

ESTIMATIONS RELATIVE TO BIRDS OF PREY IN CAPTIVITY IN THE UNITED STATES OF AMERICA

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Introduction. Counts relating to birds of prey in captivity have been accomplished in some European countries; however, to the knowledge of this author no such information is available in the United States of America. The following paper consists of data related to this subject collected during 1969-1970 from surveys carried out in many different directions within this country.

Methods. In an attempt to obtain as clear a picture as possible, counts were divided into specific areas: Research, Zoological, Falconry, and Pet Holders. It became obvious as the project advanced that in some cases there was overlap from one area to another; an example of this being a falconer working with a bird both for falconry and research purposes. In some instances such as this, the author has used his own judgment in placing birds in specific categories; in other instances received information has been used for this purpose.

It has also become clear during this project that a count of "pets" is very difficult to obtain. Lack of interest, non-cooperation, or no available information from animal sales firms makes the task very difficult, as unfortunately, to obtain a clear dispersal picture it is from such sources that information must be gleaned. However, data related to the importation of birds of prey as recorded by the Bureau of Sport Fisheries and Wildlife is included, and it is felt some observations can be made from these figures.

Within the specific areas used for count purposes, the following methods were utilized:

Research—Surveys were sent to a total of one hundred and five universities, government agencies, and private organizations. Of this total, seventy-one replies were received. Thirty-

seven were in the affirmative, but the number of persons holding raptors exceeds this number, it representing mainly agencies and organizations in which individuals are either employed or are members.

Zoological Societies—Surveys were sent to one hundred and sixty-two public and private zoological societies. One hundred and fifteen replies were received of which ninety-one were in the affirmative.

Falconry—Birds held for falconry purposes are quite difficult to gauge. Figures used in this count were obtained from state agencies and private organizations expressing interest in birds of prey. The difficulty of a count lies not so much in total numbers as species held. Therefore, over-all numbers will be considered in opposition to individual species. In other returns specific numbers were not given, but answers were phrased, “small, medium, or large.” Interpretation of such answers rests entirely with the author.

Counts—Birds of Prey in Captivity—Research and Zoological. The following section tabulates results of counts from surveys. Names for the Order Falconiformes are taken from *Eagles, Hawks and Falcons of the World* by Leslie Brown and Dean Amadon, and those for the Order Strigiformes from *Birds of Prey of the World* by Mary Louise Grossman and John Hamlet.

ORDER FALCONIFORMES

Research Zoos

Family Cathartidae

Cathartes aura	Turkey Vulture	7	43
Cathartes burrovianus	Yellow-headed Vulture		5
Coragyps atratus	Black Vulture	3	35
Sarcorhamphus papa	King Vulture		53
Gymnogyps californianus	California Condor		1
Vultur gryphus	Andean Condor	9	41

Family Pandionidae

Pandion haliaetus	Osprey		3
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Family Accipitridae

