

## Impact of Wild Take of Raptors for Falconry in Washington State Overview

This is one report in a three-part analysis to quantify the impact of wild falconry harvest (take) as a traditional practice of North American falconry on wild raptor populations in the state of Washington over a ten-year period covering January 1, 2000 through December 31, 2009. This study includes both raptors taken in Washington as well as raptors released or lost back to the wild in Washington, presenting for the first time a comprehensive longitudinal dataset showing the net impact on the wild populations. Previous studies have only evaluated take or over short periods of time, which presents a worst-case scenario. Previous conclusions have unanimously declared that even worst-case theoretical falconry take scenarios have *absolutely no negative impact* on the wild populations of raptors<sup>10</sup>. One survey of European falconers in the 1970s alludes to the potential difference in the theoretical impact and the actual net impact summarizing as, "Between 80 and 90 percent of trained falcons and between 50 and 67 percent of trained hawks were later lost or released."<sup>9</sup> With the comprehensive take and release data collected and analyzed, this is the first major analysis of the actual net impact of the modern practice of wild take for falconry.

The first Freedom of Information Act (FOIA) request was filed with the US Fish and Wildlife Service in June 2010. That request was only answered with the data of raptors taken from the wild in Washington. This was because only intakes were entered into the USFWS database whereas releases and losses are not. Second and third FOIA requests were submitted to gather the data for release, escape, and loss of wild-taken birds and captive-bred birds. The author wishes to thank the US Fish and Wildlife Service for their cooperation in filling the FOIA requests as quickly as they could and with such thoroughness. The Washington Falconers Association paid for the initial FOIA processing fee, and then generously compensated the author for an additional administrative fee. It is with great pleasure that this study has been produced on behalf of falconers and their birds.

### Comparative Impact

Assuming that not a single falconry raptor returned to the wild, the level of take from the wild by falconers in Washington is well below a level that would have any negative impact on the wild populations. The levels of take are easily sustainable. In fact studies of the impact on immature nestling raptor take have identified a positive impact on the remaining nest mates due to removal of sibling competition, fratricide, and allowing the parental resources to be concentrated on fewer chicks. Falconers routinely will treat the remaining chicks for parasites if they are detected in the nest further raising the likelihood of chick survival.

Falconry's complete and total wild take impact can be compared with the impact of a single Washington wind farm, the Big Horn Wind Farm in Klickitat County. In the initial year of operating, this wind farm killed more birds than the average annual falconry take for the past ten years and nearly as many as the entire falconry population permanently removed from the wild during the ten year time span. During that year, between 30 and 49 raptors were killed<sup>8</sup> including Kestrels, Red-Tail Hawks, Short-Eared Owls, and Ferruginous Hawks. This is actually seven times greater than the estimated mortality rate from the planning of the project, and is indiscriminate killing species of concern and threatened species including species that the department has denied for falconry take due to uncertainty regarding their populations. Some studies have put the average avian fatalities at 2.19 per turbine per year, and 0.033 raptor fatalities per turbine per year. Yet this is also an insignificant number of raptor deaths when compared with the vast number of natural deaths, and is negligible compared with the size of the wild populations. Studies forecasting the growth of wind farms in the northwest and the increased raptor deaths have concluded that even killing 516 raptors every year would have no impact on the northwest raptor populations<sup>4</sup>. If these losses can be justified, falconry's minimal take, use, and release of healthy birds cannot be sensibly denied without questioning the impact of wind farms, logging, and other enterprises that negatively impact wild raptor populations.

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Starting in 2007, the USDA has reported on their animal control efforts on a per state basis<sup>14</sup>. This means that the impact of USDA animal control efforts on raptors in Washington state is known for 2007, 2008, and 2009 overlapping with the latter years of the study data. The below figures do not count birds trapped and relocated, but only birds that were killed or euthanized as reported by the USDA. These birds may be shot, trapped, or netted.

<b>Species</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Total</b>
Kestrel	6	1	3	<b>10</b>
Marsh	0	20	11	<b>31</b>
Red-Tailed	0	30	13	<b>43</b>
Rough-Leg	0	9	14	<b>23</b>
Short-	0	8	0	<b>8</b>
<b>TOTAL</b>	<b>6</b>	<b>68</b>	<b>41</b>	<b>115</b>

*Chart: USDA animal control activities resulting in raptor deaths.*

Just in the three years that data is available, the USDA has killed 115 raptors in Washington state. Two of these species, the Short-Eared Owl and the Rough-Leg Hawk, were adamantly insisted by WDFW to be such sensitive species that no level of falconry take could even be considered. This would show a disconnect where apparently authorities are less concerned about killing these species than allowing falconers to take them from the wild, learn about their habits and husbandry, and in all likelihood return the individual safely to the wild.

