's "evidence." Even though the FWS authored the summary, the agency did not sign it or otherwise claim authorship of the document. The summary, however, was little more than a "smear sheet" because it was designed to tarnish the reputations of those named in it because the document was full of hearsay evidence, unsubstantiated allegations and wishful thinking. The twenty-two page smear sheet contains three pages on the Peregrine Fund. According to the smear sheet, John Slaytor, a Canadian falconer, claimed,"that Jim Weaver, of Cornell [i.e., the Peregrine Fund], receives 50 anatum peregrine falcon eggs a year illegally from John Campbell of Alberta, Canada."[316] The FWS cited other of Slaytor's hearsay and unsubstantiated opinions

[315] Bean 1986, pp.361-62.

[316] U.S. Fish and Wildlife Service 1984j.

about the Peregrine Fund.[317] Slaytor, however, was far from credible. He was one of the few people caught in Operations Falcon who was actually involved in falcon smuggling, and after his arrest he jumped bail, left his wife and young child behind, and went to work as a falconer for a member of the Saudi royal family.

One thing that did emerge from the entire fiasco was that Operation Falcon helped draw a sharp distinction between preservationists, such as Audubon and Environmental Defense Fund, who sought to conserve the peregrine *from* use, and conservationists (i.e., falconers and their allies) who sought to conserve the peregrine *for* use. As Robert Berry then President of the North American Raptor Breeders' Association and one of the founding members of the Peregrine Fund, noted: "The continued welfare of a species is closely linked with its utilitarian or economic value—the most successful examples being waterfowl, game birds and game fish. The peregrine is no exception. Its survival is guaranteed not by the protectionists groups who many wish to see it proliferate in the wild, but by the falconers who have a vested, selfish interest in both wild and captive populations and are willing to pay the price."[318] Or as Frank Bond of the North American Falconer's Association put it:

> "There is a new trend in wildlife management that all wildlife must pay its own way. Audubon hopes that the peregrine will recover, but the falconers are willing to put their money, and their time, and their efforts on the line to guarantee that this bird is going to recover, but they do want to be compensated for at least some of their costs. To improve duck hunting, you know, the sportsmen go out and they buy marshes. The peregrine is no exception. The peregrine has to be able to pay its own way in this new, modern world."[319]

Even the FWS's Division of Endangered Species has admitted, albeit implicitly, there was no large-scale black market for peregrines. When the FWS downlisted the Arctic sub-

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[317] "Slaytor referred to Cornell [aka Peregrine Fund] as the 'Cornell mafia," saying they were a very close-knit group, very tough and extremely powerful….He said that Cade in the U.S., Christian Zarr (phonetic) in Germany, Roger Upton in England, and Richard Fife in Canada control the movement of the more valuable birds of prey throughout the world." In addition, "Slaytor said if federal people ever got ahold of Cornell's records, that would be the end of Cornell." (U.S. Fish and Wildlife Service 1984j).

[318] Berry 1985, p.484.

[319] Bond 1985b, p.564.

species of peregrine falcon, which was one of the sub-species purportedly involved in large-scale illegal trade, from endangered to the less imperiled status of threatened on March 20, 1984 (which was more than three months prior to the announcement of Operation Falcon), the agency made no mention of illegal trade.[320] According to the text of the ESA, a species may only be listed if it meets one or more of five criteria, one of which is "overutilization for commercial, recreational, scientific or educational purposes."[321] No such overutilization was mentioned when downlisting occurred in 1984. Furthermore, the 1991 recovery plan for the Eastern peregrine population makes no mention of either Operation Falcon or of the need for any type of law enforcement activity due to illegal trade.[322] Then, starting in 1995, when the FWS first announced the potential delisting of the American peregrine, and up to and including final delisting in 1999, the agency made no mention of Operation Falcon in any official documents, such as those in the Federal Register and press releases. If Operation Falcon was such a resounding success and so important to the peregrine's conservation, then it would have merited some mention by the FWS when the agency was trumpeting the "success" of the ESA "saving" the American peregrine.

What is clear about Operation Falcon is that the FWS Division of Law Enforcement, along with some of the Interior Department's leadership, along with their allies in environmental pressure groups and the all-too-credulous media, were almost completely alone in the belief that significant numbers of peregrines were being taken illegally from the wild. So after spending millions of dollars on Operation Falcon, and hounding many innocent citizens in the pursuit of an alleged massive international smuggling ring in peregrines, it turned out that the U.S. government was the single largest dealer in peregrine falcons. Operation Falcon was in effect a hoax built on political ambition, philosophical opposition to wildlife commerce, ignorance, and a willingness to fabricate data. Operation Falcon was a fraud and a figment of its proponents' imaginations that unfortunately did an enormous amount of damage to many innocent people dedicated to peregrine conservation.

In the years following Operation Falcon, the FWS and others even honored those involved with perpetrating the Operation Falcon fraud. Clark Bavin continued to lead the

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[320] U.S. Fish and Wildlife Service 1984b.

[321] Endangered Species Act, 1973, sec.1531 (4)(a)(1)(A)

[322] U.S. Fish and Wildlife Service 1991e.

Division of Law Enforcement until his death in 1990. To honor Bavin, in April 1991 the FWS rededicated the agency's forensics laboratory in Ashland, Oregon as the Clark R. Bavin National Fish & Wildlife Forensic Laboratory. John Turner, then FWS Director, attended the rededication ceremony. The renaming of the laboratory calls to mind the FBI dedicating its new headquarters in 1975 to the Bureau's late Director, J. Edgar Hoover. The similarities between Bavin and Hoover are striking, as noted by Tom Cade and Bill Burnham. Both were ruthlessly ambitious. They saw nothing wrong with bending and even breaking laws in their quests to build their empires, and, to the discredit of the FBI, FWS and others, both were honored posthumously for doing so.

The Animal Welfare Institute also saw fit to honor Bavin by renaming its annual award to wildlife law enforcement personnel from around the world for him. The Institute coordinates its presentation of various awards with the IUCN's (World Conservation Union's) Species Survival Network during the biennial Conference of Parties to CITES (Conservation on International Trade in Endangered Species). Bavin, "pioneered the Division's highly effective use of covert investigations and 'sting' operations to uncover illegal wildlife trade," according to the Species Survival Network. "The awards have traditionally been presented by the Secretary-General of CITES during meetings of the Conference of the Parties."[323] The involvement of the IUCN is a troubling indication of how Bavin's techniques, even though they violated laws and were unethical, have come to be accepted and embraced.

FWS agents involved with Operation Falcon have also received awards and promotions. Carl Mainen, the FWS agent in charge of Operation Falcon was one of eight recipients of the Animal Welfare Institute's Bavin Award in 1997 in part due to his work on the Operation Falcon.[324] John Gavitt, the FWS agent who appears to have broken the ESA and other federal wildlife laws by helping take three peregrine eggs from a nest in Utah and by disturbing the nesting pair of peregrines, was promoted by the FWS in 1985 to lead the Law Enforcement Division's Special Operations Branch.[325] From 1990-1995 Gavitt got another plum assignment, this time living in Switzerland and being detailed by the FWS to work for CITES on law

[323] IUCN, Species Survival Network, ND, Clark R. Bavin.

[324] IUCN, Species Survival Network, ND, Bavin Wildlife Law Enforcement.

[325] Gernami 1985.

enforcement issues. After leaving CITES, the FWS put Gavitt in charge of the Law Enforcement Division's Alaska regional office. Gavitt retired from the FWS in 2000 and went to work for WildAid, an organization ostensibly founded in 1999 to combat illegal wildlife trade. But WildAid is, at its heart, an animal rights group and, as such, is philosophically opposed to all wildlife trade. In 2001 the FWS interviewed Gavitt as part of the agency's oral history archive, and he was utterly unrepentant about Operation Falcon and his role in it. Speaking about two wildlife sting operations, one of which was Operation Falcon, Gavitt said, "I think they were both really very successful operations, although with [the peregrine] falcon of course you still hear about the 'abuses' of the Fish and Wildlife Service. Which I think is a bunch of 'bull.'"[326] Gavitt also fondly recalled his experience as Jeff McPartlin's undercover partner:

> "We basically found out a lot of what was going on in a lot of different areas, in terms of illegal activity. We investigated them, and got our prosecutions together, and I think we did a pretty good job. I was very pleased with the case. The aftermath was of course, NAFTA [*sic*], the North American Falconers Association coming at us with things like, 'There's no market, there's nothing, this is contrived.' We had it documented that it was not. It didn't seem to make any difference. We went back and forth, and you realize eventually that you are never going to win that 'PR,' or media battle, you're really not. You just give your best and let it go after a while. Because you keep going back and forth and it becomes vindictive, it really does."[327]

It is astounding that Gavitt portrays himself and the FWS as the victims of malevolence and a public relations battle when he and the agency perpetrated the Operation Falcon hoax, and the FWS used its, and the Justice Department's, immense resources and powers to try to ruin the lives of many innocent people. In addition, it is important to recall that the Department of Interior waged a massive PR campaign, which was kicked off when the Department issued a national press release, as well as a smear sheet, to announce Operation Falcon. The press release contained statements by two of the most powerful federal officials, the Secretary of Interior and

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[326] U.S. Fish and Wildlife Service 2001j.

[327] U.S. Fish and Wildlife Service 2001j.

the Attorney General. With this type of firepower behind Operation Falcon, Gavitt and company were hardly the helpless victims he portrays them as. Gavitt's portrayal of himself as a victim is also typical behavior of a bully. When the tables are turned on bullies, by someone standing up to them and besting them at a fight, they often blame their vanquisher as the cause of their feelings of defeat and inferiority. Bullies swing from one extreme to another; from threats and intimidation to self-pity and narcissism, with little, if any, pause in the middle to consider that they bear responsibility for their actions, as well as for why they were defeated.

The underlying mechanism for this behavior is known as "self-justification" and is the topic of a fascinating book by psychologists Carol Tavris and Elliot Aronson.[328] The authors define self-justification in the following way:

> "At some point we all make a bad decision, do something that harms another person, or cling to an outdated belief. When we do, we strive to reduce the cognitive dissonance that results from feeling that we, who are smart, moral, and right, just did something that was dumb, immoral, or wrong.
>
> Whether the consequences are trivial or tragic, it is difficult, and for some people impossible, to say, "I made a terrible mistake." The higher the stakes—emotional, financial, moral—the greater that difficulty. Self-justification, the hardwired mechanism that blinds us to the possibility that we were wrong, has benefits: It lets us sleep at night and keeps us from torturing ourselves with regrets. But it can also block our ability to see our faults and errors. It legitimizes prejudice and corruption, distorts memory, and generates anger and rifts. It can keep prosecutors from admitting they put an innocent person in prison and from correcting that injustice."[329]

It is also very telling that Gavitt has such fond memories of Jeff McPartlin who was a confidence man and a convicted felon. But perhaps these very qualities appealed to Gavitt because, after all, he appears to have violated the ESA and other federal laws during the course of Operation Falcon. Gavitt had one particularly fond memory from Operation Falcon, the time when he apparently illegally collected three peregrine eggs from Utah:

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[328] Tavris and Aronson 2007.