<i>Elanus leucurus</i>	White-tailed Kite		1
<i>Elanus caeruleus</i>	Black-shouldered Kite		1
<i>Rostrhamus sociabilis</i>	Snail/Everglade Kite	11	2
<i>Ictinia mississippiensis</i>	Mississippi Kite		3
<i>Milvus migrans</i>	Black/Pariah Kite		5
<i>Milvus milvus</i>	Red Kite		1
<i>Haliastur sphenurus</i>	Whistling Eagle		3
<i>Haliastur indus</i>	White-headed Sea Eagle		17
<i>Haliaeetus leucogaster</i>	White-bellied Sea Eagle		8
<i>Haliaeetus vocifer</i>	African Fish Eagle		9
<i>Haliaeetus leucoryphus</i>	Pallas' Sea Eagle		5
<i>Haliaeetus leucocephalus</i>	Bald Eagle	30	102
<i>Haliaeetus albicilla</i>	White-tailed Sea Eagle		3
<i>Haliaeetus pelagicus</i>	Steller's Sea Eagle		4
<i>Ichthyophaga</i>	Grey-headed		3
<i>ichthyaetus</i>	Fishing Eagle		
<i>Gypohierax angolensis</i>	Vulturine Fish Eagle		6
<i>Neophron percnopterus</i>	Egyptian Vulture		32
<i>Gypaetus barbatus</i>	Lammergeier		2
<i>Necrosyrtes monachus</i>	Hooded Vulture		2
<i>Gyps bengalensis</i>	Indian White-backed Vulture		2
<i>Gyps africanus</i>	African White-backed Vulture		2
<i>Gyps himalayensis</i>	Himalayan Griffon		1
<i>Gyps fulvus</i>	Griffon Vulture		14
<i>Sarcogyps calvus</i>	Indian Black Vulture		8
<i>Aegypius monachus</i>	Cinereous Vulture		13
<i>Trionoceph occipitalis</i>	White-headed Vulture		2
<i>Terathopius ecaudatus</i>	Bateleur	4	3
<i>Spilornis cheela</i>	Crested Serpent Eagle		12
<i>Geranospiza caerulescens</i>	Crane Hawk		6
<i>Circus cyaneus</i>	Marsh Hawk		7
<i>Melierax canorus</i>	Pale Chanting Goshawk		2
<i>Accipiter gentilis</i>	Northern Goshawk	4	3
<i>Accipiter striatus</i>	Sharp-shinned Hawk		2
<i>Accipiter fasciatus</i>	Australian Goshawk		2
<i>Accipiter badius</i>	Shikra	12	2
<i>Accipiter cooperii</i>	Cooper's Hawk		7

<i>Leucopternis semiplumbea</i>	Semiplumbeous Hawk		2
<i>Leucopternis albicollis</i>	White Hawk		3
<i>Buteogallus anthracinus</i>	Common Black Hawk		1
<i>Buteogallus urubitinga</i>	Great Black Hawk		5
<i>Harpyhaliaetus solitarius</i>	Black Solitary Eagle		1
<i>Heterospizias meridionalis</i>	Savannah Hawk		19
<i>Geranoaetus melanoleucus</i>	Grey Eagle-buzzard		4
<i>Parabuteo unicinctus</i>	Harris's Hawk	7	21
<i>Buteo nitidus</i>	Grey Hawk		4
<i>Buteo magnirostris</i>	Roadside Hawk		3
<i>Buteo lineatus</i>	Red-shouldered Hawk	11	9
<i>Buteo platypterus</i>	Broad-winged Hawk	6	7
<i>Buteo brachyurus</i>	Short-tailed Hawk		3
<i>Buteo swainsonii</i>	Swainson's Hawk	9	19
<i>Buteo solitarius</i>	Hawaiian Hawk		4
<i>Buteo ventralis</i>	Red-tailed Buzzard		11
<i>Buteo jamaicensis</i>	Red-tailed Hawk	41	155
<i>Buteo lagopus</i>	Rough-legged Buzzard		9
<i>Buteo rufinus</i>	Long-legged Buzzard		1
<i>Buteo regalis</i>	Ferruginous Hawk	2	24
<i>Buteo auguralis</i>	African Red-tailed Buzzard		3
<i>Morphnus guianensis</i>	Guiana Crested Eagle		7
<i>Harpia harpyja</i>	Harpy Eagle		17
<i>Harpyopsis novaeguineae</i>	New Guinea Harpy Eagle		1
<i>Pithecophaga jefferyi</i>	Philippine Monkey-eating Eagle		8
<i>Aquila rapax</i>	Tawny/Steppe Eagle	1	5
<i>Aquila heliaca</i>	Imperial Eagle	2	5
<i>Aquila wahlbergi</i>	Wahlberg's Eagle		2
<i>Aquila chrysaetos</i>	Golden Eagle	24	173
<i>Aquila audax</i>	Wedge-tailed Eagle		14
<i>Aquila verreauxi</i>	Verreaux's Eagle	1	
<i>Hieraaetus fasciatus</i>	African Hawk-eagle	5	2
<i>Hieraaetus pennatus</i>	Booted Eagle		2
<i>Hieraaetus morphnoides</i>	Little Eagle		1
<i>Spizastur melanoleucus</i>	Black and White Hawk-eagle		1
<i>Lophoaetus occipitalis</i>	Long-crested Eagle		1