The US Fish and Wildlife Service recently released a plan to shoot 1,200 to 1,500 Barred Owls in Washington and Oregon<sup>3</sup>. While this is assumed to have a positive impact on the endangered Spotted Owl, there is no guarantee that it will and no guarantee that other species, including the Spotted Owl, will not be shot unintentionally as appears to have been the case in some of the USDA efforts listed above.

These sets of data are shown not to dwarf the numbers involved in falconry, but to show levels of death that are acceptable based on biological models and forecasts. The largest causes for raptor death are not wind farms, USDA selected targets, or falconry, but rather natural causes such as disease, starvation, predation, and collisions with cars and buildings. What these data sets are intended to illustrate are a few known quantities of take, authorized by government officials, controlled, and explicitly allowed. Indeed they have been studied and *determined to have no negative impact*. If falconry take is decided to be consequential as department officials have testified in order to keep species off limits for falconry take, this would call into question any industrial take via wind farms, logging, or even depredation orders.

**Raptors taken by Washington falconers outside of Washington state**

There were 25 raptors taken by Washington falconers outside of Washington state during the ten year time period. As this is a study of the impact of take on raptors in Washington, these are removed from the net assessment, however they are shown below for completeness.

State	Raptors
Alaska	1 Goshawk, 1 Peale's Peregrine
Arkansas	1 Red-Tailed Hawk, 1 Cooper's Hawk
Arizona	2 Harris' Hawk
California	1 Red-Tailed Hawk, 3 Merlin, 1 Cooper's Hawk
Idaho	1 Gyrfalcon
Kansas	1 Prairie Falcon
Kentucky	1 Sharp-Shinned Hawk
Nevada	1 Red-Tailed Hawk
Oklahoma	1 Red-Tailed Hawk, 1 Merlin, 1 Cooper's Hawk
Oregon	1 Red-Tailed Hawk, 1 Peregrine Falcon
Texas	3 Red-Tailed Hawk, 1 Harris' Hawk
Wyoming	1 Peregrine Falcon

Chart 1 Raptors taken by Washington falconers outside of Washington state.

### Raptors taken in Washington

During the ten year time period, Washington state only permitted two species of raptor to be taken by falconers residing in another state - the Red-Tail Hawk and the Kestrel. To identify all records where the source of the raptor was Washington and the falconer was not a Washington state resident would take enormous administrative effort. To the best recollection of Washington Department of Fish and Wildlife (WDFW) officials, there has been no take of Washington raptors by non-Washington falconers in recent memory<sup>13</sup>.

The first dimension to evaluate is the total number of raptors taken in Washington during the ten-year time span, which is 288. Over a ten-year period, only 288 raptors were taken from the wild in Washington for falconry by over 200 licensed falconers. This is an average of less than 29 raptors taken in Washington for falconry per year, and in the most recent two years of the study data the average has dropped significantly to only 12 per year.

The second dimension to this data is the species that were taken. Nearly 41% of all raptors taken were Red-Tail Hawks, a total of 118 over ten years. This is a large and numerous raptor with many resident as well as migrating individuals passing through Washington. Red-Tail Hawks have a healthy population, measured by many studies to be growing and frequently comes into contact with humans and human activity.

The second most popular raptor taken in Washington was the Northern Goshawk, which accounts for only 14% of all raptors taken in Washington, a total of 40 individuals over a ten-year period. Although the species is considered healthy and growing, these large raptors are secretive living in forested areas in higher elevations. Thus they are not casually observed nearly as often as the Red-Tail Hawk, which routinely perches over highways and on agricultural equipment. Many raptors that are less observable, either due to their environment or their behavior, will generate less confidence about their population numbers until more conclusive studies are undertaken. Studies to date, like the Environmental Assessment issued by the US Fish and Wildlife Service<sup>1</sup>, have found this species to be stable and growing.