[329] Tavris and Aronson <http://www.mistakesweremadebutnotbyme.com/>

> "But I also knew that there was 'someone' looking out for me a lot of the time. I was scaling a cliff one time with a guy to take some Ieous [*sic*] Peregrines out of a nest in Utah, and I hate heights. We were going straight up this cliff in little toeholds and so on. And I said, 'What in the hell am I doing here?' But I survived! And it was a great period in my life."[330]

It is quite remarkable that apparently breaking the law constitutes a "great period" of Gavitt's life and something for which he is proud. Such is the mindset of some in the law enforcement profession who see themselves as the last bulwark against the forces of evil, as the thin blue line, or as is the case for the environment, the thin green line. As a result, people such as Gavitt cast themselves as righteous defenders of the good who are, by self-definition, largely incapable of doing wrong.

Gavitt marked the occasion of his retirement by placing a conservation easement on 437 acres he had purchased in West Virginia. He celebrated this by penning, for the FWS's internal newsletter, a maudlin article, in the form of a "letter" addressed to an imagined future owner of the property. "I have spent my entire career in wildlife law enforcement. Although it has been very satisfying work, I have always wondered how I could make a contribution to our natural world that would last beyond my lifetime."[331] Gavitt did, indeed, make several "contributions" to conservation that will last well beyond his lifetime. One was to help set a precedent at the FWS Division of Law Enforcement that breaking the law in pursuit of a perceived higher goal is permissible and even laudable. Another was to sow seeds of distrust between honest falconers and falcon conservationists and the FWS. But perhaps Gavitt's most lasting contribution was to reinforce the direction Clark Bavin was pushing the Division of Law Enforcement, even if such a direction involved fabricating evidence, ignoring reality and common sense, apparently breaking laws, and, in general, pursuing a case even in the face of a growing mountain of contradictory evidence.

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[330] U.S. Fish and Wildlife Service 2001j.

[331] Gavitt 2000.

CUMBERSOME FEDERAL PERMITTING

While Operation Falcon was driven by a combination of malice, ignorance, and a desire for power and funding, the more mundane, persistent, and in many ways the more significant problem for the Peregrine Fund and others involved in efforts to conserve the American peregrine was the difficulty obtaining federal permits to carry out conservation work. Problems obtaining permits stemmed from legislative mandates, bureaucratic inertia, jealous guarding of turf, incompetence, and turnover of federal personnel. The FWS's Division of Law Enforcement handled the permitting process and "their authority to issue permits was a constant obstacle to Peregrine restoration," state Tom Cade and Bill Burnham of the Peregrine Fund.[332] This was not surprising because the Division's suspicion of peregrine conservationists did, after all, lead it to carry out the Operation Falcon hoax.

Obtaining federal permits was an arduous process. Getting, or even simply renewing, a federal permit to work with wild peregrines, usually took over six months, sometimes over a year. The FWS required separate permits for banding birds, captive breeding, retrieving dead peregrines, working with injured or sick birds, and if an eagle or other raptor or owl needed to be scared off from a hack site so it would not prey on the newly-released birds, yet another permit was required. For each separate release of birds, the personnel involved had to fulfill separate requirements under the National Environmental Protection Act. Permission was also needed from federal land management agencies if birds were released on federal lands. States also had their own set of required permits and authorizations.[333]

Obtaining federal permits was the most difficult part of the process, and two examples of federal permitting problems occurred in the late 1970s. In 1977 alone Bill Burnham of the Peregrine Fund needed eight separate permits and authorizations in order to breed and release peregrines. Also in 1977, Tom Cade was technically in violation of one of his permits, which only allowed him to hold four peregrines. While waiting for the permit to be renewed, the number of peregrines under his care grew to 150 because this was the time period when the Peregrine Fund was, after years of painstaking research, finally able to produce large numbers of

[332] Cade and Burnham 2003b, p.272.

[333] Cade and Burnham 2003b, p.273.

peregrines. The icing on the cake was that if the Peregrine Fund wanted to acquire peregrines from, or send them to, the Canadian government sponsored captive breeding facility, further permits and authorizations were required by the Convention on International Trade in Endangered Species (CITES). All of this led Cade and Burnham to state, "Since the early 1970s, and despite meetings about permit problems with virtually every Interior Secretary and most Assistant Secretaries and FWS directors, there has been no meaningful relief," in simplifying the permitting process.[334] "In fact, it [the ESA] may have worked to the contrary [of peregrine conservation] because of the onerous permitting system imposed to do work with the species and the excessive involvement of law enforcement," they conclude.[335]

POLITICAL TAXONOMY

As discussed in the profile on the Arctic peregrine falcon, the 1968 recognition of a new subspecies of peregrine falcon, the Arctic peregrine, or *falco peregrinus tundrius*, appears to have occurred more for political than taxonomic reasons. Part of the politics involved had to do with the American, or *anatum*, subspecies. "In 1968 the peregrine population of the Canadian arctic was given the subspecies name of *tundrius* in order that peregrines surviving west of the Rockies (subspecies *anatum*) could be put on the endangered species list."[336] And, as detailed in the profile for the Arctic peregrine, Tom Cade and Bill Burnham of the Peregrine Fund confirmed this explanation.[337]

This political taxonomy, like the attempt to justify introduction of peregrines to the mid-Atlantic salt marshes on bogus scientific grounds, is yet another example in which science was manipulated, albeit in the case in a fairly minor and benign way, in order to serve the interest of peregrine conservation. It is ironic that peregrine advocates championed this taxonomic shift in order to list the peregrine under federal endangered species legislation because, as has been

[334] Cade and Burnham 2003b, p.273.

[335] Cade and Burnham 2003b, p.262.

[336] Wade 1978, p.1055.

[337] Cade and Burnham 2003a, pp.15-16.

explained in this profile, the listing of the peregrine was, on net, detrimental to the species' conservation.

MULTIPLE RECOVERY REGIONS

As with the bald eagle, the American peregrine falcon had the geography of its recovery process broken up into four regions of the U.S., each with its own recovery plan. While part of this seems to have been done because of the wide range of the species, there also seems have been a make-work aspect to it. "[F]our separate recovery plans are being produced, with unnecessary duplication of effort," stated Frank Bond one of the founding members of the Peregrine Fund. "A single team could have written a national plan taking into consideration regional problems or unusual circumstances and the work already accomplished in captive propagation and release to the wild of peregrines bred in captivity."[338] This largely unnecessary expenditure of limited funds could have been better spent on useful recovery efforts, such as the reintroduction of peregrines to the wild.

UNQUALIFIED PEOPLE ON RECOVERY TEAMS

In the mid-1970s the FWS appointed recovery teams for the four recovery regions, but most of the people on the teams were unqualified. "The problem we have in this instance is that we have a duplication of effort with four different plans produced by four different teams," said Frank Bond. "There are approximately twenty-six members on the teams, only five or six of which have ever had any previous experience with peregrines."[339] Moreover, "of these few with prior experience, only two work for government," added Bond.[340] One of the likely reasons for the large number of unqualified people on the recovery teams stems from the peregrine's charisma, which translated into large amounts of funding for peregrine recovery. The peregrine was a money tree, and people clamored to be involved so they could shake the money tree. Those in federal and state agencies were well aware of this, and they sought to use the peregrine

[338] Bond 1977, p.38.

[339] Bond 1977, p.29.

[340] Bond 1977, p.38.

as a means to obtain funding even if doing so was superfluous or even a hindrance to recovery efforts.

RECOVERY CRITERIA

Recovery plans are the federally approved "blueprints" written by recovery teams that lay out the steps recommended for a species to be reclassified, which means delisted or downlisted from endangered to the less imperiled status of threatened. Recovery criteria, however, are not legally binding. The FWS has the discretion to deviate from the criteria when deciding, among other things, whether to delist or downlist a species. As with the bald eagle, some peregrine recovery regions had multiple versions of their recovery plans known as "updates." The rationale behind updating recovery plans is that as knowledge of a species improves, this should be reflected in the recovery plan. However, with each successive plan, recovery criteria tend to become more difficult to attain. In the case of the peregrine, this occurred between the first (1979) and second versions (1987) of the Eastern recovery plan, as well as the first (1977) and second versions (1984) of the Rocky Mountain region plan (see footnote 2 for a list of the plans and recovery criteria). This moving of the recovery goalposts was due in part to better knowledge of what was needed to recovery the peregrine. But there was also a conflict of interest at work because the authors of the plans were almost invariably involved in peregrine conservation. So the harder the recovery goals, the longer the peregrine would presumably stay listed and the more work and funding authors and their colleagues would potentially receive. In addition, the longer the peregrine was listed, the more opportunity was available to try to use the species' status under the ESA to restrict land and resource use.

BELATED DELISTING

The FWS delisted the American peregrine falcon in 1999, but this should have occurred years earlier over most, if not all, of its range. An examination of population data relative to recovery goals, as well as expert opinion reveals that delisting should have happened long before 1999.

POPULATION DATA

One of the reasons for dividing any species or sub-species, including the American peregrine, into separate recovery regions is so the status of the species in each region can be reclassified—downlisted or delisted—independent of the other regions. While the FWS has had this opportunity to reclassify a number of species (bald eagle and American peregrine falcon, in particular) in separate geographic regions independent of other regions, the agency has never done so for reasons that are not entirely clear but likely have to do with selling the ESA. Perhaps the FWS perceives that reclassification in one region would give the public, Congress and the media the impression that the species' population over its entire range had improved. Yet the FWS, as well as the pressure groups that exert significant influence on the agency's activities, have a conflict of interest. On the one hand they want to delist species in order to show the ESA works. But on the other hand, they want to keep species listed as long as possible in order to garner funding, positive publicity, and to use the species' status under the ESA as a means of controlling use of land and water.

In the case of the American peregrine falcon, the FWS's refusal to reclassify the various recovery regions independent of each other was most noticeable in Alaska where the peregrine could have been delisted by after the summer of 1987 when the data from that breeding season became available. "The recovery objective of 28 occupied nesting territories in the 2 study areas was first achieved (post-DDT) in 1982, and the number increased steadily since that time…," admitted the FWS when the agency finally proposed to delist all U.S. American peregrines in 1998.[341] One of the recovery criteria was 28 occupied territories for five consecutive years. Therefore, 1987 was the first year delisting in Alaska could have occurred.

The other two recovery criteria for Alaska had also been met well before 1999. 1982 was also the first year that productivity, measured by the average number of young per territorial pair, exceeded the recovery goal of 1.8. And DDE residues in eggshells "probably declined below the recovery objective of 5 ppm. sometime between 1984 and 1988," stated the FWS in 1998.[342]

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[341] U.S. Fish and Wildlife Service 1998c, p.45450.

[342] U.S. Fish and Wildlife Service 1998c, p.45450.

However, the FWS knew in the early and mid-1980s that productivity had met the delisting goal. The Alaska population was so healthy it increased by an average of 8.0% annually from the late 1970s until the FWS proposed delisting in 1998.[343]

In the Pacific region (California, Oregon, Washington, Nevada), the peregrine could have been delisted by 1994. The recovery goal of 185 pairs was almost met in 1993, when there were 175 pairs, and it was exceeded in 1994 with a total of 219 pairs. It is not clear whether the goal of a minimum of 122 pairs in twenty-two separate "management units" had been met at this point, but it is important to keep in mind two points. First, recovery goals are not mandatory. Second, the fact that the 1994 population of 219 pairs had far exceeded the total population goal of 185 pairs strongly suggests that the distributional goal did not have to be met precisely for the peregrine to have been considered recovered. As for the productivity goal of 1.5 young/year, it had been met since 1993.[344]

In the Rocky Mountain/Southwest Region, (Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, North Dakota, South Dakota, Oklahoma, Texas, Utah, and Wyoming), the peregrine met or exceeded recovery goals years before delisting. The recovery plan recommended a total of 183 pairs for the region with state-specific distributions; Arizona (46 pairs), Colorado (31), Idaho (17), Montana (20), Nebraska (1), New Mexico (23), North Dakota (1), South Dakota (1), Texas (8), Utah (21), and Wyoming (14). Nebraska and the Dakotas will not be included in the following analysis because they were so far on the periphery of the peregrine's range, and Nebraska was perhaps not even in the historic range. In addition, the three pairs in each of these three states were so few as to be essentially inconsequential to recovery. Arizona and Utah met their recovery goals by at least the mid-1980s when surveys revealed the large, remnant population totaling at least 100 pairs in each state. Colorado met its recovery goal of 31 pairs in 1988 and then exceeded it in every subsequent year.[345] Wyoming met its recovery goal of 14 pairs by 1990 and then exceeded in 1992 with a total of 21 pairs.[346] Texas and New Mexico met their recovery goals by at least 1993 when they had at least 10 and

[343] U.S. Fish and Wildlife Service 1998c, p.45450.

