

# 2009 AZA Raptor Taxon Advisory Group

## Regional Collection Plan

### Second Edition



Submitted:

**July 14, 2009**

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**Cover Art Work by: [Debbie Talbott, National Zoological Park](#)**



### **Raptor Taxon Advisory Group Mission Statement:**

**The mission of the Raptor Taxon Advisory Group is to coordinate management of captive Falconiformes and Strigiformes in North American collections, as well as to participate in and support relevant conservation efforts both *in situ* and *ex situ*.**

### **Goals of the Raptor TAG**

- Identify and coordinate the use of space for species in the orders Falconiformes and Strigiformes in North America.
- Identify species that are in need of conservation action through natural history and population reviews and assessments.
- Develop and utilize criteria to select species for captive management and identify the level of management to be recommended for each species.
- Define species/population goals, conservation status and program goals, and communicate these to each AZA institution for every species in the TAG.
- Develop and disseminate husbandry information for raptor species.
- Develop public education programs on conservation issues facing species in this TAG, and promote the use of these materials by member institutions.
- Collaborate with professional organizations focused on training and presentation of raptors in educational settings relating to the conservation efforts of AZA institutions.
- Cooperate with the scientific community in identifying and meeting research needs.
- Cooperate with other national and international conservation organizations to identify and participate in common *in situ* and *ex situ* conservation goals.
- Collaborate with facilities in other regions to optimize management of small captive populations.
- Identify the best possible roles for captive populations of native raptors, which may include phasing out certain species/individuals in order to create additional management space for TAG-emphasized species.

## TAXA Covered by this TAG

This Regional Collection Plan for the Raptor Taxon Advisory Group includes all species in the orders Falconiformes and Strigiformes. The Handbook of the Birds of the World (vols. 2 & 5), were used as the sole taxonomic reference. According to this literature there are 518 species of raptors represented by 1,301 taxa (sub-species). (A full accounting is attached as Appendix VIII.)

### Falconiformes

<b>Cathartae</b> .....	<b>7 species</b> .....	<b>13 taxa</b>
<b>Pandionidae</b> .....	<b>1 species</b> .....	<b>4 taxa</b>
<b>Accipteridae</b> .....	<b>237 species</b> .....	<b>535 taxa</b>
<b>Sagittariidae</b> .....	<b>1 species</b> .....	<b>1 taxa</b>
<b>Falconidae</b> .....	<b>61 species</b> .....	<b>149 taxa</b>

### Strigiformes

<b>Tytonidae</b> .....	<b>16 species</b> .....	<b>63 taxa</b>
<b>Strigidae</b> .....	<b>189 species</b> .....	<b>548 taxa</b>



Photo by Scott Tidmus, Disney's Animal Kingdom

## CONSERVATION STATUS OF TAXA

The following were used as sources of information regarding the conservation status of taxa covered by this plan:

- IUCN 2008. 2008 IUCN Red List of Threatened Species. <[www.iucnredlist.org](http://www.iucnredlist.org)>.
- USFWS Endangered Species Act
- CITES
- BirdLife International (2008) *Threatened birds of the world 2008*. <[www.birdlife.org](http://www.birdlife.org)>

The information referenced from these resources is found in the Species Summary section of this RCP and only reflects the species currently held in North American facilities. This TAG also recognizes that during the span of this RCP that there may be some unforeseen event or crisis that may require an alteration or addendum to this plan. In the event that plan recommendations are significantly altered, the TAG will communicate with WCMC and the IR's regarding the recommended changes.

## RAPTOR TAG OPERATIONAL STRUCTURE

The Raptor TAG Steering Committee:

- Scott Tidmus, Disney Animal Kingdom- Chair – <[scott.tidmus@disney.com](mailto:scott.tidmus@disney.com)> (407) 938-2105
- Jenny Barnett, Binder Park Zoo- Vice Chair - <[jbarnett@binderparkzoo.org](mailto:jbarnett@binderparkzoo.org)> (269) 979-1351 ext. 158
- Steve Sarro, National Aviary – Secretary - <[steve.sarro@aviary.org](mailto:steve.sarro@aviary.org)> (412) 323-7235 ext. 211
- Ed Diebold, Riverbanks Zoo - <[ediebold@riverbanks.org](mailto:ediebold@riverbanks.org)> (803) 779-8717 ext.1135
- Susie Kasielke, Los Angeles Zoo - <[susie.kasielke@lacity.org](mailto:susie.kasielke@lacity.org)> (323) 644-4745
- Michael Mace, San Diego Wild Animal Park - <[mmace@sandiegozoo.org](mailto:mmace@sandiegozoo.org)> (760) 738-5077
- David Rimlinger, San Diego Zoo - <[drimlinger@sandiegozoo.org](mailto:drimlinger@sandiegozoo.org)> (619) 557-3978
- Tom Schneider, Detroit Zoo - <[tschneider@detroitzoo.org](mailto:tschneider@detroitzoo.org)> (248) 398-0903 ext. 3128
- Katy Unger, Fort Worth Zoo –<[kunger@fortworthzoo.org](mailto:kunger@fortworthzoo.org)> (817) 759-7170
- Amanda Whitaker, St. Augustine Alligator Farm – <[awhitaker@alligatorfarm.com](mailto:awhitaker@alligatorfarm.com)> (904) 824-3337 ext. 16
- Nancy Clum, Wildlife Conservation Society – <[nclum@wcs.org](mailto:nclum@wcs.org)> (718) 220-5159
- Fred Beall, Zoo New England – <[fbeall@zoonewengland.com](mailto:fbeall@zoonewengland.com)> (774) 222-3049
- Dave Orndorff, Mill Mountain Zoo - <[dorndorff@mmzoo.org](mailto:dorndorff@mmzoo.org)> (540) 343-3241 ext. 31

The following advisors support this TAG:

- Veterinary Advisors:
  - Dr. Claude LaCasse, Lincoln Park Zoo; <[clacasse@lpzoo.org](mailto:clacasse@lpzoo.org)> (312) 742-2315
  - Dr. Patrick Redig, University of Minnesota Raptor Center; <[redig001@umn.edu](mailto:redig001@umn.edu)> (612) 624-4969
  - Dr. Dominic Travis, Lincoln Park Zoo (epidemiology); <[dtravis@lpzoo.org](mailto:dtravis@lpzoo.org)> (312)742-7225
  - Dr. Chris Bonar, Cleveland Metroparks Zoo; <[cjb@clevelandmetroparks.com](mailto:cjb@clevelandmetroparks.com)> (216) 635-3334
- Field Conservation:
  - Dr. Michael Wallace, Zoological Society of San Diego; <[mwallace@sandiegozoo.org](mailto:mwallace@sandiegozoo.org)> (760) 291-5482
  - Dr. Todd Katzner, National Aviary in Pittsburgh; <[todd.katzner@aviary.org](mailto:todd.katzner@aviary.org)> (412) 323-7235 ext. 210
  - Dr. Mike McGrady, Natural Research Ltd.: <[mike.mcgrady@natural-research.org](mailto:mike.mcgrady@natural-research.org)> +44 (0) 844 906 0200
- Behavior Advisor (training, enrichment, etc.):
  - Steve Martin, Natural Encounters, Inc.; <[natencount@aol.com](mailto:natencount@aol.com)> (407) 938-0847
- Education Advisor:
  - Charlie Snyder, Binder Park Zoo: <[csnyder@binderparkzoo.org](mailto:csnyder@binderparkzoo.org)> (269) 979-1351 ext. 132
- Nutrition Advisor: None at this time
- Advisors-at-large:
  - Jemima Parry-Jones MBE, International Director, International Center for Birds of Prey; <[jpj@icbp.org](mailto:jpj@icbp.org)> +44 (0) 1531 820286
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## **RESPONSIBILITIES OF STEERING COMMITTEE MEMBERS**

Steering Committee members serve staggered, 3-year terms and has a total of 13 members.

- Dedicate sufficient time to carry out TAG duties.
- Be prepared to chair TAG subcommittees and Specialist Groups.
- Review and vote on TAG policies.
- Review and vote on Studbook Keeper, PMP, SSP Coordinator applications.
- Internet and e-mail access required.

Voting Procedure: Two-Thirds approval by the Steering Committee is required for a majority.

The Secretary is responsible for conducting elections and taking meeting minutes.