Species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Cooper's Hawk	0	0	3	1	4	1	2	2	0	2	15
Goshawk	2	1	3	12	5	10	3	3	1	0	40
Great Horned Owl	0	0	1	0	0	0	0	0	0	0	1
Gyr Falcon	0	2	0	1	2	1	2	0	0	0	8
Kestrel	0	2	5	9	3	4	4	3	2	2	34
Merlin	1	3	5	4	3	9	5	1	1	1	33
Peregrine Falcon	0	0	0	0	2	3	4	2	2	1	14
Prairie Falcon	0	1	5	3	3	4	4	1	1	0	22
Red-Tailed Hawk	1	11	15	19	19	11	15	16	5	6	118
Sharp-Shinned Hawk	0	0	1	1	0	0	1	0	0	0	3
<b>TOTAL</b>	<b>4</b>	<b>20</b>	<b>38</b>	<b>50</b>	<b>41</b>	<b>43</b>	<b>40</b>	<b>28</b>	<b>12</b>	<b>12</b>	<b>288</b>

Chart 2 Raptors taken in Washington state by Washington falconers.

The American Kestrel was third most popular as a raptor taken in Washington representing 12% of the raptors taken, 34 total raptors over a ten-year period.

The fourth most popular raptor was the Merlin, with 11% of the total raptors taken, 33 total raptors taken over a ten-year period.

The rest of the raptors taken fall into negligible categories as can be seen in the chart. In fact, three species that were allowed to be taken during this time period were not taken for falconry during this time span. These are the Rough-Legged Hawk, the Swainson's Hawk, and the Harrier. A Swainson's Hawk was last remembered to have been taken in 1997 and actively hunted by a falconer<sup>13</sup>. Several Harriers were last remembered to have been taken in the late 1980's/early 1990's and hunted successfully<sup>13</sup>.

The US Fish and Wildlife Environmental Assessment<sup>1</sup> for falconry analyzed the raptors taken for falconry from 2003 through 2005. A total of 922 raptors were taken nationwide in 2003. Of these, 50 were taken in Washington representing 5.5% of all raptors taken in the United States. In 2004 a total of 1,068 raptors were taken for falconry with 41 of these being in Washington, only 3.8% of the total. And in 2005 a total of 1,131 raptors were taken in the United States, with 43 of these being in Washington, or 3.8% of the total. With approximately 215 licensed falconers in Washington during this time span, and an approximated 4,250 in the United States, Washington is home to roughly 5% of all falconers in the United States. The falconers of Washington actually take a slightly smaller percentage of raptors than would be estimated given their numbers.

	United States	Washington
2003	922	50
2004	1068	41
2005	1131	43

Chart 3 Total raptors taken in the United States and in Washington state in 2003, 2004, and 2005.

### Wild Raptors Returning to Wild Populations

During the ten-year period, many birds that were held by Washington falconers returned to the wild. Some of these were taken from the wild during this time period, some were taken prior to the period, some that were taken during this time period were returned after this period, and some were the progeny of wild-taken birds. Birds are often returned to the wild by their falconer intentionally. The falconer conditions the bird, exercises her to add muscle, and feeds her on rich foods to add fat stores. The falconer then selects the best method and location for release and returns the bird to the wild population pool. Birds also return to the wild accidentally. During a hunt a bird may be chasing prey or be chased or attacked by another raptor. During such flights the bird may cover many miles and become lost neither being able to return to her falconer nor able to be located by her falconer. Birds in flight are sometimes swept away by winds or storms. Some falconers also practice a technique called hacking whereby a bird is allowed complete freedom of movement in an area, but is still provided for by the falconer with the intent of retaining the bird. A bird being hacked may be chased away by other raptors, may become lost, or may take off as it is not under the direct control of the falconer. Falconers must report any such loss events. It can be considered to be a "Released" bird or an "Escaped" bird. For the purposes of this evaluation, the result is the same - the bird has returned to the wild population. During the ten-year time span, 222 birds that originated in the wild returned to the wild. These are only the falconry raptors that were directly taken from the wild by Washington falconers and returned to the wild, most in Washington.

Of the birds that were taken from the wild, the data about individuals is striking. All of the individuals except 18 could have their age determined at the time of their release. Eleven of the eighteen were Kestrels, for which age cannot reliably be determined by plumage. Of the remaining 204 birds, their age at return to the wild was documented as follows.

The individual reports on each bird give some indication as to the depth of care and attention that these birds received. One bird in this group was received with a broken wing, hunted successfully, and then returned to the wild. Another bird, native to Arizona, was taken back to Arizona and released there three years later. There is a ten-year-old Gyrfalcon that returned to the wild, an eleven-year-old Red-Tail Hawk, and a 22-year-old Goshawk that returned to the wild. These are birds that had the best of care, food, exercise, nutrition, and medical attention that were returned to the wild breeding population with much more experience and survivability.