[344] U.S. Fish and Wildlife Service 1998c, p.45451

[345] Burnham. 2003, p.135.

[346] Burnham. 2003, p.135.

25 pairs, respectively.[347] Idaho did not meet its recovery goal of 17 pairs until 1996, and did not exceed the goal until 1999 when it had a total of 21 pairs.[348] Similarly, Montana did not meet its recovery goal until it had 27 pairs in 1999.[349] Even though some states did not meet their population goals until the mid-to-late 1990s, the large numbers of peregrines in other states, and the region's positive population trend meant that delisting should have occurred in the early 1990s.

The region's second recovery criterion was sustained productivity of 1.25 young/year without any releases of captive-produced birds. It is unclear precisely when certain states met or exceeded their productivity goals, but the large and growing populations in Arizona, Utah, Colorado, and New Mexico in the mid-to-late 1980s indicate that the populations in these states were very healthy. As is clear, the peregrine in the southern and central Rocky Mountain region could have been delisted by the mid-to-late 1980s. The northern part of the region is a different story, especially in Idaho and Montana, where the peregrine's status and when it was delisted in 1999 actually meshed.

EXPERT OPINION

The other source of information on why delisting should have occurred well before 1999 is the opinions of experts involved in peregrine conservation. In 1992 the Peregrine Fund sent a letter and report to FWS Director John Turner recommending that American peregrines in a number of western states (American peregrines in California, Nevada, Utah, Colorado, New Mexico, Arizona, Texas, and American and Arctic peregrines in Alaska) be delisted because they were at healthy population levels. As for peregrines in Idaho, Montana, Oregon, Washington, and Wyoming, the Fund recommended downlisting from endangered to the less-imperiled status of threatened, but that this status would apply only to territorial pairs and their young, not to wintering or migrating peregrines. In addition, the Fund urged that peregrines in the states it recommended for downlisting be delisted by 1996 or when releases of captive-bred peregrines

[347] Peregrine Fund 1993, p.4.

[348] Burnham. 2003, p.135.

[349] Burnham. 2003, p.135.

ceased, whichever came first. For the eastern states—that is all states east of the Mississippi River as well as those states bordering the river to the west—the Peregrine Fund recommended downlisting by 1994 if the population remained stable or increased and then delisting by 1999 if the population increased or remained stable.[350] The FWS received additional advice urging the agency to delist the peregrine in 1995 when four of the leading experts on peregrines—James Enderson, professor of biology at Colorado College, William Heinrich and Lloyd Kiff of the Peregrine Fund, and Clayton White, professor of zoology at Brigham Young University—published a paper recommended the peregrine in the West, which was synonymous with the Rocky Mountain and Pacific Coast recovery regions, be delisted.[351]

After receiving the Peregrine Fund's recommendation, the FWS did nothing for four years until 1995 when the agency published an "Advance Notice" of a proposal to delist the peregrine.[352] The Advance Notice was not even a formal delisting proposal. It was a combination of a trial balloon to gauge support and opposition, and it was a publicity stunt because the FWS announced it with much fanfare. Interior Secretary Babbitt used the occasion as an opportunity to play politics by implying that if the newly elected Republican majority in Congress had been in power during the preceding twenty years then the rebound of the peregrine would not have been possible. Babbitt also implied that Congress was jeopardizing the potential future recovery of other species.[353] Not surprisingly, the Peregrine Fund had a more sober assessment of the Advance Notice. "We believe the integrity of the ESA and the credibility of the USFWS and species recovery activities will be improved by this proposed action," the Fund

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[350] Burnham 1992.

[351] Enderson, et al., 1995, p.157.

[352] U.S. Fish and Wildlife Service 1995c.

[353] According to Interior's press release, "'After a narrow brush with extinction, the peregrine falcon is coming back. Unfortunately, the environmental laws and research programs that brought the peregrine back are now at risk of extinction themselves,'" claimed Babbitt. 'The fact that we can see peregrine falcons right here in the heart of New York [City] shows that strong environmental laws and sound science can save endangered species. Once a tragic symbol of what was wrong with our environment, the peregrine is now a symbol of hope.' Babbitt said efforts to slash funding for the National Biological Service and to weaken the Endangered Species Act undermine the very programs that brought the falcon back. 'The recovery programs and legal protection that helped bring the falcon back were carried out under the Endangered Species Act. If efforts to gut these essential conservation programs continue, future endangered species may not be as lucky as the peregrine falcon' (U.S. Department of the Interior 1995b).

stated. "If, upon actual recovery, a species cannot be promptly removed from the Endangered Species List, then the system is flawed."[354]

The Peregrine Fund's premonition proved true when the FWS did nothing for three years after publishing the Advance Notice. To be fair, the FWS was largely, but not entirely, to blame for this delay. The shutdown of the federal government in late 1995 and Congressional restrictions on FWS listing activities in 1996 also slowed the delisting process. But the FWS is to blame for assigning the delisting of the peregrine the lowest priority in guidelines published in March 1996. Another impediment was that funds for delisting were removed by Congress from the FY 1997 budget, but if the FWS truly wanted to delist the peregrine funds could have been transferred.[355] A further delay in the process were pressure groups lawsuits that contended FWS funds ought to be used for listing species, not delisting.[356] During all of this, peregrine conservationists grew increasingly frustrated with the FWS's apparent refusal to delist the peregrine, as can be seen in Tom Cade's comments on the issue published in the Peregrine Fund's newsletter in 1997.

> "Some people have asked 'Why not keep the Peregrine on the ESA just to be safe,' or 'What are the advantages of removing the Peregrine from the list?' Such questions go to the heart of philosophical positions about scientific integrity and ethical behavior. We believe that when a species no longer meets the biological criteria for threatened or endangered it should be removed from the list; otherwise, the Endangered Species Act becomes a fraud and serves only to increase the growing suspicion of many American citizens about listings. De-listing the Peregrine would remove the temptation of some agencies and organizations to continue projects beyond their useful time and will free up funds to help truly endangered species, such as the endemic birds of Hawai'i. It will also remove the temptation to use the Peregrine as a pawn for environmental agendas unrelated to its real needs for survival."[357]

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[354] Peregrine Fund 1995.

[355] Cade 1997.

[356] Peregrine Fund 1997, p.7.

[357] Cade 1997, p.2.

In August 1998, the FWS finally got around to publishing a proposed rule to delist the peregrine.[358] Comments on the proposed delisting were due by November 1998, but that same month the FWS delayed the process yet again by extending the comment period to the end of January 1999.[359] This pushed the delisting process back by at least two months, which meant the earliest the peregrine would be delisted was October 1999 because, under the ESA, the FWS has up to one year to make a final decision on proposed rules to reclassify species.

While this was going on, the Peregrine Fund had finally reached the limits of its patience waiting for the FWS to delist. In the winter of 1998, following the FWS' extension of the comment period, the Fund announced that it was going to celebrate the peregrine's recovery with a weekend-long festival, from August 20-21, 1999.[360] This date was when the peregrine should have been delisted had the FWS not unnecessarily extended the comment period. When August 1999 rolled around, the Peregrine Fund planned to hold a news conference on the morning of the August 20 to announce the recovery of the peregrine and kick-off the weekend celebration.[361] The planned festival put the Interior Department in a very awkward position. If the Department ignored the festival, as it would have preferred, it would be upstaged by the Peregrine Fund. But if the Department attended, it would be dancing to someone else's music.

In the week before the festival, and even though Interior had known for nine months of the Peregrine Fund's plans, the Department of Interior was evasive about its intentions. On August 18, Interior released a "Media Advisory" announcing the "possible final delisting of Peregrine Falcon" because "The world's fastest bird may soon become the first bird to fully graduate off the endangered species list across America" and that Secretary Babbitt *might* attend the Peregrine Fund's celebration.[362] Then on August 19 Babbitt suddenly announced he was going to show up and crash the celebration he had not been invited to attend in order to announce that Interior was, indeed, delisting the peregrine. It was clear that Babbitt was going to try to hijack the festival by claiming that the Interior Department and the ESA were largely responsible

[358] U.S. Fish and Wildlife Service 1998c.

[359] U.S. Fish and Wildlife Service 1998d.

[360] Peregrine Fund 1998.

[361] Peregrine Fund 1999b.

[362] U.S. Department of the Interior 1999c.

for the peregrine's recovery. On the night of August 19, the eve of the festival, the Peregrine Fund's board apparently held a meeting about what to do when Babbitt arrived the next day. While the board was furious that Babbitt was trying to steal the show, they essentially could not bar a cabinet secretary from attending, even though they ideally would have like to do this. So the board decided all they could do was marginalize Babbitt as much as possible. When the Peregrine Fund held the press conference on the morning of August 20, Babbitt was the last of four people to speak.

The photo from the Peregrine Fund's newsletter captures the moment well. Tom Cade, holding a live peregrine is flanked by Babbitt and Mike Crapo, U.S. Senator from Idaho. To Crapo's left is Derek Ratcliffe—the eminent British scientist who, in 1967, published the first peer reviewed article linking DDT to thinning of peregrine eggshells—who was presiding as master of ceremonies. With the uninvited Babbitt on his right, Cade has a fixed smile on face. He had to appear magnanimous to Babbitt because the Peregrine Fund was still receiving significant federal funding and many of the Fund's projects required cooperating with the Interior Department. Ratcliffe, on the other hand, was not so constrained because he depended on Interior for nothing. So he did what Cade and other peregrine conservationists surely would have wanted to do: glare at Babbitt-the-interloper instead of smiling at the camera.[363]

Even though he elbowed his way into the celebration, Babbitt had the gall to try to steal the show by announcing not only that that the federal government delisted the peregrine but that Interior deserved much of the credit.[364] The reality, of course, was far different because the Peregrine Fund, related organizations, and falconers deserved the credit. In addition, had not the Peregrine Fund forced Babbitt's hand, it is likely the peregrine would have remained listed under the ESA. "There is no doubt in our minds that without the fixed date of this celebration, the Peregrine Falcon would not have been delisted within the 12 months [between the publication of the proposed and final rules in the Federal Register, as required by the ESA], or possibly another year beyond," stated Tom Cade and Bill Burnham of the Peregrine Fund.[365]

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[363] Peregrine Fund 1999b, p.2.

[364] For descriptions of Babbitt's antics see: Smith 1999, Smith 2000. Interior Department's official statement can be found at; U.S. Fish and Wildlife Service 1999j.

[365] Cade and Burnham 2003b, p.275.

The belated delisting of peregrine provides an indication that the Department of Interior has lost sight of the ESA's ultimate purpose, which is to delist species, not keep them listed indefinitely to be used as tools for public relations and land use control.