## **RAPTOR TAG GUIDELINES**

The Raptor TAG encourages all participating institutions and facilities to abide by the following:

- The TAG encourages all institutions to cooperate fully with the various Population Management Plans.
- All institutions must participate fully in the SSP partnership and process for relevant taxa.
- Microchip identification is recommended for species covered by the TAG to aid in long-term identification of individuals.
- AZA accession and deacquisition policies should be followed at all times.
- Institutions are encouraged to focus on captive husbandry efforts of recommended species to increase genetic diversity and reduce impact on wild populations.
- The TAG recommends that individuals be restrained from flight by feather clipping instead of pinioning whenever feasible.
- Shows and demonstrations should be evaluated and advised by licensed falconers at the level of general falconer or higher. Presentations should have an emphasis on conservation.
- A large number of spaces in zoos are utilized by non-releasable North American species. It is encouraged that institutions keep these North American species in only appropriate geographically zoned exhibits as not to encroach on spaces available for management of recommended species.
- Where common, North American species are on exhibit, facilities are encouraged to acquire non-flighted, rehabilitated specimens that may have modest space requirements in order to reserve larger, potential breeding spaces for native and non-native species.

## SELECTION CRITERIA

The AZA-recommended criteria (including the Management Assessment Criteria table), interpreted specifically in relation to raptors, were used in selecting species for inclusion or exclusion within this RCP. Only species currently held in AZA facilities were considered, primarily due to space limitations. Additional species may be included in the future if there is a clear need and space becomes available.

Raptors are typically long-lived species that have low reproductive rates. While some species clearly require careful population management, many captive populations with very low numbers have persisted for decades with minimal active management, reproduction or recruitment. Given the long history of the sport of falconry, many species of raptors exist in large numbers within the private sector, where they are often bred more reliably than in public facilities. Raptors are also the most popular species used in educational demonstrations and shows. Native species, primarily rehabilitated wild birds, make up a large proportion of the captive AZA populations. These factors were important considerations in determining whether a species would be recommended for inclusion in the RCP and at what management level.

For each species, it was first determined whether there was a viable population in AZA facilities.

Viable populations include those:

- which are genetically and demographically self-sustaining in this region or
- for which additional founders are available from the wild (either via capture or rehabilitation), other regions and/or the private sector or
- for which additional individuals (not necessarily for breeding) are available from the wild (rehabilitation) and/or the private sector (non-endangered species bred for falconry) and
- for which husbandry expertise with the same or similar species already exists or could reasonably be developed.

For viable populations, it was next determined whether there was a compelling display, education, research or conservation need for the species. These categories were defined as follows:

- Display value was attributed to species that have high visitor impact, have reliable husbandry protocols and are in demand by AZA facilities.
- Educational value was attributed to species that can be interpreted to illustrate important concepts about raptors or birds in general, particularly if conservation messages could be incorporated. Common species may serve as representatives of their wild, endangered counterparts. Taxonomically unique species were considered to have both educational and display value.
- Research value was attributed to species that are inadequately understood in captivity; or in the wild when captive research might increase this information. Proposed research might include development of basic husbandry, propagation, nutrition, behavior and/or medical knowledge.
- Conservation value was attributed to all species in need of conservation action by AZA facilities. This would include the need for a captive genetic reservoir that may be used for reintroduction in the future as well as the potential to affect *in situ* conservation.

For viable populations with a compelling reason for inclusion in the RCP, the availability of space was then evaluated. This was based on the current and projected numbers reported by AZA facilities in the 2008 space survey. Species for which space was not currently or potentially available were not recommended.

If a viable population did not already exist, the availability, space and need were evaluated. If all three criteria were met, it was recommended that the species be phased in. If these criteria were not met, the species was recommended to be phased out; or if not already in AZA facilities, not recommended.

Once it was determined that a species should be maintained in AZA collections, the management category for the population was determined. Species not requiring genetic and demographic management were assigned to the DERP category. Species requiring a basic level of genetic and demographic management were assigned to the PMP category. Species requiring the highest level of genetic and demographic management were assigned to the SSP category. The definition of these categories is included in the next section.