Species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Cooper's Hawk	1	1	1	1	1	1	3	1	0	2	12
Goshawk	1	2	0	1	0	3	3	2	5	5	22
Great Horned Owl	0	0	0	0	0	0	0	0	0	0	0
Gyr Falcon	0	0	1	1	2	0	0	0	1	3	8
Harris' Hawk	1	0	0	1	0	0	0	0	0	0	2
Kestrel	0	1	4	4	3	3	2	6	4	5	32
Merlin	1	2	2	1	2	3	1	1	2	1	16
Peregrine Falcon	0	0	0	0	0	0	1	0	0	3	4
Prairie Falcon	4	3	0	2	1	0	3	3	1	1	18
Red-Tailed Hawk	7	9	10	12	17	12	5	11	9	13	105
Sharp-Shinned Hawk	0	1	1	0	0	0	1	0	0	0	3
<b>TOTAL</b>	<b>15</b>	<b>19</b>	<b>19</b>	<b>23</b>	<b>26</b>	<b>22</b>	<b>19</b>	<b>24</b>	<b>22</b>	<b>33</b>	<b>222</b>

Chart 4 Wild raptors returned to the wild populations after take for falconry.

#### Captive-Bred Raptors Returning to Wild Populations

Many captive-bred raptors are used in falconry. The Federal Environmental Assessment on falconry take estimates that captive-bred birds account for roughly half of the birds used in falconry<sup>1</sup>. Many of the most popular falconry species, such as the Red-Tail Hawk, are so numerous and available in the United States that they are simply not bred in captivity in the United States. In countries where these birds are not native in a wild population, such as the United Kingdom, these birds are bred for use in falconry. Conversely, birds that are available but are not convenient, or tend to be found with less desirable characteristics in the wild, tend to be bred in captivity. As one raptor veterinarian observed, he has yet to see a Gyr Falcon trapped in Washington that is not full of shotgun pellet from being shot. Falconers may want a larger or smaller sized bird than is randomly available in Washington through trapping, and may want to trap without travelling to another state and paying for a license to take a bird of unknown quality. These falconers choose to purchase a captive-bred bird instead. Any captive-bred bird, of course, has parentage from the wild some number of generations back. As such, if these captive-bred individuals get loose, the genes are not novel to the wild gene pool, but rather are a reintroduction of genetics that were temporarily held in captivity. Purchasing a captive-bred bird allows a falconer to know the genetics, the predispositions, the health, the handling, and training of the bird. He gets a known genetic quality that may exist locally, but may be much harder to trap and assess. Captive-bred birds are also chosen when the species the falconer wants to fly is simply not

<i>Chart 5 Age of raptors returned to wild populations after wild-take for falconry.</i>	<b>Total</b>
Year of hatch	24
1 year	114
2 years	35
3 years	10
4 years	6
5 years	2
6 years	4
7 years	4
8 years	1
9 years	1
10 years	1
More than 10 years	2

available in the state or country. The Aplomado Falcon has gained popularity recently and captive breeding projects have made this bird available to many. The sources of many captive-bred falconry raptors are the same breeding projects that reintroduce individuals into the wild for population recovery efforts. Exotic raptors such as the Shaheen, Barbary, and others are used, although less frequently in North America. Finally, breeders may create a hybrid species similar to the way birds hybridize in the wild. "The word 'hybrid' may conjure bad connotations<sup>6</sup> while the word 'purebred' gives good feelings. Purebreds, however, are nothing but channeled mixtures of genotypes<sup>12</sup>." A hybrid can be seen to be more fit, or more fit for a given environment and type of hunting. Some species are notoriously sensitive to diseases. Hybridizing can create an individual that is less likely to be sensitive to certain diseases.

Over 10 years a total of 30 birds that were hatched in captivity were lost to the wild by Washington falconers. On some of the reporting forms, falconers noted they suspected the bird to be deceased. When hunting a bird can become disoriented, swept away by wind, or distracted by predator pressures. The falconer may be unable to find the bird, or reclaim the body, and the only certainty is that the bird is lost. It is frequent for a falconer to track a transmitter signal for days, only to know that the signal is originating from a cliff and has not moved. The suspicion is that the bird has been killed and eaten by another

raptor leaving the transmitter on the cliff, but recovery and certainty are sometimes impossible.

Falconers reclaimed some subset of these 30. One file noted this with the story that the falconer received notification that his bird was found in Montana. He made certain it was legal for him to reclaim his bird, and then drove to Montana to pick her up. It is not unusual for falconers to go to extremes to care for their birds and to reclaim them if they become lost. Often the bird is located some time after a loss is reported and the bird is re-trapped or simply called to the fist by her falconer continuing their relationship. The regulations require a bird that has been lost or has escaped be reported within a few days, but without the recovery reports it is uncertain precisely how many were recovered.