OPPOSITION TO DELISTING

Even though the FWS delisted the American peregrine falcon years after it should have been, some were still unhappy and even went so far as to oppose delisting. Those opposed consisted of biologists, the FWS, and National Wildlife Federation. All those opposed were more interested in using the peregrine to raise funds, garner publicity, and restrict use of land and water than they were with declaring a victory for the ESA, even if such a victory was undeserved.

BIOLOGISTS

The strongest opposition to delisting came from four biologists; Douglas Bell of the California Academy of Sciences, Joel Pagel and Brian Norton of the U.S. Forest Service, and Michael Johnson, a researcher at the University of California, Davis. These four couched their desire to use the peregrine as a money tree and as a land-use control tool in ostensibly scientific arguments. Among the concerns raised by these biologists were; peregrine abundance and distribution, problems with reproduction linked to the persistence of DDT in some areas, and the need for more research into determining various aspects of population viability. In reality, these points amounted to nitpicking. These four opponents missed the bigger picture, which was that the peregrine's population was very healthy and merited delisting under the ESA.

One of the issues raised by opponents was that literature on which the FWS based delisting needed to be peer reviewed, rather than "gray" literature—reports, data and other non-peer reviewed information.[366] As with much of the four opponents' arguments, this was absurd because if peer review is the standard, then very, very few species will ever be delisted because usually only the charismatic species like the peregrine and gray whale are able to attract enough

[366] Pagel et al., 1996; Pagel and Bell 1997; Pagel et al., 1998.

interest and funding to support the publication of peer reviewed journal articles. Most species languish in obscurity and so very little is known, and therefore published, about them. Even for the high profile species like the American peregrine falcon, gray literature is routinely used by the FWS in support of delisting.

A more realistic view on the use of gray literature can be found in a statement by the Raptor Research Foundation's ad-hoc committee on the proposed delisting of the peregrine. The committee, which was composed of some of the foremost raptor biologists in the country, found the use of non-peer reviewed data to be acceptable:

> "There is, nevertheless, precedent for using unpublished literature to make major listing and de-listing decisions. In fact, such information typically comprises the bulk of data considered in a status review. At least 3 arguments can be raised against the exclusive use of published data. First, publication does not guarantee quality, and unpublished but time-sensitive data can be very useful (nearly all data on American peregrine populations collected since 1990 are unpublished). Second, the public scientific debate that occurs during listing and de-listing actions subjects unpublished data to a level of scrutiny equivalent to the peer review process. Third, rapid response time on de-listing is just as important as is rapid response time on listings, and the publication process is perhaps too slow for both processes."[367]

The other issues raised by opponents of delisting were rebutted by a number of biologists involved for decades in peregrine conservation; Tom Cade and Lloyd Kiff of the Peregrine Fund, Jim Enderson of Colorado College, and Clayton White of Brigham Young University.[368] First, proponents of delisting pointed out there was ample evidence that the peregrine population was increasing in all regions for which the FWS approved recovery plans. Second, as for DDT impairing reproduction, the positive population trend for peregrines in the years preceding the proposed delisting argued very strongly against this point raised by opponents of delisting. The positive population trend was especially notable since the late 1980s, when releases of captive

[367] Millsap et al., 1995, pp.524,531.

[368] Cade et al., 1997; Cade 1998.

bred birds were winding down. One might expect population "spikes" with the release of birds, but these spikes would subside in subsequent years, as the long term survivability of these birds became apparent.

Lastly, opponents raised the issue of needing further research, which would have consisted of very complex and time consuming statistical tests of population viability, for delisting to be justified. This was unwarranted because, among other things, gathering the data necessary for these tests would take years. This raises the raises the question of to what degree these tests were necessary and to what degree they were a means to forestall delisting, thereby creating opportunities to acquire more funding for research and to use the ESA to restrict land use. As Tom Cade and colleagues noted on this issue:

> We believe that when a species no longer meets the biological criteria for threatened or endangered it should be removed from the list; otherwise, the Endangered Species Act becomes a fake, and fakery ill serves both science and conservation. De-listing the peregrine will remove the temptation to continue projects beyond their useful tenures and will free up scarce funds to help truly endangered species, such as the Hawaiian endemic birds. It will also remove the temptation to use the peregrine as a vehicle for environmental agendas unrelated to its real needs for survival.[369]

> If, after 20 years of impressive increase in distribution and abundance, the American peregrine falcon cannot be judged fit for removal from the list of endangered species, then the purpose of the Endangered Species Act has, indeed, been turned into a mockery. Such inaction will only increase the growing suspicion of the American people about listings, and the future of the Endangered Species Act will be further compromised.[370]

Another objection to delisting was that peregrines along the Pacific coast did not meet the population distribution requirement of the recovery plan, which set out minimum population

[369] Cade et al., 1997, p.735.

[370] Cade et al., 1997, p.736.

goals for twenty-two separate regions in California, Oregon, Washington, and Nevada. As with the other objections to delisting, was a non-issue according to Jim Enderson:

> "If the Pacific plan had a fault, it was the specification of the numbers of breeding pairs required in each of a dozen subregions before the species could be declared safe. As it turned out, the peregrine came back in big numbers in the West Coast states, but the bird failed to read the recovery plan and sometimes were too scarce in certain areas and adequate or plentiful in others. Believe it or not, when it came time to remove the peregrine from the endangered and threatened list, some people argued that since the precise prescribed pattern of recovery had not occurred (even though local numbers were adequate), the peregrine should not be removed from the list. This absurdity was a good example of how the FWS was held hostage when formal expectations suffered from excessive detail."[371]

The same problem resulted because of the Eastern Recovery Plan. "The eastern plan, like the Pacific plan, also specified fairly precisely how many pairs must nest in each of several subregions," stated Enderson. "This provision would also ultimately work against delisting the falcon."[372] Opposition to delisting in the east also came from the National Wildlife Federation. "The Endangered Species Act was incredibly important for bringing the birds back, but we are a little apprehensive about the delisting for the eastern population," stated Margaret Fowle, NWF biologist.[373]

There are several factors that shed light on what seemed to motivating the biologists opposed to peregrine delisting. First, the two people who were co-authors of all three of the peer reviewed articles opposing delisting—Pagel and Bell—made a false claim about the ESA efficacy conserving the gray whale. According to Pagel and Bell, "the ESA has…lessen[ed] the risks of extinction and localized extirpation of some of the United States' rarest species," and as proof they cited the gray whale.[374] Yet this is demonstrably false because the whale had been

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[371] Enderson 2005, p.188.

[372] Enderson 2005, pp.188-189.

[373] Shogren 1999, p.A2.

[374] Pagel et al., 1998, p.464.

increasing since at least 1946 when an international treaty banned commercial hunting. This false claim calls into question whether the authors were interested in employing accurate information to support their arguments about the peregrine.

Second, Pagel's contradictory statements about the ESA's ultimate purpose (which are in this book's introductory section) raise questions about his knowledge of the law. In an article on the ESA he co-authored he claimed, "The primary intent of Congress in adopting the ESA was to prevent extinction, and that must be the ultimate measure of the law's success or failure."[375] In reality, recovery of species, not simply prevention of extinction, is the Act's ultimate purpose. Pagel acknowledged this when he was lead author for one of the articles opposing peregrine delisting, thereby contradicting his false claim about the ESA's ultimate purpose.[376]

Third, Pagel and Bell contended there was "the need for current data to allow a peer review of the security of a species prior to down-listing and de-lisitng."[377] Yet Pagel and Bell make no such statement about the *listing* of species. If they were truly concerned with the scientific integrity of species protection under the ESA they would have done so.

Fourth, the authors of the articles questioning delisting, stated, "It is incontrovertible that the Endangered Species Act (ESA) has played a critical role in saving the peregrine falcon in the United States."[378] This view, however, flies in the face of reality and considerable evidence, as reflected in data and information on peregrine conservation as well as the opinions of Tom Cade and Bill Burnham. Furthermore, the use of such a strong term as incontrovertible without much, if any, substantiation reveals the authors' advocacy for the ESA in what is supposed to be a dispassionate, scientific and scholarly article.

Fifth, if the peregrine were delisted, a substantial source of research funding would dry-up. "Many field biologists would have liked to have set aside portions of their budgets to publish results and applicable data regarding [peregrine] research and management," lamented Pagel and Bell. "Resources (budget and staff) for peregrines were traditionally directed towards field work and land management. We believe this approach may have been short-sighted considering how

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[375] Doremus and Pagel 2001, p.1260.

[376] "Delisting is the ultimate goal of all United States endangered species programs" (Pagel et al., 1998, p.464).

[377] Pagel and Bell 1997, p.740.

[378] Pagel et al., 1996, p.433.

much data from throughout the range of the peregrine (our own included) has not been published."[379] Even as early as 1995, Pagel saw that delisting was going to occur, as he lamented the lack of funding for ongoing surveying and monitoring efforts due to the fact that federal funding for peregrine research was declining.[380] Those involved in peregrine conservation were well aware that some, like Pagel and Bell, were opposed to delisting in large part because of the prospect of losing research funding. "Others may not wish the peregrine de-listed because their careers and personal income depend on it remaining listed," stated Bill Burnham on the peregrine's impending recovery.[381]

When Cade, Enderson, Kiff and White replied to Pagel, Bell and Norton, they commented on Pagel et al.'s call for extremely complex and time consuming monitoring prior to delisting.

> "Pagel et al. (1996) discussed a range of other biological and societal concerns they think should be addressed by research before de-listing is considered. These concerns include (1) various aspects of population genetics…(2) re-evaluation of the historical population size of the *anatum* subspecies (larger than supposed), (3) evaluation of 'anthropogenic disturbance to peregrines resulting from de-listing' (Pagel et al. 1996:432), (4) 'long term collection and analysis of life history parameters…necessary to estimate the finite rate of increase for the population (lambda [λ],' and (5) development of a population viability analysis. That is enough work to keep a team of investigators busy for their entire careers!"[382]

A prescient observation by Cade et al. because who better to be part of this team of investigators than Pagel, Bell and Norton?

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[379] Pagel et al., 1996, p.433.

[380] "Early peregrine falcon releases (via hacking) received 'adequate' levels of funding, staffing and public attention. Recently, the perception of partial recovery has caused funding and staffing for any efforts related to peregrine falcons to have been eliminated or drastically reduced. Agencies have not responded to the need for continued emphasis to survey and monitor peregrine falcons." (Pagel 1995, p.15).

[381] Burnham 1997, p.221.

[382] Cade et al., 1997, pp.734-35.

It would seem that Pagel, Bell and Norton perceived that if they could keep the peregrine listed, they would be able to receive more funding for more years of research. Pagel's role in this regard is especially instructive, as he made much of his career out of peregrine research. From 1983 to at least 1999, he was an employee of the U.S. Forest Service and the principle federal investigator in charge of supervising biologists on a study of peregrines in Oregon, Washington, and Northern California. Around the time delisting occurred in 1999, Pagel enrolled in the graduate program in ecology at the University of California-Davis in order to obtain his Ph.D., but he continued to do work for the Forest Service. However, it seems more than just a coincidence that after losing the battle to keep the peregrine listed, and seeing the reason for his funding fly free of the ESA, Pagel decided to get a Ph.D.