Spizaetus cirrhatus	Changeable Hawk-eagle		4
Spizaetus tyrannus	Black Hawk-eagle	1	2
Spizaetus ornatus	Ornate Hawk-eagle		5
Stephanoaetus coronatus	Crowned Eagle		3
Polemaetus bellicosus	Martial Eagle		4
Family Sagittariidae			
Sagittarius serpentarius	Secretary Bird		32
Family Falconidae			
Daptrius ater	Yellow-throated Caracara		4
Phalcoboenus megalopterus	Mountain Caracara		3
Polyborus plancus	Common Caracara		55
Milvago chimachima	Yellow-headed Caracara		3
Micrastur semitorquatus	Collared Forest Falcon	2	3
Microhierax caerulescens	Red-legged Falconet	9	14
Falco sparverius	American Kestrel	127	59
Falco chicquera	Red-headed Falcon	2	5
Falco columbarius	Merlin	22	2
Falco berigora	Brown Hawk		1
Falco ruficularis	Bat Falcon		2
Falco biarmicus	Lanner Falcon	6	
Falco mexicanus	Prairie Falcon	18	4
Falco cherrug	Saker Falcon	4	
Falco rusticolus	Gyr Falcon	16	
Falco deiroleucus	Orange-breasted Falcon		2
Falco peregrinus	Peregrine Falcon	114	2
	TOTALS	510	1,234

Falconry. As was stated in the introduction, state agencies have been the source of much information pertaining to falconry. A figure of raptors in possession for falconry purposes is difficult to arrive at; however on information supplied, it is estimated that it is approximately 1200-1300 broken down as follows:

State Returns of Raptors Held for Falconry 1969/70

Alabama	1	Montana	5
Alaska	8	Nebraska	2
Arizona	23	New Mexico	4
California	450	Nevada	10
Colorado	70	North Dakota	5
Florida	25	Oklahoma	6
Georgia	2	Oregon	14
Idaho	18	Pennsylvania	59
Illinois	50	Rhode Island	1
Indiana	35	South Dakota	10
Iowa	11	South Carolina	8
Kansas	20	Texas	15
Kentucky	20	Utah	12
Louisiana	4	Virginia	30
Maryland	40	Washington	90
Michigan	25	Wisconsin	40
Minnesota	35	Wyoming	50
Mississippi	2		
Missouri	25	TOTAL	1,225

Percentage of Species Held in Relation to Total Numbers 1969/70. These are based on over-all average of states providing actual species counts.

Genus Buteo/ Parabuteo	Red-tailed Hawk, Ferruginous Hawk, Swainson's Hawk, Harris's Hawk, Rough-legged Hawk	58%
Genus Accipiter	Goshawk, Cooper's Hawk, Sharp-shinned Hawk, etc.	13%
Genus Falco	Kestrels, Merlins, Prairie Falcon, Peregrine Falcon, Gyrfalcon, Saker Falcon, Lanner Falcon, Lugger Falcon	28%
Others		1%
	TOTAL	100%