Although 30 captive birds making it into wild populations may concern genetic purists, there are several factors to consider. First, these genetics originate from the wild population, as few as one generation removed. Second, some set of these thirty were lost and immediately killed by predators. And, third, some subset of the thirty was reclaimed by their falconers and re-entered into a captive falconry relationship. What this really means is an average of three birds per year originated in a captive breeding project and some subset rejoined the wild. This may actually have a positive impact on the wild populations. Wild Peregrine populations have been re-established through many of the same breeding projects that supply falconers with their birds, and nearly half of captive-bred birds that were lost were Peregrine Falcons. Without knowing which of these birds were immediately killed after they were lost and which of the other twenty-nine were also reclaimed by a falconer, it is reasonable to assume that the remaining twenty-nine birds reintegrated into wild populations.

Species	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Eurasian Kestrel	0	0	0	1	0	0	0	0	0	0	1
Goshawk	0	1	1	0	0	0	0	0	1	1	4
Peregrine	2	2	0	2	1	3	2	0	1	1	14
Gyrfalcon-Peregrine Falcon Hybrid	0	0	0	0	2	0	0	0	1	0	3
Other Gyrfalcon Hybrid	0	1	0	0	0	1	2	0	0	1	5
Other Peregrine Hybrid	0	1	1	0	0	0	1	0	0	0	3
<b>TOTAL</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>30</b>

Chart 6 Captive-bred birds that potentially joined wild populations during the ten-year timespan.

#### Other endpoints

There are other avenues that these raptors, both wild-taken and captive-bred, may follow. Many birds taken from the wild are still being flown. They will not show up in any other transaction, and could end up flying with their falconer for 20 years or more. Without matching permittee numbers and cross referencing take and disposition records, it is difficult to tell how many birds taken are still employed in falconry, and extremely complicated to determine as falconers may move out of Washington state with their birds, or may transfer birds to other falconers. With the entire set of 3-186A forms from all falconers in the United States, and enough time, it would be possible to determine precisely. This would be unnecessary to precisely pinpoint as the numbers of birds and the cumulative events during a ten year time span is sufficient to understand the resource usage and impact.

Falconry raptors may die while they are held for falconry. During the ten-year period, there were a total of 51 birds that were taken from the wild that died<sup>2</sup>. These are the absolute net impact to the wild population since they have been removed permanently from the wild without any possibility of returning. The most common cause of death was predation by another raptor, a common cause of death to wild raptors as well. These also have many stories that can be elucidated from the reports. One bird, a nestling taken from the wild, was determined to have a congenital heart defect and was euthanized by a veterinarian. One was transferred from a raptor rehabilitator to a falconer after a head injury and finally died several years later from complications due to the head injury. One bird developed a brain lesion after 7 years. Several birds injured themselves and were determined by a veterinarian to necessitate euthanasia. Many of the causes of death are the same causes that occur to these birds in the wild, although occurring with a much lower frequency. Much of this data displays falconers going to significant lengths to get birds to veterinarians, diagnose problems, and even perform a necropsy to confirm cause of death.

Falconry raptors may become injured during their career through collision or other accidents. These birds may be transferred to an education permittee who can then use the bird for educational programs, may become part of a breeding project, or they may remain with their falconer to live out their life. Falconry raptors may also be of such talent and skill that a falconer determines he wants to breed the bird. These birds may remain as falconry birds and hunt through much of the year, then enter a



breeding program for part of the year producing offspring in a captive breeding program. These birds may also enter a breeding program permanently and be transferred out of falconry in this way.

### Total impact

Rough estimates of wild raptor mortality rates can be used to compare birds taken for falconry with the experience that these birds would have had in the wild. The best comparison is to use a first-year mortality estimate of 70% and subsequent mortality rates of 30%<sup>2</sup>. Band recovery studies of wild Peregrines in North America suggest a first-year mortality rate of 70%<sup>7</sup>. Each species and geography may vary greatly, but for rough estimates this provides a starting point. There were a total of 288 raptors taken from the wild. Of these, 51 are known to have died and 15 are not accounted for in some disposition report. These may still be used in falconry, they may be in breeding projects, or they may have died. For simplicity, and a worst-case scenario for parity comparison, these birds will be considered to be biologically dead to the wild population. Falconers removed 288 birds from the wild returning 222 of these birds at a later date, plus an additional 30 captive-bred individuals.