### **Program Updates**

In reviewing populations for this RCP the steering committee recognized the need to elevate two species into the PMP/Studbook level. These species are the Hooded vulture (*Necrosyrtes monachus*) and the Steller's Sea Eagle (*Haliaeetus pelagicus*), both have had an increase in interest and focus and have been monitored by species champions. Here is a brief justification for these moves.

#### **Hooded Vulture:**

In the last RCP, the hooded vulture was recommended as a DERP, and a species champion assigned to monitor the population. During the past 3 years the population of hooded vultures has grown by 10 birds, reflecting a 38% increase in the population. As part of the review process for the current RCP, this species was run through the decision tree and it met the criteria for PMP status. Because of the increase in breeding success, the possibility of acquiring additional animals, and the interest of additional institutions to work with this species, the TAG has recommended elevating the management status of hooded vultures to a PMP level. This will insure proper genetic and demographic management of this small African vulture.

#### **Steller's Sea Eagle:**

IUCN lists the Steller's Sea eagle as Vulnerable and states "This species has a small, declining population as a result of habitat degradation, pollution, poisoning by lead shot, and over-fishing. It therefore qualifies as Vulnerable". The closely related Bald eagle is not recommended for breeding by the Raptor TAG which also recommends reducing the US zoo population. Spaces currently housing Bald eagles could be used for breeding Steller's Sea eagles. EAZA has a studbook (ESB) and the studbook keeper (Lubov Kurilovich from Moscow) supports a PMP in the US and welcomes exchanges between the two programs. There are many more Steller's Sea eagles in European zoos (approx. 100 birds) but the US population (less than 20) has several blood lines that are not represented there. Exchanges between US and European zoos have already taken place.

### **MANAGEMENT CATEGORIES**

Once it was determined that a species would be included in the RCP, a decision was made regarding what type of management program would be appropriate. The Management Assessment Criteria table was used to evaluate each of the programs to ensure compliance with the WCMC guidelines. Each species was assigned to one of the following management categories based on this review:

- 1) **SSP Population:** Studbook required, intense management to maintain captive population, compliance by participating institutions required, breeding and transfer recommendations communicated through a Master Plan, program managed by a Species Coordinator, non-member participants must be approved, conservation of the species a consideration, institutional input through IR's.



- 2) **PMP Population:** Studbook required, moderate management to maintain captive population, institutional compliance encouraged, breeding and transfer recommendations communicated through a Population Management Plan, program managed by a PMP Manager, institutional input through TAG IRs, non-member participation through AZA and institutional Acquisition/Disposition policies.
- 3) **DERP: Display/Education/Research Population:** DERPs are not managed under the auspices of AZA or its programs and are not guaranteed population management advice or support from SPMAG/PMC. No studbook or long-term genetic or demographic management is required for these species, but TAGs may choose to identify species champions who may track DERPs through registries.
- 4) **Phase-Out Population:** Not viewed as a managed program. Currently in AZA institutions but should be phased out through a breeding moratorium; phase-out may be monitored through a registry and a species champion may be assigned to oversee this process; they have no studbooks and are not guaranteed population management advice or support from SPMAG/PMC.
- 5) **Phase-In Population:** Taxon not currently in AZA institutions but for which the TAG plans or hopes to initiate a captive population; they have no studbooks and are not guaranteed population management advice or support from SPMAG/PMC. Once in captivity, the taxon will be reassigned to another category as appropriate.
- 6) **Not Recommended:** Taxon not currently in AZA institutions and that the TAG recommends NOT be brought into AZA collections.

A **species champion** is defined as an individual affiliated with the TAG that is interested in the species and agrees to assist in efforts to promote viability of the captive population. A species champion may also be involved in conservation work regarding the species.

Species meeting the above criteria are listed in the summary table, including assignment to one of the six management categories (see summary table page 10). All other species of Falconiformes and Strigiformes are not recommended for management in North America at this time.

Appendix IV lists all supported raptor programs with coordinators, managers or species champions.

## **DECISION TREE**

A decision tree was used to help categorize species covered by the TAG. If a population existed in North American collections, its viability was assessed. The PMC population analysis in May of 2009 determined which existing captive populations were genetically viable. The capacity and space in North American institutions was determined through data from the 2008 Raptor TAG space survey and ISIS data. The capacity/space information was considered as the decision tree was applied to each species since space availability is relevant to the long-term viability of each population.