Order STRIGIFORMES

Research Zoos

Family Tytonidae

<i>Tyto alba</i>	Barn Owl	14	72
<i>Phodilus badius</i>	Bay Owl		4

Family Strigidae

<i>Otus asio</i>	Common Screech Owl	26	77
<i>Otus choliba</i>	Tropical Screech Owl		2
<i>Otus watsonii</i>	Tawny-bellied Screech Owl		2
<i>Lophotrix cristata</i>	Crested Owl		2
<i>Bubo virginianus</i>	Great Horned Owl	14	180
<i>Bubo bubo</i>	Eagle-owl		12
<i>Bubo nipalensis</i>	Forest Eagle-owl		2
<i>Ketupa ketupa</i>	Malay Fish Owl		8
<i>Ketupa zeylonensis</i>	Brown Fish Owl		3
<i>Pulsatrix perspicillata</i>	Spectacled Owl		7
<i>Pulsatrix koeniswaldiana</i>	White-chinned Owl		3
<i>Nyctea scandiaca</i>	Snowy Owl	6	45
<i>Glaucidium brasilianum</i>	Ferruginous Pigmy Owl		3
<i>Glaucidium gnoma</i>	Northern Pigmy Owl		6
<i>Glaucidium cuculoides</i>	Cuckoo Owlet		2
<i>Micrathene whitneyi</i>	Elf Owl		14
<i>Ninox novaeseelandiae</i>	Spotted Hawk Owl		2
<i>Athene noctua</i>	Little Owl		5
<i>Speotyto cunicularia</i>	Burrowing Owl	30	47
<i>Ciccaba virgata</i>	Mottled Owl		3
<i>Ciccaba huhula</i>	Black-banded Owl		2
<i>Strix varia</i>	Barred Owl	4	39
<i>Strix nebulosa</i>	Great Grey Owl		4
<i>Strix aluco</i>	Tawny Owl		6
<i>Strix leptogrammica</i>	Brown Wood Owl		3
<i>Rhinoptynx clamator</i>	Striped Owl		5
<i>Asio otus</i>	Long-eared Owl		4
<i>Asio flammeus</i>	Short-eared Owl		14
<i>Aegolius acadicus</i>	Saw-whet Owl		16

TOTALS		94	594
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Falconry.

<i>Bubo virginianus</i>	Great Horned Owl	7	
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Birds of Prey Held for Research, Zoological and Falconry Purposes

Falconiformes			
	Research	510	17.17%
	Zoological	1,234	41.56%
	Falconry	1,225	41.25%
			2,969
Strigiformes			
	Research	94	13.52%
	Zoological	594	85.47%
	Falconry	7	1.00%
			695
	Final Total		3,664

Birds of Prey Imported into the United States 1968/69

Order FALCONIFORMES

Family Cathartidae		1968	1969
Sarcorhamphus papa	King Vulture	28	25
Vultur gryphus	Andean Condor	8	5
Family Accipitridae			
Henicopernis longicauda	Long-tailed Honey-buzzard	25	
Elanus leucurus	White-tailed Kite		1
Elanus caeruleus	Black-shouldered Kite		8
Ictinia plumbea	Plumbeous Kite		3
Haliaeetus indus	White-headed Sea Eagle	14	10
Haliaeetus vocifer	African Fish Eagle	2	
Ichthyophaga nana	Lesser Fishing Eagle	1	4
Gypohierax angolensis	Vulturine Fish Eagle	2	
Neophron percnopterus	Egyptian Vulture	11	9
Gyps bengalensis	Indian White-backed Vulture		2
Gyps indicus	Indian Griffon		5
Gyps fulvus	Griffon Vulture		4
Aegypius monachus	Cinereous Vulture	4	5
Trigonoceps occipitalis	White-headed Vulture		2
Circaetus gallicus	Serpent Eagle	1	3
Terathopius ecaudatus	Bateleur	3	24