	Total Theoretical in Wild Sample	Total Returned to Wild in Falconry Data
Start	288	288
Biologically/	202	66
Returned to the wild	---	222 wild-taken + 30 captive-bred
Survived in the wild	1	252

Chart 7 Net impact of falconry as compared to statistical estimate of wild population.

What this shows is that even assuming birds of unknown status are biologically dead, the falconers are returning 77% of birds removed back to the wild. When counting all birds, falconers replaced greater than 87% of the number of individuals removed. There were 251 more wild birds returned to the wild than would have statistically survived to that point in the wild. In terms of raw numbers, statistically, 251 more birds would have died in the wild and actually survived because of the efforts of falconers. This is the exact inverse of the mortality rate for these birds in the wild. In fact, this alone shows that falconers have a *positive impact* on the wild raptor populations. Much has been debated as to if falconry take has a negative impact. Official studies by the US Fish and Wildlife Service have used worst-case scenarios and data and still concluded that falconry has absolutely no impact on the wild populations<sup>10</sup>. The International Association of Fish and Wildlife Agencies (IAFWA) has been clear that the harvest of wild raptors by falconers has "no significant biological impact on the resource... [and] it does not seem that substantial expenditures of time and money by state and federal regulatory agencies are needed to protect raptor populations from falconry harvest."<sup>11</sup> However what this new data and analysis demonstrates through the take and release/loss/escape data is that wild take practices of falconers actually have a positive impact on the wild populations.

With 288 birds having been removed from the Washington wild populations, and 222 birds that were taken from the wild returned to the wild, the total impact to the wild population during the ten year period was a loss of 66 individual birds. Of these, 51 died and are certain to be a net loss to the wild population, and the remaining 15 may be still employed in falconry, may be in a breeding project, or may be in another category such as on an educational permit. Captive-bred birds that were released, escaped, or lost offset another 30 individuals. The actual net loss/impact over the ten years was 36 birds.

Species	Taken from wild	Wild-taken returned to wild	Captive-bred returned to wild	<b>Total net impact to wild populations over 10 years</b> Negative indicates a loss to the wild population; positive indicates a gain
Cooper's Hawk	15	12	0	<b>-3</b>
Goshawk	40	22	4	<b>-14</b>
Great Horned Owl	1	0	0	<b>-1</b>
Gyrfalcon	8	8	0	<b>0</b>
Kestrel	34	32	1	<b>-1</b>
Merlin	33	16	0	<b>-17</b>
Peregrine Falcon	14	4	14	<b>+4</b>
Prairie Falcon	22	18	0	<b>-4</b>
Red-Tailed Hawk	118	105	0	<b>-13</b>
Sharp-Shinned Hawk	3	3	0	<b>0</b>
Harris' Hawk*	0	2	0	<b>+2</b>
Gyrfalcon Hybrid	0	0	5	<b>+5</b>
Gyrfalcon-Peregrine Hybrid	0	0	3	<b>+3</b>
Peregrine Hybrid	0	0	3	<b>+3</b>
<b>TOTAL</b>	<b>288</b>	<b>222</b>	<b>30</b>	<b>-36</b>

\*The Harris' Hawk is not native to Washington, so they are not taken in Washington. This bird was released in Arizona. Since it is not known how many birds were released in Washington specifically, data has been standardized on birds released by Washington falconers.

*Chart 8 Total net impact to wild population per species over ten-year timespan*

What can be demonstrated is that falconers return greater than 77% of birds they take from the wild back to the wild, often in the same location where the bird was trapped. However what this does not include is the estimate of how many of the birds that falconers took from the wild statistically would have died in the wild during that time. Of the 288 birds that were taken from the wild, 202 statistically would have died in the wild during the first year alone. It was estimated that 251 more birds would have died had falconers not taken them from the wild. This puts the impact of falconry at a *net positive* 251 raptors over the ten years.