Sixth, Pagel and Bell's support of the ESA's ability to restrict land use seems to have contributed to their opposition to delisting. "[T]he ESA has provided guidance to preserve countless acres of habitat," they stated in barely concealed admiration.[383] Bill Burnham also had something to say about this topic; "Some people and organizations oppose de-listing of the peregrine falcon. Some do not wish any endangered species to be removed from the list of potential tools to stop development and extractive activities."[384] This seems especially applicable to Pagel who, as the lead federal peregrine biologist in the Pacific Northwest, played a pivotal role in establishing extremely onerous, and largely unprecedented, land use restrictions around nest sites that could extend up to three miles from a nest.[385] The National Wildlife Federation

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[383] Pagel et al., 1998, p.464.

[384] Burnham 1997, p.221.

[385] Pagel starts by outlining "restriction periods," meaning the time period in which courtship and nesting would be expected to take place. These restriction periods differed depending on the elevation of the nest site:

"Low elevation site - 0 - 610 meters 1 January to 30 June"

"Mid elevation site - 610 - 1220 meters 15 January to 31 July"

"High elevation site - 1220 meters plus 1 February to 15 August"

Then around each nest site, more or less concentric circles would be drawn, with the restrictions on land use activities gradually lessening father away from the nest site:
1) "Primary-400 to 800 meter [1/4-1/2 mile] restricted access zone. Usually no anthropogenic activity allowed during restriction period, and resource extraction (e.g., road construction, structure placement, logging, mineral extraction) or other permanent (e.g., location of trail or recreation facility), or semi-permanent (e.g., fire-camp, helispot, or.skid road) disturbance outside of restriction period."

joined Pagel, Bell, Norton and Johnson in opposition to delisting but favored downlisting from endangered to the less imperiled status of threatened. "We support downlisting first as a responsible, stepwise process to assure the success of the eventual delisting," stated Steven Torbit, a senior scientist with the federation.[386]

WESTERN RECOVERY PLAN

Another instance of opposition to delisting occurred from the late 1980s to the mid-1990s when the FWS attempted to revise the two recovery plans for the western U.S. In 1988 the FWS regional office in Portland, Oregon convened a meeting of the Rocky Mountain-Southwest recovery team and others involved with peregrine conservation in order to assess the peregrine's status in the region and to try to meet the FWS's goal of writing a new, unified recovery plan, to be called an "addendum," for two existing recovery regions, the Pacific and the Rocky Mountain-Southwest. The FWS wanted a unified plan that would divide the entire western U.S. into sub-regions so that one or more sub-regions could be delisted independently of other sub-regions if warranted.

After the meeting, nothing happened for one year until the FWS appointed the new "western" recovery team consisting of Jim Enderson of Colorado College as the team leader, and Lloyd Kiff of the Peregrine Fund, Clayton White of Brigham Young University, and Grainger Hunt of the Santa Cruz Predatory Bird Research Group. The team submitted a draft revised recovery plan, or addendum, to the FWS at the end of 1990, and one of its recommendations was that the peregrine should be delisted in the Southwest and downlisted in the Pacific coast and northern Rocky Mountain regions. Nothing happened until September 1991 when FWS employees and some others met to discuss the draft addendum, which generated a great deal of

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2). "Secondary-primary boundary up to a 3,320 meter [2 miles] seasonally restricted area. Usually no anthropogenic activity during nesting, and management activities outside of the seasonal restriction are designed to protect and maintain peregrine falcon habitat, with special emphasis on riparian areas."

3) "Tertiary-secondary boundary to a 4,830 meter [3 miles] circle of concern. Usually no blasting or large helicopter activities are permitted during restriction period. Most other management activities are allowed, but only after special review by a biologist experienced with peregrine falcon biology/applied habitat management. Established zonal boundaries of protection areas are variable."

(Pagel 1995, pp.13-14).

[386] Line 1996.

disagreement apparently because of its delisting and downlisting recommendations. As a result, the recovery team submitted another draft addendum to the FWS at the end of the year. Again, a long delay ensued, after which the FWS sent out the revised draft for review among experts, and this, too, generated controversy. A year later, in 1992, Dave Harlow of the FWS's Reno Nevada office told the newly appointed recovery team that the FWS was not sure if it would go ahead with the addendum because of negative reviews of it. In addition, Harlow said that the FWS was also leaning towards changing the peregrine's status nationwide, as opposed to regionally.

Yet again a long delay ensued until the spring of 1995 when the FWS convened a meeting of agency personnel to discuss the draft addendum. But the draft addendum reviewed was not the revised one written by the team. "Someone in the FWS had rewritten our document," stated Jim Enderson. "The fake [addendum] used our well-documented narrative but substituted different recommendations. It mainly soft-pedaled our interest in getting [the] species off the list and on its way. The bogus addendum proposed minimum standards for wild peregrine nesting productivity that my team felt were ridiculous," because the standards were far in excess of what was required for the population to be healthy enough to merit delisting. Authorship of the altered addendum was unclear, but Dave Harlow and Patricia Zenone, two FWS biologists, were presumably involved because their names appeared on the cover of the rewritten revised addendum. In response, Enderson sent a registered letter to then FWS regional Director Michael Spear in Portland, Oregon to object to the rewritten revised addendum. Enderson never heard back from Spear, and nothing happened until the peregrine was delisted in 1999.

Enderson, however, knew what the FWS was up to. "For me, and I think the rest of the team, the most unfortunate aspect was a loss of perspective," he observed. "By 1991, peregrines released by fostering or hacking had clearly shown they could survive and reproduce. Field reports unmistakably indicated widespread increases in breeding pairs. The rate of annual increase was then about 5 percent," a rate sufficient for a healthy, growing population.[387] "The final absurdity in this saga was procedural, the stuff of which some agencies are made," he stated. "People were actually convinced that the falcon could not be directly delisted, but that it must reside for a while on the list of species that were only *threatened* with extinction. No fair

[387] Enderson 2005, p.197.

leapfrogging the less grave category. You can't go for 'endangered' to 'delisted' without touching base at 'threatened.' Perhaps the neat thing about that idea for some folks was the additional busywork of someday having to remove the bird from the threatened list."[388] As with Pagel and Bell, rent seeking behavior, or trying to shape government decisions for financial benefit, seems to be what ultimately drove Harlow, Zenone and other opponents to delisting. "But for many, success was a bitter pill," observes Enderson. "Perhaps some people had too much at stake in terms of livelihood to let go of the blue falcon."[389]

Pagel, Bell, Torbit, Johnson, Harlow, Zenone, many at the FWS and Interior Department, the National Wildlife Federation, and their fellow travelers lost sight of the ESA's ultimate purpose. The ESA's ultimate purpose is delist species, not retain them on the list longer than necessary so that the they will generate research grants and be a jobs program for biologists, and so the Act can be used as tool with which to control use of land, water and other natural resources.

DISTORTING THE ESA'S ROLE

Despite that the federal government had relatively little to do with peregrine conservation, and that the ESA "provided no measurable benefit to recovery of the species and was a regular, if not constant, obstacle," according to Tom Cade and Bill Burnham, there are those who claim otherwise, including the FWS.[390] According to the agency:

> "The Service's peregrine falcon recovery program is unprecedented in the world and in the history of endangered species conservation. Over the last quarter of a century the Service has orchestrated a recovery effort that included the cooperation and dedication of

[388] Enderson 2005, p.199.

[389] Enderson 2005, p.197.

[390] "Recovery of the peregrine across North America epitomizes what is typically needed to bring a species back from the brink of extinction. Protection of this magnificent bird and its habitat under the Endangered Species Act (ESA), research, environmental restoration, and captive breeding and reintroduction required a

commitment by numerous agencies, organizations, and individuals for more than 25 years."—Charlie Scott, Chief of the Branch of Recovery and Delisting, Office of Consultations, HCPs, & Recovery, FWS (Scott 2000, p.4).

> hundreds of federal, state, county, and local agencies and governments, conservation groups, universities, tribes, private businesses, distinguished scientists, wealthy entrepreneurs and an army of volunteers ranging from young college graduates to retired citizens. Recognizing that everyone had something to give, the Service was able to combine the resources, talents, and expertise that this diverse group had to offer and use it effectively in the recovery of the peregrine falcon.[391]

Unfortunately, the FWS made another similar assertion; "The U.S. Fish and Wildlife Service established peregrine falcon recovery teams comprised of federal, state, and independent biologists to recommend actions necessary to restore peregrines in the U.S. As part of recovery efforts, scientists at Cornell University successfully bred and raised peregrine falcons in captivity."[392] In fact, as early as 1983, to mark the ESA's 10th anniversary, the FWS made a similarly misleading statement.[393]

These statements by the FWS are simply laughable because it was the Peregrine Fund, above all others, as well as the Santa Cruz Predatory Bird Research Group and the Midwest recovery group led by the Raptor Research Center at the University of Minnesota—along with dedicated members of the falconing and falcon conservation communities and a few people in academia—that initiated, organized, and sustained recovery efforts. The "army of volunteers" mentioned by the FWS consisted largely of more than 1,000 hack site attendants and field personnel organized by the four organizations responsible for releasing captive-bred peregrines, not the FWS.[394] It is true that without the efforts, at times heroic, of these volunteers, releases of peregrines would simply not have been possible. However, the three private organizations mentioned above were almost totally responsible for organizing these volunteers, especially the massive and time consuming effort to recruit, train, equip and oversee the hack site attendants. At best, the FWS and the federal government played a peripheral role in this impressive mobilization of people, falcons, equipment, and money. Any statement to the contrary stems

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[391] U.S. Fish and Wildlife Service. ND. The Role of the.

[392] U.S. Fish and Wildlife Service 2006j.

[393] U.S. Fish and Wildlife Service 1983g.

[394] Burnham et al., 2003, pp.229-259.

either from ignorance or a deliberate attempt to give the federal government credit it does not deserve. Furthermore, as Tom Cade of the Peregrine Fund noted above (see the section on captive breeding), the FWS reluctantly became involved in the captive breeding and release efforts.

The FWS makes a similarly spurious claim: "The banning of DDT made the recovery of the peregrine falcon possible. But the protections provided by the Endangered Species Act and the extraordinary efforts of the Service, in partnership with state wildlife agencies, universities, private ornithological groups, and individuals, accelerated the pace of recovery through captive breeding programs, reintroduction efforts, and the protection of nest sites during the breeding season."[395] Again, the Department of Interior is making specious claims, as it was non-federal entities, particularly a handful of individuals in the falconing and falcon conservation communities—coupled with more than 1,000 volunteers—whose efforts were remarkable.

Environmental pressure groups make similar false claims about the ESA's role conserving the peregrine. Environmental Defense Fund goes so far as to set up a straw man argument, with "myth" knocked down by "fact:"

> "Myth: The recovery of the…peregrine falcon is due to the banning of DDT and related chemicals, not the ESA.
>
> Fact: The ban on DDT…was essential to the recovery of peregrines…However, the…peregrine falcon did not return entirely on [its] own: The Endangered Species Act played an [*sic*] critical role in their recovery by funding translocations of birds from areas where they were more numerous, by preserving habitat, and by mandating stiff penalties for shooting and other acts harmful to endangered species."[396]

This is all the more of a straw man argument because no citation is given for the myth, notwithstanding the fact that the "facts" cited are either erroneous or distortions. As those with the Peregrine Fund note, especially Tom Cade and Bill Burnham, the ESA was probably more of a hindrance than a help, and the Act conserved essentially no habitat.

Other pressure groups make similarly specious claims. A number of groups— including U.S. PIRG, Center for Biological Diversity, Natural Resources Defense Council, National

[395] U.S. Fish and Wildlife Service 1999j.