<i>Spilornis cheela</i>	Crested Serpent Eagle	5	10
<i>Geranospiza caerulescens</i>	Crane Hawk		4
<i>Circus cyaneus</i>	Marsh Hawk	2	80
<i>Accipiter gentilis</i>	Northern Goshawk	21	22
<i>Accipiter nisus</i>	European Sparrow-hawk		3
<i>Accipiter tachiro</i>	African Goshawk		10
<i>Accipiter trivirgatus</i>	Crested Goshawk		3
<i>Accipiter badius</i>	Shikra	30	126
<i>Accipiter superciliosus</i>	Tiny Sparrow-hawk	1	1
<i>Accipiter bicolor</i>	Bicoloured Sparrow-hawk	3	4
<i>Butastur teesa</i>	White-eyed Buzzard	6	67
<i>Kaupifalco monogrammicus</i>	Lizard Buzzard	1	
<i>Leucopternis albicollis</i>	White Hawk	2	6
<i>Buteogallus anthracinus</i>	Common Black Hawk	1	6
<i>Heterospizias meridionalis</i>	Savannah Hawk	1	6
<i>Buteo magnirostris</i>	Roadside Hawk	44	175
<i>Buteo poecilochrous</i>	Gurney's Buzzard		7
<i>Buteo jamaicensis</i>	Red-tailed Hawk	6	8
<i>Morphnus guianensis</i>	Guiana Crested Eagle	1	
<i>Harpia harpyja</i>	Harpy Eagle	1	4
<i>Aquila clanga</i>	Greater Spotted Eagle	6	2
<i>Aquila rapax</i>	Tawny/Steppe Eagle	16	28
<i>Aquila heliaca</i>	Imperial Eagle	1	
<i>Aquila chrysaetos</i>	Golden Eagle	2	
<i>Aquila verreauxi</i>	Verreaux's Eagle	1	
<i>Hieraetus fasciatus</i>	African Hawk-eagle	1	3
<i>Spizaetus cirrhatus</i>	Changeable Hawk-eagle	7	8
<i>Spizaetus nipalensis</i>	Mountain Hawk-eagle	3	11
<i>Spizaetus tyrannus</i>	Black Hawk-eagle		2
<i>Spizaetus ornatus</i>	Ornate Hawk-eagle	8	41
<i>Stephanoaetus coronatus</i>	Crowned Eagle		4
<i>Polemaetus bellicosus</i>	Martial Eagle	1	

Family Sagittariidae

<i>Sagittarius serpentarius</i>	Secretary Bird	15	19
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Family Falconidae

<i>Daptrius ater</i>	Yellow-throated Caracara		4
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Polyborus plancus	Common Caracara	17	43
Milvago chimachima	Yellow-headed Caracara	1	
Herpetotheres cachinnans	Laughing Falcon		3
Micrastur semitorquatus	Collared Forest Falcon	3	
Microhierax caerulescens	Red-legged Falconet	188	788
Falco naumanni	Lesser Kestrel		22
Falco sparverius	American Kestrel		12
Falco tinnunculus	Common Kestrel	46	15
Falco chicquera	Red-headed Falcon	21	30
Falco columbarius	Merlin	4	8
Falco subbuteo	European Hobby		3
Falco eleanorae	Eleanora's Falcon	1	2
Falco rufigularis	Bat Falcon	1	
Falco biarmicus	Lanner Falcon	2	36
Falco jugger	Lagger Falcon	30	364
Falco cherrug	Saker Falcon	1	2
Falco rusticolus	Gyr Falcon	7	29
Falco peregrinus	Peregrine Falcon	138	287
Unknown	Unspecified Raptors	44	109
	Total (Falconiformes)	789	2,527

Order STRIGIFORMES

Family Tytonidae

Tyto alba	Barn Owl	2	59
Phodilius badius	Bay Owl		1

Family Strigidae

Otus asio	Common Screech Owl		3
Otus cooperi	Pacific Screech Owl		5
Otus barbarus	Bearded Screech Owl		4
Otus guatemalae	Vermiculated Screech Owl	7	3
Otus albogularis	White-throated Screech Owl	2	
Otus scops	Common Scops Owl		73
Otus bakkamoena	Collared Scops Owl		5