Previous studies conducted in the mid-1980s and mid-1990s showed a lower rate of return to the wild. One study of annual reports from 2,776 falconers showing their harvest of 737 raptors representing 15 species during 1986<sup>5</sup>. Of these, 367 were returned to the wild either through release or accidental loss. This represents a rate of take over that year of 0.265 birds per falconer under the assumption that these birds were biologically dead at the moment of take. However falconers returned 49.8% of the birds taken from the wild back to the wild. This represents an actual impact per falconer of 0.133 birds per falconer per year. Another study also collected USFWS annual report data, however this covered 23 states during the mid-1990s<sup>11</sup>. This showed 350 birds harvested from the wild. Of these, he reports that 66 were released back to the wild and 118 were accidentally lost back to the wild with a total return of 184 birds or 52.6% of the birds taken. The distinct difference between this study's most recent data set and these two data sets from the mid-1980s and mid-1990s could be explained with several factors. The data was gathered over a relatively short time period of one or two years each whereas this study collects a substantial and stable population over a ten year time period which is less subject to fluctuations of any one year therefore more likely to show patterns of management and practice. Raptor health and veterinary practices have improved significantly with more resources for veterinarians and the falconer to treat illnesses and injuries resulting in fewer deaths or death at an older age. Raptor management and training techniques and tools have similarly improved with robust communities exchanging information, entire niche suppliers dedicated to the needs of falconers and their birds, and more books and websites available each year to help even the novice manage their bird better resulting in better health and fewer lost birds. The culture of falconry has also shifted to one that "borrows" the birds from the wild, actively partners with the bird to train, hunt, and learn, and then actively supports the bird in returning successfully to the wild. Many falconers take great pride in their ability to return a bird to the wild and spotting it months or years later.

#### **Additional impact of falconers**

The Washington Department of Fish and Wildlife has routinely called upon falconers to remove raptors that have become trapped in structures, such as a warehouse, where the bird would otherwise die. Falconers have also taken birds that were injured and would have died rehabilitating them and returning them to the wild separately from their falconry activities. These should count towards a net positive impact of falconry as otherwise the individual birds would have exited the wild population. If quantified, these raptors may easily offset the minimal levels of take for falconry. There were likely to have been more than 36 individual birds returned to the wild by falconers outside of falconry take and release activities.

#### **Conclusions**

The practices of North American falconry demonstrate a profile of responsible resource usage as driven by the individuals rather than from regulations and mandates. While each of the falconers could have taken up to two raptors from the wild every year, this is obviously not the behavior seen through the data. At the time of the data collection, there were 215 licensed falconers in the state of Washington. Under applicable regulations, 215 falconers would be allowed a maximum total take of 430 raptors per year, or 4,300 over this ten-year period. Nowhere near this number of individual raptors were taken. Arguments that falconers would try to take more raptors if they were allowed, or would treat raptors as disposable, are simply not substantiated by the data. This holds true even when examined over a substantial period of time and a substantial number of falconers. If falconers were treating raptors as disposable and taking the maximum that they could take, or if there were illegal activity with wild raptors being taken by falconers to be sold, higher take numbers per year would be expected. The Federal Environmental Assessment<sup>15</sup> published by the US Fish and Wildlife Service recommended falconry harvest rates between 1% and 5% of all juveniles of all species<sup>10</sup>. Total actual falconry take actually ranges between 0.0046% and 0.6079%, the highest being for a raptor that had a recommended take rate of 5% of juveniles<sup>10</sup>. Actual take is so far below any impactful level that it is ignorable. Some falconers practice a sequential take of raptors, taking one bird from the wild, training her, hunting with her, and releasing her followed by the take of another individual. This amounts to

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more of a borrowing of wildlife rather than taking. Additionally, this training returns a stronger and more experienced individual back into the wild and to the breeding population. Falconers practicing this type of falconry can easily encounter the two take per year limit. Increasing the number of take per year for certain classes of falconer can be a benefit for wild raptor populations having a larger positive effect on the wild populations and increase the pool of knowledge about the species and its management.

What cannot be emphasized enough is that the total falconry impact of over 200 falconers over a 10 year period of time is less than a net of 36 birds removed completely from the wild. No matter which way this number is evaluated, 215 falconers had an impact of 3.6 wild birds per year, or each falconer having a total impact of 0.017 wild birds per year. It is a miniscule number. Multiplied by the number of licensed falconers in the United States (4,250 according to USFWS reports<sup>10</sup>), this would equal a nation-wide net impact of only 72.25 raptors per year. Falconry take of wild birds, on the scale of the entire United States or on the scale of Washington state, has absolutely no negative impact on the wild populations. If the statistical fate of these birds is considered had they not been taken for falconry, the traditional falconry practices of wild take and release actually replaced 166 birds into the wild that would otherwise have died during this time. When this aspect is considered, the falconers of Washington have a positive impact on the wild raptor populations at roughly a rate of 16.6 birds per year, or 0.083 birds per falconer per year. On the scale of the entire falconry population of the United States, falconers might have a net positive impact of 332 birds per year. The benefit of falconers is apparent, demonstrating a cost-effective way to support wild raptor populations by raising the take limits, or removing the take limits entirely, including all species of raptors, and encouraging the wild take practices that are traditional for North American falconry.