## **SPACE ANALYSIS**

In April of 2008 the Raptor TAG sent a space survey to all 228 AZA institutions requesting information on their current and future raptor collections. The goal of this survey was to determine what space was being allocated to raptors, how they were being housed, exhibited and managed as well as what the future

needs of these institutions may be. Of the 228 AZA institutions, 160 are participating members of the Raptor TAG with designated Institutional Representatives (IR's). Non-member participants include aquariums and museum collections with small raptor populations.

Of the 160 participating member institutions, 133 responded to the space survey, a response rate of 83%. We feel confident that this was an accurate snapshot of the current raptor population and these results have been utilized in directing this collection plan. This survey has also given us the opportunity to address future needs, and will be most useful within the next three years as a measuring device for the next update of the RCP.

The results of the space survey are attached as Appendix III.

### TARGET POPULATIONS

Target populations for the summary table were decided on several levels. Program species target populations were set with work with the PMC center and the program leader, using their best case scenario for success.

DERP specie targets were a combination of current survey numbers as well as current ISIS. The numbers from the 2006 RCP were used also to give a feel as to what the population trends seem to be in regard to these species. The exceptions will be species that the space survey shows are in demand and growth is planned to happen within the next three years. If the species has a species champion, their recommendations were followed for those species.

### SUMMARY TABLE

The resources and definitions used to establish the summary table are listed in Appendix II; they have been separated to help manage the flow of this document.

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>● Conservation Function</li> <li>● Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
<b>New World Vultures</b>									
Turkey Vulture <i>Cathartes aura</i> + <i>C. a. aura</i> + <i>C. a. ruficollis</i> + <i>C. a. septentrionalis</i>	LC		III	126	100	167	115	DERP	● Breeding not recommended; population size needs to be reduced; replace with a flagship species
Black Vulture <i>Coragyps atratus</i>	LC		III	52	38	57	40	DERP	● Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended; reduce population

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
California Condor <i>Gymnogyps californianus</i>	CE	E	I	138	44	80	150	SSP	<ul style="list-style-type: none"> <li>❶ Existing SSP producing birds for release to the wild</li> <li>❷ SSP Coordinator, Mike Wallace, SDWAP</li> <li>International Studbook Keeper: Michael Mace, SDWAP</li> </ul>
King Vulture <i>Sarcorhamphus papa</i>	LC		III	96	84	91	120	PMP	<ul style="list-style-type: none"> <li>❶ Popular exhibit and education species</li> <li>❷ PMP Species Manager: Brian Tierney, Bronx Zoo</li> </ul>
Andean Condor <i>Vultur gryphus</i>	NT	E	I	87	60	77	85	SSP	<ul style="list-style-type: none"> <li>❶ Existing SSP providing birds for release to the wild</li> <li>❷ SSP Coordinator: Mike Mace, SDWAP NA Regional Studbook Keeper, Susie Kasielke, Los Angeles Zoo</li> </ul>
<b>Old World Vultures</b>									
Eurasian Black Vulture <i>Aegypius monachus</i>	NT		II	47	46	48	70	SSP	<ul style="list-style-type: none"> <li>❶ Existing SSP</li> <li>❷ SSP Coordinator: Tim Snyder, Chicago Zoological Society – Brookfield Zoo</li> <li>NA Regional Studbook Keeper: Mary Jo Willis, Denver Zoo</li> </ul>
Bearded Vulture <i>Gypaetus barbatus</i> + <i>G. b. aureus</i> + <i>G.b. barbatus</i>	LC		II	2	1	1	0	Downgraded to Phase Out	<ul style="list-style-type: none"> <li>❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management. Based on recommendation from Dave Rimlinger, Species Champion</li> </ul>
Palm-nut Vulture <i>Gypoheirax angolensis</i>	LC		II	8	7	8	15	DERP	<ul style="list-style-type: none"> <li>❶ Taxonomic unique species</li> <li>❷ Species Champion: Michael Mace, SDWAP</li> </ul>
African White-backed Vulture <i>Gyps africanus</i>	NT		II	12	20	18	50	PMP	<ul style="list-style-type: none"> <li>❶ Popular exhibit species but not bred sufficiently – additional founders available – needs emphasis on captive reproduction to become self-sustaining population</li> <li>❷ PMP Species Manager: Susie Kasielke, Los Angeles Zoo</li> </ul>
Oriental White-backed Vulture <i>Gyps bengalensis</i>	CE		I	1	1	1	0	Phase out	<ul style="list-style-type: none"> <li>❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management</li> </ul>