Lophostrix cristata	Crested Owl		9
Bubo virginianus	Great Horned Owl	7	6
Bubo bubo	Eagle-owl	32	4
Bubo africanus	Spotted Eagle-owl		1
Bubo nipalensis	Forest Eagle-owl		1
Bubo sumatrana	Malay Eagle-owl		1
Ketupa ketupa	Malay Fish Owl	6	2
Ketupa zeylonensis	Brown Fish Owl		2
Scotopelia peli	Pel's Fishing Owl		10
Pulsatrix perspicillata	Spectacled Owl	148	97
Nyctea scandiaca	Snowy Owl	8	1
Glaucidium brasilianum	Ferruginous Pygmy Owl	2	2
Glaucidium passerinum	Eurasian Pigmy Owl		29
Glaucidium perlatum	Pearl-spotted Owlet	7	6
Glaucidium capense	Barred Owlet	7	
Glaucidium brodiei	Collared Owlet		26
Glaucidium cuculoides	Cuckoo Owlet		1
Athene noctua	Little Owl		200
Athene brama	Spotted Owlet		48
Speotyto cunicularia	Burrowing Owl	8	16
Ciccaba nigrolineata	Black-and-white Owl		1
Strix aluco	Tawny Owl	3	
Asio otus	Long-eared Owl	3	
Unspecified Owls		30	60
	Totals (Strigiformes)	272	676

Estimated Grand Totals of Birds of Prey Imported into the United States

	Falconiformes	Strigiformes	Total
1968	789	272	1,061
1969	2,527	676	3,203

Discussion. A return of 71% of surveys sent to one hundred and sixty-two Zoological Societies shows a total of 1,828 birds of prey on exhibition. There is evidence pointing to the larger species being popular for this purpose, particularly Eagles and Vultures. Buteos also form a firm nucleus. In respect to the replies of the surveys only one reference was

made to successful rearing of raptors in captivity—in this case, one White-tailed Sea Eagle.

One of the purposes of a zoological collection must be research endeavors; captive propagation must surely fall in this category. This is particularly true when speaking of a species such as the Philippine Monkey-eating Eagle (*Pithecophaga jefferyi*). With published figures of a total wild population of under forty-eight left (*Last Survivors*, Noel Simon) and with an equivalent zoological population in the United States of America alone of 17% of this total, zoological societies should be expected to participate much more strongly in research programs in many different directions, both on a national and indeed an international basis.

In the *Bald Eagle Project* (National Audubon Society, 1963) a total wild population of Bald Eagles (excluding Alaska) of 3,547 birds was projected. Returns from this survey show a total of 132 Bald Eagles on exhibition or 3% of the 1963 total; and of course, in many respects the picture has only become worse since the 1963 count was made.

Statistically if one expanded the total of 1,828 returns in this survey from 71% to 100%, a total of 2,574 would be arrived at. Whether in practical circumstances this is acceptable can be questioned, as it is felt most of the major societies did participate in the survey.

In the research areas the emphasis for investigation at this time appears to be concerned with the American Kestrel, Peregrine Falcon, and Bald Eagle. Breeding projects and pesticides investigation are being heavily researched. It is worthy to note here that much of the research being carried out concerning birds of prey is being instigated and perpetuated by private organizations and individuals, falconers playing a major role in a large portion of cases. Statistically if the total of 604 birds returned from 67.6% of the survey was expanded to 100%, a total of 893 birds would be arrived at. However, as mentioned before, such an expansion is questionable.

In the falconry total some interesting points came to light. It is estimated that 58% of all raptors worked with belong to the *Buteo* or *Parabuteo* genera and this percentage may well be too low. These birds are extremely common and if the majority of falconers are indeed working with this percentage then falconry cannot be considered being harmful to the continuance of the birds of prey. Twenty-eight percent, it is esti-

mated, work with falcons. Again, however, between 10% to 12% of this 28% is made up by the American Kestrel, a most common raptorial bird throughout the United States of America, the remaining percentage being spread over a fuller spectrum of falcons.

Importation figures demonstrate several points. First the total number of raptorial birds entering the United States in 1969 was approximately triple the total number of 1968. However, this vast increase can be practically explained on an individual species basis as demonstrated below (P—Pet; Z—Zoological; R—Research; F—Falconry).