[396] Environmental Defense Fund 1999a.

Wildlife Federation, Earthjustice, Defenders of Wildlife, American Rivers, Forest Guardians, and the Endangered Species Coalition—on the occasion of the ESA's 30th anniversary claimed; "U.S. Fish and Wildlife Service (FWS) and its recovery teams produced four regional recovery plans. Each plan included the release of captive-bred young to historic nesting sites (excluding Alaska), the protection and enhancement of critical breeding and wintering habitat, increasing and maintaining productivity in the wild, preventing human disturbance to nesting sites, and identifying causes of mortality and reduced productivity."[397] The National Wildlife Federation also used the ESA's 30th anniversary to make a similarly spurious claim.[398]

The Interior Department and Environmental Defense Fund used the occasion of the peregrine's delisting in 1999 to play politics, specifically to assert that Republican regulatory reform efforts in the mid-to-late 1990s would have jeopardized the peregrine's recovery. "After a narrow brush with extinction, the peregrine falcon is coming back," stated Interior Secretary, Bruce Babbitt. "Unfortunately, the environmental laws and research programs that brought the peregrine back are now at risk of extinction themselves" because of nefarious Republicans. "The original research that linked DDT to declining numbers of peregrine falcons and other birds was conducted by scientists of the agency now known as the National Biological Service. The recovery programs and legal protection that helped bring the falcon back were carried out under the Endangered Species Act. If efforts to gut these essential conservation programs continue, future endangered species may not be as lucky as the peregrine falcon."[399]

As with so much that Babbitt and others in the Interior Department claimed about the peregrine, this is simply not true. While those with the federal government did play prominent roles in demonstrating the link between DDT and avian reproductive failure—most notably Lawrence Blus who did much of the pioneering work on the brown pelican, Stan Wiemeyer and Richard Porter who did work on raptors, as well as Andre Belisle, Richard Prouty, and the

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[397] American Rivers et al., 2003d.

[398] "Where would they be without the law?" NWF asked. "[A] range of rare creatures are better off today thanks to the Endangered Species Act"(Milius and Johnson 1992, pp.50-51.) As an example NWS offered this; "Peregrine falcons were the first birds to show egg-shell thinning as a result of DDT contamination. By the time the species was added to the endangered list in 1970, peregrines had declined throughout their U.S. range and had disappeared entirely from the East. Today, there are 100 breeding pairs in the wild throughout the eastern United States, each the result of captive breeding. Nationwide, scientists have successfully released about 3,000 peregrine not only in the wild, but in cities like Denver" (Milius and Johnson 1992, p.58).

[399] U.S. Department of the Interior 1995b.

husband-and-wife team, Bill and Lucille Stickel—they did not, as Babbitt claims, conduct "*the*" research, meaning that they were not solely responsible for such research. Indeed, those not in the federal government carried out most of the DDT research (see footnotes in the section of this profile on DDT for a listing of many of the key publications that established the relationship between DDT, eggshell thickness and reproductive failure). For Babbitt to claim otherwise is not only false but it is an insult to the painstaking research carried out by many people.

Echoing Babbitt's claims is Michael Bean of the Environmental Defense Fund. "The remarkable recovery of this magnificent bird represents an important milestone in the history of wildlife conservation in America," he stated. "This success provides a good example of the value of strong environmental laws, and demonstrates that the Endangered Species Act works. That's a lesson worth emphasizing in this era of anti-regulatory sentiment."[400] Ironically, Bean's pro-regulatory sentiment in the 1980s in favor of Operation Falcon helped lend credence to the harm the sting operation did to peregrine conservation.[401] Bean's rant against "anti-regulatory sentiment" is also ironic because the ESA did more harm than good for peregrine conservation.

There are, however, those who provide a more honest assessment of the federal government's role conserving the peregrine. "With many endangered species, the U.S. Fish and Wildlife Service has assumed the lead role in research or management," stated Sanford Wilbur, FWS biologist and member of the Pacific Coast Recovery Team. "This is not the case with the peregrine falcon."[402]

WAS THE ESA NECESSARY?

The foregoing analysis in this profile of the American peregrine falcon has made it quite clear that the ESA was not necessary for the peregrine's recovery. In fact, the ESA was arguably a net detriment to the species. Recall what Tom Cade and Bill Burnham said; "Protection by the ESA for the Peregrine provided no measurable benefit to recovery of the species and was a

[400] Environmental Defense Fund 1999c.

[401] Bean 1986, p.361.

[402] Wilbur 1978, p.22.

regular, if not constant, obstacle because of its emphasis on law enforcement and permitting."[403] They also add; "As explained, 'protection' provided under the ESA had nothing to do with the Peregrine's recovery, eliminating the cause of its decline, or threats to its recovery."[404] As for the FWS's role, "The record does not support any statement suggesting that the recovery of the Peregrine occurred because of substantive actions by FWS," note Cade and Burnham. "The endeavor was largely a private sector-led enterprise with state wildlife and even other federal agencies (Bureau of Land Management, U.S. Forest Service, and National Park Service) having a larger role [than the FWS]."[405]

In addition to Cade and Burnham's assessment, there are a number of factors that call into question whether the ESA was necessary for the peregrine's resurgence. First, private individuals and organizations in the falconing and academic communities initiated recovery efforts. By the time the FWS got involved in the mid-1970s, "The…[agency] was more or less obliged to join with these non-governmental organization activities rather than develop its own internal program for peregrine recovery," notes Tom Cade.[406]

Second the FWS was an impediment to recovery in some significant ways. The "FWS did, however, exert considerable control over the various falcon recovery programs through its permitting procedures, funding of various projects (including Section 6 funding to the states) and the recovery planning process once that was instituted in 1974," Cade asserts.[407] Yet these permitting procedures were cumbersome and, in the case of Operation Falcon, did damage to the cause of peregrine conservation. "'Protection' under the ESA was unnecessary and provided no positive benefit for Peregrine restoration. In fact, it may have worked to the contrary because of the onerous permitting system imposed to do work with the species and the excessive involvement of law enforcement," state Cade and Bill Burnham.[408]

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[403] Cade and Burnham 2003b, p.277.

[404] Cade and Burnham 2003b, p.276.

[405] Cade and Burnham 2003b, p.276.

[406] Cade 1998, p.477.

[407] Cade 1998, p.477.

[408] Cade and Burnham 2003b, p.262.

Third, is the issue of funding. As noted in the profile, considerable private funds could have been raised in lieu of federal funding. In addition, states could well have provided funding instead of the federal government because they were enthusiastic proponents of peregrine conservation. Fourth, the peregrine's charisma made the need for the ESA questionable. According to Tom Cade, peregrine restoration would have occurred one way or another but the provision of millions of federal dollars just made it happen more quickly. The peregrine is one of a small handful of species, such as the bald eagle, that, due to their charisma, are able to garner significant amounts of funding and media coverage. As a result, efforts to conserve these species would almost certainly have occurred with or without the ESA.

Despite the overwhelming evidence that protection under the ESA was of no benefit, and very possibly a detriment, to the recovery of the American peregrine, the FWS and environmental pressure groups maintain otherwise. "[I]t is also acknowledged that the peregrine falcon would not be recovered today without the protection of the Act and the Act's provisions which triggered so many effective recovery efforts throughout the range of this species," claims the FWS.[409] "The Endangered Species Act was incredibly important for bringing the birds back," according to Margaret Fowle of the National Wildlife Federation.[410] And there was the aforementioned false and misleading claim by Environmental Defense Fund that ironically was posited to be a "fact" in response to the "myth" the ESA had nothing to do with the peregrine's recovery.[411]

One of Environmental Defense Fund's claims bears closer examination because it contains most of the elements of other false claims about the ESA's role conserving the American peregrine. "The Endangered Species Act also has an essential role on several fronts, such as funding recovery efforts, protecting habitat, prohibiting shooting and other forms of harm and simply providing an imperiled species with enough visibility to stimulate rescue efforts," assert Michael Bean and Margaret McMillan.[412] One should also question the validity of Bean and McMillan's assertions because when delisting occurred they said, "more than 1,650

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[409] U.S. Fish and Wildlife Service ND, The Role of the Endangered Species Act.

[410] Shogren 1999, p.1.

[411] Environmental Defense Fund 1999a.

[412] McMillan and Bean 1999.

peregrine pairs nest in the United States."[413] In reality, these 1,650 pairs included 319 pairs from *Canada*. When the 319 Canadian pairs are subtracted, the total is 1,331 pairs of *anatum* peregrines in the *U.S.*

As for the four areas Bean and McMillian purport the ESA helped the peregrine, one—protecting habitat—was discussed in this profile shown to have played an essentially meaningless role. Second, as usual, Tom Cade and Bill Burnham provide a much needed reality check on the issue of the ESA prohibiting shooting. "Under the Migratory Bird Treaty amendments of 1972 the Peregrine was provided protection from human persecution; by that time, however, shooting, egg-collecting, or taking of individual falcons had no measurable effect on Peregrine populations," state Cade and Burnham.[414] Third, "other forms of harm" (i.e., habitat protection and/or other forms of proximate physical harm caused by humans), either fall under the aegis of habitat protection—which, again, was essentially insignificant—or direct physical harm, such as shooting, which Cade and Burnham address and which could have been handled by laws other than the ESA, such as the Migratory Bird Treaty Act.

Fourth, is the purported public relations benefit of listing the peregrine under the ESA. Given the high profile of the peregrine and the massive effort undertaken by falconers and academics, a number of whom proved very adept at garnering media attention, the ESA added little in the way of publicity. "The ESA did, however, provide a platform for cooperation and a vehicle for funding," claim Cade and Burnham.[415] "Although it is hard to prove, we believe the almost universal cooperation witnessed on behalf of the Peregrine would have occurred without the ESA, but probably not at the same high level."[416] They add, "The ESA fostered cooperation and was a source of funding, especially through Section 6 provisions to the states. Without the ESA, dollars for endangered species actions in FWS and appropriations for other agencies would have no doubt existed but would have been less. In short, restoration of the Peregrine would have occurred without the ESA of 1973, but probably not as quickly or at the same high level and scope."[417]

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[413] McMillan and Bean 1999.

[414] Cade and Burnham 2003b, p.262.

[415] Cade and Burnham 2003b, p.277.

[416] Cade and Burnham 2003b, p.262.

[417] Cade and Burnham 2003b, p.262.

The upshot is that the ESA's most significant contribution to the conservation of the American peregrine falcon was to act as a fundraising tool. This is a very, very thin thread on which to hang claims of ESA success. After all, the aspect of the ESA that most distinguishes it, and the reason it is so cherished by its proponents, is its ability to restrict land and resource use, not its fundraising ability.

The various assertions by those claiming the ESA played a significant role in the peregrine's resurgence are simply not supported by the evidence. Perhaps the most damning conclusion on the relationship between the ESA and the peregrine's rebound is offered by Tom Cade and Bill Burnham:

> "Some people have asked if the problem with the Peregrine had occurred in the present day, could conservationists build and accomplish a successful recovery program now? We feel that it would be extremely difficult, if not impossible. Endangered species are too contentious to receive the widespread support needed for a cosmopolitan species like the Peregrine. [If listed today] through provisions of the ESA, the species would immediately be used by certain environmental groups as a pawn to stop government and private sector activities with which they disagree and to promote agendas that are at best tangential to species recovery. We continually see this abuse of the ESA with other endangered species with which we work and by people in both the private sector and government."[418]

A clear indication of why the FWS and environmental pressure groups went to such lengths to give the ESA false credit for conserving the American peregrine is offered by a FWS employee. "I believe the peregrine falcon is probably the number one species we could utilize in order to demonstrate that the Endangered Species Act works," stated Robert Mesta, the FWS biologist who wrote the proposed and final Federal Register rules on the delisting of the peregrine. "The act is up for reauthorization and is under a considerable amount of attack by a conservative Congress."[419] Mesta also acknowledged that the FWS "wants to demonstrate that

[418] Burnham and Cade 2003, p.358.