Almost all species of raptors used in North American falconry were experimental at one time. The Red-Tail Hawk comprises nearly half of all wild-taken birds. It was originally determined to be worthless, lazy, dull, and not compatible for falconry. Likewise the Harris' Hawk, while not native to Washington, is another excellent example of a raptor that had to be experimented with over many years in order to understand how it hunts and operates. It now is a highly utilized species in falconry worldwide. As recently as ten years ago the Aplomado Falcon was considered a useless bug eater, with nothing known of its native habits or potential for falconry. It is growing in popularity as a falconry bird and is now a commonly used raptor in bird abatement activities. Golden Eagles have had a similar reputation, yet are highly successful in the hands of falconers. The fact that certain species have very low levels of take is not a rationale to block access to these species, but an invitation for falconers to work more with them. The point of falconry is not to take the most game possible or the most raptors possible. If that were the intent, falconers would be using a gun instead of investing significant time in a bird. The argument that certain species are "less suitable" is only stated through lack of knowledge and interest. There have been those who are both interested and knowledgeable and have had success with birds ranging from Osprey to Screech Owls. The fact that these species have interest from a very small number of falconers only means it is extremely safe to allow wild take of these species. Extremely low demand is not the same as no demand, and a want for more data is not the same as data that shows concerning population levels. This study has provided the data demonstrating the positive impact of the style of North American falconry on wild populations, and a profile of responsible resource usage by falconers.

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**References**

- <sup>1</sup> Allen, George. Draft Environmental Assessment; Take of raptors from the wild under the falconry and the raptor propagation regulations. US Fish and Wildlife Services. June 2006.
  - <sup>2</sup> Ash, Lydia. Causes of mortality in falconry raptors. *The Journal of Washington Falconry*. 2012.
  - <sup>3</sup> Associated Press. "Report: Killing predators considered to help owls." *The Seattle PI*, 6 February, 2011.
  - <sup>4</sup> Bernton, Hal. "Scientists Study Wind-Farm Risks to Birds." *The Seattle Times*. 6 June 2010.
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- <sup>5</sup> Brohn, A. 1986. Report of the subcommittee on falconry rules. International Association of Fish and Wildlife Agencies, Washington, DC.
- <sup>6</sup> Cade, T.J. 1983. Hybridization and gene exchange among birds in relation to conservation. Pp288-309 in C.M. Schonewald-Cox, S.M. Chambers, B. MacBryde and W.L. Thomas [Eds], Genetics and conservation. The Benjamin/Cummings Publ. Co., Inc., Menlo Park, CA USA.
- <sup>7</sup> Enderson, J. 1969. Peregrine and prairie falcon life-tables based on band-recovery data. Pp 505-509 in J.J. Hickey, ed. Peregrine falcon populations. Their biology and decline. University of Wisconsin Press, Madison. 596pp.
- <sup>8</sup> "Golden Eagle Killed by Wind Turbines." *The Seattle Times*. 19 May 2009.
- <sup>9</sup> Kenward, R.E. 1974. Mortality and fate of trained birds of prey. *Journal of Wildlife Management*. 38(4):751-6.
- <sup>10</sup> Millsap, Brian and George Allen. *Wildlife Society Bulletin*. "Effects of falconry harvest on wild raptor populations in the United States: Theoretical considerations and management recommendations."
- <sup>11</sup> Mosher, James A. Falconry harvest in the United States. *Journal of Raptor Research*. 31 (3):294-295.
- <sup>12</sup> Parrish, Jimmie R. and Clayton M. White. Comments on hybridization in raptors. *Journal of Raptor Research*. 31 (3):296-298.
- <sup>13</sup> Personal communication. E. Cummins. Washington Department of Fish and Wildlife. 2010.
- <sup>14</sup> United States Department of Agriculture APHIS Program Data Reports. [http://www.aphis.usda.gov/wildlife\\_damage/prog\\_data/prog\\_data\\_report\\_fy\\_2009\\_disclaimer.shtml](http://www.aphis.usda.gov/wildlife_damage/prog_data/prog_data_report_fy_2009_disclaimer.shtml)
- <sup>15</sup> United States Fish and Wildlife Service [USFWS]. 2007. Final Environmental Assessment: Take of raptors from the wild under the falconry and the raptor propagation regulations. U.S. Department of Interior, US Fish and Wildlife Service, Washington, D.C., USA.
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