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
Cape griffon vulture <i>Gyps coprotheres</i>	VU		II	12	27	25	50	PMP	<ul style="list-style-type: none"> <li>❶ In demand as exhibit species – additional founders available – potential for release to the wild if sufficient numbers produced</li> <li>❷ PMP Species Manager: Susie Kasielke, Los Angeles Zoo</li> </ul>
Eurasian griffon vulture <i>Gyps fulvus + G. f. fulvus</i>	LC		II	6	2	4	0	Phase out	<ul style="list-style-type: none"> <li>❶ Investigate potential to send to EAZA facilities</li> </ul>
Ruppell's griffon vulture <i>Gyps rueppelli + G. r. rueppelli</i>	NT		II	46	45	45	75	PMP	<ul style="list-style-type: none"> <li>❶ Popular exhibit species but not bred consistently – additional founders available – needs emphasis on captive reproduction to become self-sustaining population.</li> <li>❷ PMP Species Manager: Bryan Emberton, Disney's Animal Kingdom</li> </ul>
Hooded Vulture <i>Necrosyrtes monachus</i>	LC		II	26	36	30	50	Upgraded to PMP	<ul style="list-style-type: none"> <li>❶ Popular exhibit species with sufficient numbers to become self-sustaining captive population</li> <li>❷ Upgraded to PMP status and a manager is being solicited at this time.</li> </ul>
Egyptian Vulture <i>Neophron percnopterus + N. p. ginginianus + N. p. percnopterus</i>	E		II	4	3	4	12	DERP	<ul style="list-style-type: none"> <li>❶ Popular show species</li> <li>❷ With recent change in status the TAG will search for a Species Champion to monitor this population.</li> </ul>
Red-headed Vulture <i>Sarcogyps calvus</i>	CE		II	4	1	1	0	Phase out	<ul style="list-style-type: none"> <li>❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management</li> </ul>
Lappet-faced Vulture <i>Torgos tracheliotus</i>	VU		II	30	30	26	50	PMP	<ul style="list-style-type: none"> <li>❶ Popular exhibit species but not bred sufficiently – additional founders available – needs research to determine how many should be imported to achieve population goals – needs emphasis on captive reproduction to become self-sustaining population</li> <li>❷ PMP Species Manager: Debbie Milligan, Dallas Zoo</li> </ul>
White-headed Vulture <i>Trionoceph occipitalis</i>	VU		II	4	1	2	0	Phase out	<ul style="list-style-type: none"> <li>❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management</li> </ul>

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
<b>Hawks, Eagles, etc...</b>									
Cooper's Hawk <i>Accipiter cooperii</i>	LC		II	6	2	8	10	DERP	❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Northern Goshawk <i>Accipiter gentilis</i> + <i>A. g. buteoides</i> + <i>A. g. fujiyamae</i> + <i>A. g. gentiles</i>	LC		II	3	0		0	Phase Out	❶ Native species sometimes used for exhibit/education – possible to acquire numbers from wildlife rehabilitators – breeding not recommended
Eurasian Sparrowhawk <i>Accipiter nisus</i>	LC		II		0	2	0	Phase Out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management
Sharp-shinned Hawk <i>Accipiter striatus</i>	LC		II	3	0	1	0	Phase Out	❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
White-tailed Hawk <i>Buteo albicaudatus</i>	LC		II		1	1	0	Phase Out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management
Augur Buzzard <i>Buteo augur</i>	LC		II	21	11	8	0	Phase Out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management
Red-tailed Hawk <i>Buteo jamaicensis</i> + <i>B. j. borealis</i> + <i>B. j. calurus</i> + <i>B. j. costaricensis</i> + <i>B. j. hadropus</i> + <i>B. j. harlani</i> + <i>B. j. kiemsisi</i> + <i>B. j. krideri</i> + <i>B. j. umbrinus</i>	LC		II	233	138	221	187	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended; Reduce population. Replace with flagship species.