[419] Guess 1997.

the Endangered Species Act is working, and the peregrine falcon is the perfect, high-profile candidate."[420] Michael Bean of Environmental Defense Fund, made a similar characterization of the larger issues at stake for ESA proponents. "The remarkable recovery of this magnificent bird represents an important milestone in the history of wildlife conservation in America," states Bean. "This success provides a good example of the value of strong environmental laws, and demonstrates that the Endangered Species Act works. That's a lesson worth emphasizing in this era of anti-regulatory sentiment."[421] While the ESA can only be credited with very, very little of the American peregrine's rebound, and may well have been a net detriment to the species' conservation, the peregrine is a very a good example of something; the extent to which the Act's proponents will go to make false claims about the ESA's role conserving this species.

MONITORING PLAN and FALCONRY

There is an epilogue of sorts to the American peregrine's tenure under the ESA. When Congress amended the ESA in 1988, it required the FWS or the National Marine Fisheries Service, depending on which agency had jurisdiction, to monitor for at least five years the status of any recovered species. The purpose of this provision was to ensure species remained in good shape after delisting and hopefully would not need to be re-listed.

As with so much surrounding the peregrine's conservation, there was, and continues to be, controversy about the monitoring plan. The controversy, ostensibly about monitoring, is actually about that old bugaboo of environmental pressure groups—wildlife commerce, in this case falconry. When delisting occurred, pressure groups grew concerned that falconers would be able to take a limited number of nestling falcons each year in the states that would permit this. Even though at the time delisting occurred in 1999 the peregrine's population was healthy and increasing, and had been for many years, there were a few diehards who were loath to admit this because of their philosophical opposition to wildlife commerce. A large, healthy peregrine population made take for falconry more likely, and this made the diehards very nervous. Falconers, on the other hand, thought there were long overdue the legal right to take a few wild birds. After all, in falconers' eyes, it was they who initiated and led recovery efforts. In

[420] Line 1996.

[421] Environmental Defense Fund 1999c.

addition, falconers would only be taking a small number—in the tens—of peregrines per year, an insignificant amount when measured against the overall population.

After the FWS delisted the peregrine in August 1999, it was expected the agency would quickly release a monitoring plan and thereby capitalize on the favorable publicity surrounding delisting. But it was not until July 2000 that the FWS moved on the monitoring plan by releasing not the plan but the draft Environmental Assessment (EA) for the take of falcons for falconry.[422] In May of 2001 the agency released the final Environmental Assessment.[423]

In June 2001 a number of pressure groups that were diehard opponents to wildlife commerce—including Defenders of Wildlife, the Center for Biological Diversity, the New Mexico Audubon Society, the New Mexico Audubon Council, the Audubon Society of Portland (Oregon), and the Klamath-Siskiyou Wildlands Center—sued the FWS over their unhappiness with the Environmental Assessment. "Protections afforded by the listing of the peregrine under the Federal Endangered Species Act and the banning of the pesticide DDT, both in 1972, were critical elements in helping to recover the species," claimed the Portland Audubon Society.[424] Such a basic error, claiming Congress passed the ESA in 1972 when it was actually passed in 1973, calls into question the knowledge these Plaintiffs had of the ESA. "This recovery is being placed in jeopardy by a scientifically unsupported and purely gratuitous decision by the US Fish and Wildlife Service to allow falconers to remove up to 5% of the nesting productivity of peregrine falcons in the Western United States," added Portland Audubon.[425]

Plaintiffs filed their suit for several reasons, including that the FWS had issued the final EA without first issuing the final Monitoring Plan, and because the EA had an error in the mathematical model used to calculate the effects of falconry take on the peregrine population.[426] The error was that the FWS used two years of age as the age when peregrines began breeding, instead of the correct age of three. As a result, the FWS withdrew the EA in order to correct the error, and apparently, plaintiffs also withdrew their lawsuit.

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[422] U.S. Fish and Wildlife Service 2000f.

[423] U.S. Fish and Wildlife Service 2001a.

[424] Audubon Society of Portland, Oregon, ND.

[425] Audubon Society of Portland, Oregon, ND.

[426] Ligouri 2002.

The spring and summer of 2001 also marked a long-awaited event for falconers; the possibility to take of nestling falcons from the wild. In 2001 Utah issued permits for the take of twelve nestlings, and Arizona issued eight permits. Falconers took three birds in Utah and eight in Arizona. Four permits in Arizona did not receive applications for their use.[427]

The combination of two factors indicates fears by opponents of taking nestlings for falconry were vastly overblown: that the quotas were not filled, and that falconers did not even apply for all the permits in Arizona. The most plausible explanation for why the quotas were not filled is there simply was not much demand for wild nestlings. Due to the pioneering research by private falconers, led by the Peregrine Fund, falcon breeders were able to breed peregrines readily in captivity and supply much of the market for nestling peregrines.

The next step taken by the FWS was to release the draft monitoring plan in July 2001.[428] The FWS proposed to monitor peregrine populations for fifteen years, at three year intervals, in five regions.[429] The plan called for at least 271 nesting territories (20% of the known population) within these regions to be monitored; 46 territories in the Alaska region, 60 in the Pacific, 70 in the Rocky Mountain/Southwest; 45 in the Great Lakes/Midwest; and 50 in the East. The total number of territories in each region was further broken down into sub-regions.[430]

The FWS did not release the final monitoring plan until December 2003.[431] The final plan upped the ante for the number of nesting territories to be monitored to a minimum of 493. In addition, the plan called for monitoring pesticide levels through measuring eggshell thickness as well as feathers from adult birds. The elaborate monitoring measures in the plan appeared to be less of an effort to monitor the peregrine's status than they were to provide employment to raptor biologists, an issue that cropped-up when the FWS proposed to delist the peregrine in the mid-1990s.

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[427] Cade and Burnham 2003b, p.276.

[428] U.S. Fish and Wildlife Service 2001b.

[429] Interior Alaska; the Pacific (Washington, Oregon, California, and Nevada); Rocky Mountain/Southwest (Arizona, Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming); Great Lakes/Mid-west (Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin); and the East (Maine, New Hampshire, Vermont, New York, Massachusetts, Connecticut, Pennsylvania, New Jersey, Delaware, Virginia, and North Carolina). (U.S. Fish and Wildlife Service 2001b).

[430] U.S. Fish and Wildlife Service 2001b.

[431] U.S. Fish and Wildlife Service 2003g.

2003 was also when the FWS released the draft revised Environmental Assessment for falconry take.[432] In March 2004 the FWS released the Final Revised Environmental Assessment.[433] The FWS decided to allow a take of a maximum of 5.0% of each year's nestlings west of 100º longitude. Take of nestlings would, however, be contingent on approval by the state agencies in which the peregrines lived and subject to federal standards.[434] In response to the Final EA, the same pressure groups, except Defenders of Wildlife, filed another lawsuit. Daniel Rohlf and Susan Brown, professors at Lewis and Clark Law School's Pacific Environmental Advocacy Center, represented the groups. While the lawsuit was ostensibly over the final revised Environmental Assessment, it was more an effort to prevent take of falcons for falconry. The reasoning and evidence employed in support of the suit reveal this, as well as being tortured and baseless.

Overall, it seems plaintiffs' ignorance of the role the ESA played in the peregrine's conservation helped spur them to action. "The recovery of peregrine falcons is one of the great success stories of the ESA," they claimed."[435] Plaintiffs further distorted the role played by the ESA and FWS in the peregrine's conservation. "FWS, partner organizations, and many individuals worked for years to recover peregrines. After federal law banned DDT in 1972, the Service and cooperators began an intensive effort to release captive-raised peregrines into the wild."[436] As discussed in this profile, breeding, raising and releasing peregrines to the wild began well before the DDT ban and was almost entirely due to the hard work and dedication of a small group of falconers in the private sector. One of the subtexts to the lawsuit was that the ESA benefited the peregrine and that the proposed take of peregrines for falconry would cause harm. "Though the agency [FWS] declares that activities affected [*sic*] peregrines have not 'changed significantly' since delisting, FWS offers not one scintilla of evidence to support the notion that removing the birds from protection of one of the nation's most powerful environmental laws has had no effect."[437]

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[432] U.S. Fish and Wildlife Service 2003h.

[433] U.S. Fish and Wildlife Service 2004c.

[434] U.S. Fish and Wildlife Service 2004c.

[435] Audubon Society of Portland et al., 2005a.

[436] Audubon Society of Portland et al., 2005a.

[437] Audubon Society of Portland et al., 2005a.

In response to the initial lawsuit filed in response to the 2001 Environmental Assessment, Tom Cade and Bill Burnham stated, "Some people worried during the delisting process, and do even now, that without being listed under the ESA the Peregrine Falcon would be unprotected. As explained, 'protection' provided under the ESA for the Peregrine Falcon had nothing to do with the Peregrine's recovery, eliminating the cause of its decline, or threats to recovery."[438] Unfortunately, such reasoning was lost on the plaintiffs and their lawyers.

In terms of specific issues pertaining to the lawsuit, plaintiffs exhibited a similar lack of understanding of some specific aspects of peregrine conservation as they did of the role played by the ESA and the FWS in the peregrine's conservation. Basically, the plaintiffs contended that when the FWS applied 5.0% annual nestling take for falconry to the population model—in an attempt to determine (λ), or lambda, the rate of population growth—the population showed decline. Therefore, plaintiffs argued, the FWS could not implement the 5.0% annual take because doing so contravened a number of federal laws and would lead inevitably to the decline of the peregrine's population.

Plaintiffs, however, tried to downplay one crucial fact: even when the FWS ran the population model with no level of nestling take, the overall population still declined. The FWS thus reasoned correctly that the model was fundamentally flawed. So in the 2004 Final Revised Environmental Assessment the FWS decided the more germane measurement was to determine λ under different levels of falconry take. As a result, the FWS determined that a 5.0% annual take would reduce λ from 1.03 to 1.02, meaning that the predicted rate of annual population increase would decline from 3.0% to 2.0%. Plaintiffs interpreted this change to mean that under the planned 5.0% annual take, there would be 33.3% fewer falcons produced each year, and therefore they alleged the FWS incorrectly estimated the degree to which falconry take would reduce the rate of population growth. Not surprisingly, plaintiffs essentially neglected to mention that the model predicted that even less than 5.0% annual take the overall peregrine population would continue to increase.

Plaintiffs demonstrated their ignorance of peregrine biology and ecology by arguing that this potential reduction in lambda was significant. First, at the time of the lawsuit all indications were that the peregrine population was continuing to increase since delisting. Between 1998—the year used by the FWS for population data included in the 1999 final delisting rule—and

[438] Cade and Burnham 2003b, p.276.

2003, the last year for which data was available prior to the lawsuit, the peregrine population in the lower 48 states west of 100º latitude increased by a minimum of 8.0%. A number of states that showed significant peregrine growth prior to 1998—Arizona, California, and Utah—had not been surveyed since 1998. Oregon had not been surveyed since 2000 and only a sample of the Washington population had been surveyed in 2003. Had these states been surveyed by 2003, they most likely would have shown healthy population increases as well. The upshot is that the peregrine population in the lower 48 states west of 100º in all likelihood increased a minimum of 8.0%.