Some Individual Species Importation Totals

	1968	1969	Increase
Bateleur (Z)	3	24	21
Marsh Hawk (Z & P)	2	80	78
White-eyed Buzzard (P)	6	67	61
Steppe Eagle (Z)	16	28	12
Roadside Hawk (P)	44	175	131
Shikra (R&F)	30	126	96
Ornate Hawk-eagle (Z)	8	41	33
Common Caracara (Z)	17	43	26
Red-legged Falconet (P)	188	788	600
Lagger Falcon (F)	30	364	334
Peregrine Falcon (R&F)	138	287	149
Barn Owl (Z)	2	59	57
Common Scops Owl (Z&P)		73	73
Little Owl (Z&P)		200	200
TOTALS	484	2,355	1,871

The most severe increases noted are in raptors that are commonly utilized for the so-called pet trade. The species that this author would include under that heading carry a symbol "P" and as can be seen, the importation of the Red-legged Falconet has apparently increased 319% in one year. Considerable increases are also noted for the Roadside Hawk, the Little Owl and to a lesser degree, the White-eyed Buzzard and the Marsh Hawk.

The importation and sale of exotic or indeed any raptorial bird for pet trade purposes is to be condemned, and this author feels that steps should be taken immediately to prevent this commercialism expanding further.

It will be noted that the use of the Lagger Falcon for falconry purposes appears to have increased sharply; however, it must be stated that importation lists are often confused between the Lagger, Lanner and Saker Falcon and it is highly probable that figures shown for the Lagger Falcon should be more evenly spread over the three species mentioned. Again for zoological purposes increases are noted in the larger raptors such as the Steppe Eagle, the Hawk-eagles and the Caracara. Importation figures are compiled by the Bureau of Sport Fisheries and Wildlife annually from Form 3-177 which must be filed with the U. S. Customs when foreign wildlife is imported. The amount of variance as recorded on these forms is in some cases incredible and it is to the credit of the Bureau of Sport Fisheries and Wildlife that any legitimate totals can be compiled. In this paper some differences will be noted in imported species compared to those recorded as being held for zoological, research or falconry purposes. There are several explanations for this as follows.

1. Zoological Society did not reply or did not partake in the survey.
2. Bird is held by dealer.
3. Bird was sold for pet purposes or to small travelling zoo or circus.
4. Research facilities did not reply or partake in the survey.
5. Bird held for falconry but not recorded.
6. Bird identified incorrectly.

On the other hand, however, it must be realized that in the majority of instances importation figures shown here are incorporated in the surveys earlier in this paper.

Conclusions. A series of surveys has been carried out to gather estimations of birds of prey in captivity in the United States of America. These surveys have included zoological, research, falconry, and importation sources. Replies indicate that there could well be a total of between 4,600/5,800 such birds being utilized or held for various reasons. The former figure of 4,600 is taken from this survey including approximately 1,000 birds imported for what is felt to be the pet trade, while the latter figure is an expanded 100% replies from this survey plus approximately 1,000 birds imported for the pet trade.

Other points of interest are:

A. An equivalent of seventeen percent of the estimated remaining wild population of the Philippine Monkey-eating Eagle are in various zoological collections in the United States of America and it is highly likely that on a worldwide basis an equivalent of at least sixty percent or more would be found in captivity.

B. Zoological societies can and should provide more experts to meet the challenges of, and to play more aggressive roles in, research endeavors.

C. The majority of zoological specimens are single birds; cooperation between various societies for research projects—particularly rare species—should be given immediate and serious consideration.

D. At least fifty Andean Condors are in captivity. The situation of this species in the wild should be carefully gauged and birds in captivity used not only for exhibition purposes, but also research efforts.

E. Over one hundred Peregrine Falcons are being held for research purposes; this total includes many different subspecies both native and exotic, most of which are in captive breeding projects or pesticide studies.

F. A considerable number of raptors are imported for pet purposes. This practice is to be condemned and immediate steps should be taken to prevent further growth of this commercial marketing.

G. Approximately 70% of all birds of prey worked with for falconry purposes in the United States would appear to be very common birds—*Buteo*, *Parabuteo*, and *Falco sparverius*—thus falconry in general does not play a detrimental role with regard to wild raptor perpetuation.

H. Falconers are deeply engaged in research efforts with birds of prey. Indeed one can say without hesitation that at this time they form the vast majority.

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