Plaintiffs also claimed that the dramatic increase in Alaska's population of American peregrines between 1998 and 2003 (209.0%), could not be substantiated because it came from unreliable sources. Plaintiffs further reasoned that even if the Alaska population increase could be substantiated, when it was added to the total number of pairs from the lower 48 west of 100º it presented a distorted picture of peregrine population change west of 100º. The first part of the Plaintiff's argument was roundly rejected in the judge's opinion of the case because Alaska relied on sound data to arrive at the 2003 estimate of 930 pairs.[439] The judge also rejected plaintiff's contention that Alaska data inflated the data for the lower 48 states west of 100º.[440]

Second, was the unfounded notion underlying the Monitoring Plan and Plaintiff's lawsuit: that existing monitoring at the time of delisting was inadequate to detect potential peregrine population declines. Therefore, more elaborate monitoring, over a long period of time, was needed. As they had with much pertaining to peregrine conservation, Tom Cade and Bill Burnham provided an informed and reasonable view on the issue of monitoring:

> "If we look to the example of the *tundrius* Peregrine, no monitoring plan was implemented. For the *tundrius* and the *anatum* race alike, one thorough survey at the end of the five years would be sufficient. Because several biologists have continued to monitor their populations since delisting and Peregrine numbers continue to increase, those data could probably be considered sufficient and representative for regional populations of the species."[441]

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[439] Audubon Society of Portland et al., 2005b.

[440] Audubon Society of Portland et al., 2005b.

[441] Cade and Burnham 2003b, p.276.

Prior to, during, and after Plaintiffs filed their lawsuit, there were a number of peregrine monitoring programs around the country that essentially negated the need for fifteen years of monitoring as mandated by the FWS's Monitoring Plan. Furthermore, these various monitoring efforts also provided good evidence of the peregrine population's robust health, contrary to claims by Plaintiffs.

Of the various regional monitoring efforts around the country, the most comprehensive was, and continues to be, the Midwest Peregrine Falcon Restoration project, which is run out of the University of Minnesota. Since 1986 the project has issued annual reports documenting, among other things, the locations of peregrine nesting pairs, the success of these pairs fledging young, the number of captive-raised peregrines released to the wild in thirteen states (Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin) and two Canadian provinces (Manitoba, Ontario). In 2004 the project made their nearly two decades of data available on a database accessible via the internet. In addition, all of the project's annual reports, starting in 1986 are available on the project's website.[442]

Most of the states in New England (Vermont, New Hampshire, Maine, Connecticut), as well as New York, conduct annual surveys. Since 1984 the Vermont Fish and Wild Department and the Vermont Institute of Natural Science, a private, non-profit organization, have monitored the state's peregrines. In 1998 the National Wildlife Federation joined the project and took the lead in coordinating it. Data gathered are similar to those gathered for the Midwest project and are compiled in annual reports. As in the Midwest, the Vermont monitoring project has revealed a healthy and steadily increasing peregrine population.[443] A number of other states also conduct annual peregrine surveys to determine number of nests, young produced and young fledged (e.g., Pennsylvania and North Carolina).[444] In 2005, when plaintiffs filed their lawsuit, a number of other states conducted annual peregrine surveys (Idaho, Washington, Wyoming).

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[442] Midwest Peregrine Society, ND.

[443] Fowle et al., 2005.

[444] Information about these monitoring projects can be found at: North American Bird Monitoring Projects Database (http://www.bsc-eoc.org/nabm/index.jsp).

Third, the American peregrine population contains a large number of "floaters," sub-adult and adult birds that are not paired and so "float" unattached to a specific territory while they seek a mate. The large size and health of the American peregrine population contributes to the large number of floaters. The best estimate to quantify the ratio of floaters to breeding individuals is between 1:1 and 2:1.[445]

Fourth, it is extremely unlikely that 5.0% of the American peregrine nestlings produced annually west of 100º will ever be taken for falconry or that the annual level of take will have a significant impact on the overall population for a couple of reasons. One is the high degree of mortality among chicks. Most raptors average 40%-60% mortality in the first year of life.[446] The falcons preferred by falconers are chicks because they become imprinted on their human handler and are therefore easier to train than wild adult birds. So given the high rate of chick mortality, removing at most 5.0% of the nestlings per year would have an essentially negligible impact on the population Two, as mentioned, most states would likely not permit their entire annual quota to be filled out of concern for the health of their peregrine populations.

In addition, falconers simply did not require so many birds annually (5.0% of the population) and will in all likelihood will not require so many in the future because falconing is a very small, specialized sport, falcons are fairly long lived (10-15 years on average), and most falconers can only keep one falcon at a time because falcons require daily care and exercise. Another factor that limits the number of falcons taken each year is that it is very difficult and time consuming for a falconer to gain the requisite capabilities and authorizations, as reflected by licenses and achieving designated levels of expertise by sanctioning bodies such as the North American Falconers' Association, to be allowed to take nestling falcons. At the time of the lawsuit, an indication of the limited demand for nestling falcons was provided by the fact that when the only legalized take since delisting occurred in Utah and Arizona in 2001 neither the full quota of nestlings was taken nor the full number of licenses applied for by falconers.

Fifth, the desire of plaintiffs to rectify the population model, meaning arriving at an accurate measure of lambda (λ), was essentially the same argument made by those opposed to delisting in the late 1990s, and it is just as baseless, if not more so. In essence, plaintiffs used a seemingly scientific argument as a hindering and derailing tactic. At the time of the lawsuit, all

[445] White et al., 2002, p.34.

[446] Braun et al., 1977.

indications were that the peregrine's population over the vast majority, if not all, of its range had increased at roughly the same rate (5.0-10.0%) that it increased in at least the decade-and-a-half before delisting in 1999. This was yet more proof that the peregrine's overall population was healthy between delisting and when opponents of falconry started filing lawsuits in the early 2000s. The continued health of the peregrine's population since delisting made determining λ—a prohibitively expensive and time consuming exercise, likely requiring millions of dollars, and perhaps tens of millions of dollars, and years, likely upwards of a decade, to collect the requisite data—all the more unnecessary.

The level of certainty about the American peregrine's population desired by Plaintiffs, as reflected in their fixation on λ, would not only be extremely costly, but, ultimately, a waste of money. Plaintiffs lost sight of the point of the ESA, which is to delist species, not keep them listed indefinitely. More broadly, Plaintiffs lost sight of one of the guiding principles of wildlife conservation, which is to allocate finite funds most cost effectively, such as spending money and effort conserving those species that are truly imperiled instead of diverting resources to species, like the American peregrine falcon, that have rebounded and have strong, viable populations.

All of these reasons why the monitoring plan and the lawsuit were unnecessary made little difference to most of the major pressure groups supporting the ESA. "The monitoring plan is meant to ensure that healthy falcon populations are maintained," stated most of the Act's major supporters—including U.S. PIRG, Center for Biological Diversity, Natural Resources Defense Council, National Wildlife Federation, Earthjustice, Defenders of Wildlife, American Rivers and the Endangered Species Coalition—in December 2003 to mark the ESA's 30th anniversary. "Unfortunately, the population assessments that warrant the take of the chicks for falconry were derived from outdated data that may allow too many chicks to be taken. As a result, falcon counts in Nevada, New Mexico, and Utah have indicated that peregrine numbers are on the decline."[447]

This statement is false and misleading, as is so much of the information put out by the ESA's proponents. First, the claim that declining peregrine populations are the result of outdated data is a non sequitur. If populations were declining, which they were not, this would not be due to faulty population modeling data. It would be documented by surveys. Second, the statement

[447] American Rivers et al., 2003c.

is factually incorrect; peregrine populations were not declining in all three of these states. In December 2003, the Utah Division of Wildlife Resources, the agency in charge of state wildlife conservation programs, released a status report on many of the state's vertebrate animal species, including the peregrine falcon.[448] "There are about 180 breeding pairs in Utah," the report stated. "[I]t is likely that the Utah population has increased somewhat in recent years, particularly in the southern part of the state," where the vast majority of the population exists.[449]

In response to the initial lawsuit filed in 2001 by Defenders of Wildlife, the Center for Biological Diversity and others, Tom Cade and Bill Burnham of the Peregrine Fund provided some much needed perspective: "This lawsuit and argument against harvest are not based on biology or science but on emotion and political agendas. It is unfortunate that the energy and resources being expended in litigation cannot be redirected to some actions of value to endangered species and wildlife conservation."[450] Fortunately, the Plaintiffs lost their lawsuit. The decision issued by the judge in the case was a resounding defeat, as it denied practically all of the issues under contention.[451]

CONCLUSIONS

The conservation of the American peregrine falcon was due to a variety of factors, the most important of which the Endangered Species Act can claim no credit. Other factors had little, if anything, to do with the Act. As Tom Cade and Bill Burnham have noted, the Act and the FWS were constant impediments to peregrine conservation. In at least two instances—excessive red tape for obtaining permits and Operation Falcon—the ESA was detrimental to the peregrine.

The recovery of the American peregrine falcon was due primarily to the banning of the pesticide DDT in 1972, not the passage of the ESA in 1973. In addition, peregrines that survived the DDT-induced population crash, as well as peregrines that were cases of data error, account for approximately 55%-57% of the sub-species' recovery. The primary boost given to the

[448] Bosworth 2003, pp.147-148.

[449] Bosworth 2003, p.147.

[450] Cade and Burnham 2003b, p.276.

[451] Audubon Society of Portland et al., 2005b.

peregrine by humans was provided by a relatively small handful of falconers, most of who were in the private sector, that undertook the painstaking work to breed peregrines in captivity and then release them to the wild. The U.S. Fish and Wildlife Service, under the auspices of the ESA, was a reluctant participant in these efforts. Furthermore, the FWS and environmental pressure groups that were proponents of releasing peregrines scarcely mention, if at all, that the peregrines released in the salt marshes of the Mid-Atlantic coast constituted an exotic introduction. The FWS and environmental pressure groups extoll the peregrines established in the salt marshes as a great success of the ESA despite their well-documented opposition to the introduction of exotic species. Another little acknowledged aspect of the peregrine's conservation is that a tremendous amount of resources were wasted through FWS actions, specifically the creation of multiple recovery regions, and the consequent publication of multiple recovery plans, plus multiple versions of some of these plans. The fact that most members of the recovery teams were relatively unqualified compounded this problem.

The ESA's prohibitions on taking a listed species, especially the Act's prohibition on modifying habitat through the prohibition on "harming" a listed species, had virtually nothing to do with the peregrine's resurgence. When the peregrine did finally merit delisting, this occurred belatedly due to a couple of factors; reluctance on the part of the federal government and ESA proponents to delist a species that garnered them much positive, if undeserved, publicity, as well as funding. Opposition to the take of nestling falcons for falconry was motivated more by opposition to falconry and wildlife commerce than it was concern with the peregrine's conservation.

The reality is the FWS and ESA were in all likelihood a net detriment to conservation of the American peregrine falcon, or at the most they provided no net benefit. Those who claim the American peregrine falcon is an ESA success story are either unaware of the facts about the peregrine's conservation or have chosen to ignore and distort them. To the extent that the conservation of the American peregrine is a success story, it was due in large part to the extremely hard work and dedication of a small number of true conservationists, most in the private sector, who championed peregrine conservation in the face of opposition and apathy from the FWS, others in the federal government, and many environmental pressure groups.