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
Rough-legged Hawk <i>Buteo lagopus</i> + <i>B. l. lagopus</i> + <i>B. l. sanctijohannis</i>	LC		II	19	5	17	17	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Red-shouldered Hawk <i>Buteo lineatus</i> + <i>B. l. alleni</i> + <i>B. l. lineatus</i>	LC		II	18	13	19	18	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Grey Hawk <i>Buteo nitidus</i>	LC		II		1	1	0	Phase Out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management
Broad-winged Hawk <i>Buteo platypterus</i> + <i>B. p. platypterus</i>	LC		II	10	7	11	10	DERP	❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Red-backed Hawk <i>Buteo polyosoma</i>	LC		II		1	1	0	Phase Out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management
Ferruginous Hawk <i>Buteo regalis</i>	LC		II	9	10	6	12	DERP	❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Auger Buzzard <i>Buteo rufofuscus</i>	LC		II		11	2	11	DERP	❶ Species popular for education – sufficient numbers available through private sector breeders – non-show exhibition not recommended as species may compete for space with others in need of management
Hawai'ian Hawk <i>Buteo solitarius</i>	NT	E	II	3	4	9	15	DERP	❶ Federally endangered species -conservation message; has a fieldwork component
Swainson's Hawk <i>Buteo swainsonii</i>	LC		II	31	17	34	30	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
Harris's Hawk <i>Parabuteo unicinctus</i> + <i>P. u. harrisi</i> + <i>P. u. superior</i>	LC		II	130	102	129	115	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended - reduce numbers
Northern Harrier <i>Circus cyaneus</i> + <i>C. c. hudsonius</i>	LC		II	5	2	5	5	DERP	❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Mississippi Kite <i>Ictinia mississippiensis</i>	LC		II	7	5	10	10	DERP	❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Black Kite <i>Milvus migrans</i> + <i>M. m. affinis</i> + <i>M. m. migrans</i> + <i>M. m. parasitus</i>	LC		II	1	10	2	0	Phase-out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management
Bald Eagle <i>Haliaeetus leucocephalus</i> + <i>H. l. alascanus</i> + <i>H. l. leucocephalus</i>	LC	T	I	272	156	280	267	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding recommended only in conjunction with programs for releases to the wild
White-tailed Sea Eagle <i>Haliaeetus leucogaster</i>	LC		II		1	1	0	Phase Out	❶ Currently only one bird shows up on space survey and ISIS.
Steller's Sea Eagle <i>Haliaeetus pelagicus</i> + <i>H. p. pelagicus</i>	VU		II	9	10	15	20	Upgraded to PMP	❶ Species in decline in the wild likely to breed well in captivity and is a cold-hardy species suitable for northern facilities – potential genetic reservoir for reintroduction if needed ❷ Upgraded to PMP status and a manager is being solicited at this time.
African Fish Eagle <i>Haliaeetus vocifer</i>	LC		II	12	11	12	20	DERP	❶ Popular exhibit, education and show species ❷ Species champion needs to be recruited.

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
Golden Eagle <i>Aquila chrysaetos</i> + <i>A. c. canadensis</i> + <i>A. c. chrysaetos</i> + <i>A. c. homeryi</i> + <i>A. c. japonica</i>	LC		II	65	35	65	65	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Tawny Eagle <i>Aquila rapax</i> + <i>A. r. nipalensis</i> + <i>A. r. orientalis</i> + <i>A. r. rapax</i>	LC		II		5	5	0	Phase-out	❶ Species sometimes used for education – sufficient numbers available through private sector breeders – non-show exhibition not recommended as species may compete for space with others in need of management
Harpy Eagle <i>Harpia harpyja</i>	VU	E	II	11	14	14	30	PMP	❶ Species in decline in northern part of range with high potential as a conservation flagship species – founders are available from captive populations in other regions. ❷ PMP Species Manager: Clancy Hall, San Diego Zoo
Martial Eagle <i>Polemaetus bellicoccus</i>	LC		II		0	6	0	Phase Out	❶ Species has only recently been available with any numbers – breeding not recommended at this time.
Ornate Hawk-eagle <i>Spizaetus ornatus</i>	LC		II	7	2	7	15	DERP	❶ Husbandry research model for endangered forms ❷ Species Champion: Daryl Richardson, Dallas World Aquarium
Black Hawk-eagle <i>Spizaetus tyrannus</i>	LC				0	2	0	Phase Out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management
Crowned Hawk-eagle <i>Stephanoaetus coronatus</i>	LC		II	5	7	9	10	DERP	❶ Species is gaining interest as a display and demonstration species – husbandry is similar to other large forest eagles, so species is a husbandry research model
Bateleur Eagle <i>Terathopius ecaudatus</i>	LC		I	24	21	28	30	DERP	❶ Unusual species not bred consistently – husbandry research needed to develop reliable propagation techniques ❷ Species Champion to be recruited – still no interest in monitoring this species.



Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
Secretary Bird <i>Sagittarius serpentarius</i>	LC		II	24	25	33	35	DERP	<ul style="list-style-type: none"> <li>❶ Popular exhibit species with sufficient numbers to become self-sustaining captive population</li> <li>❷ PMP Species Manager: Don Sterner, SDWAP</li> </ul>
Osprey <i>Pandion haliaetus</i>	LC				0	3	3	DERP	<ul style="list-style-type: none"> <li>❶ Native species popular for exhibit/education –breeding not recommended. Taxonomic unique species.</li> </ul>
Common Caracara <i>Polyborus plancus + P. p. auduboni</i>	LC		II	20	19	17	25	DERP	<ul style="list-style-type: none"> <li>❶ Native species popular for exhibit/education –breeding not recommended</li> </ul>
<b>Falcons</b>									
Merlin <i>Falco columbarius + F. c. columbarius + F. c. richardsonii</i>	LC		II	10	1	8	8	DERP	<ul style="list-style-type: none"> <li>❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended</li> </ul>
Prairie Falcon <i>Falco mexicanus</i>	LC		II	4	5	6	10	DERP	<ul style="list-style-type: none"> <li>❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended</li> </ul>
Aplomado Falcon <i>Falco femoralis</i>	LC				0	1	3	DERP	<ul style="list-style-type: none"> <li>❶ Native species popular for exhibit/education – good conservation message.</li> </ul>
Peregrine Falcon <i>Falco peregrinus + F. p. anatum + F. p. pealei + F. p. tundrius</i>	LC		I	62 (68 in 2002)	34	31	40	DERP	<ul style="list-style-type: none"> <li>❶ Native species with strong conservation message popular and recommended for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended unless in conjunction with sanctioned release program.</li> </ul>
Barbary Falcon <i>Falco pelegrinoides</i>	LC				0	1	0	Phase Out	<ul style="list-style-type: none"> <li>❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management</li> </ul>

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
Gyr Falcon <i>Falco rusticolus</i>	LC		I	1 (8 in 2002)	2	2	4	DERP	❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – not recommended for warm climates – breeding not recommended
American Kestrel <i>Falco sparverius</i> + <i>F. s. paulus</i> + <i>F. s. sparverius</i>	LC		II	143	77	121	110	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended - reduce population
Lanner Falcon <i>Falco biarmicus</i>	LC		II	11	5	8	8	DERP	❶ Popular education species available through captive breeding in the private sector
Saker Falcon <i>Falco cherrug</i> + <i>F.c. altaicus</i>	E		II	0	0	6	6	DERP	❶ Alternate education species available through captive breeding in the private sector
Laggar Falcon <i>Falco jugger</i>	NT		I	0	0	1	0	Phase Out	❶ Alternate education species available through captive breeding in the private sector
African Pygmy Falcon <i>Polihierax semitorquatus</i>	LC		II	41	39	42	70	PMP	❶ Popular exhibit and education species ❷ PMP Species Manager: Nicole LaGreco, San Diego Zoo
<b>Barn Owls</b>									
Barn Owl <i>Tyto alba</i> + <i>T. a. alba</i> + <i>T. a. delicatula</i> + <i>T. a. pratincola</i>	LC		II	184	133	183	150	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended - reduce population
<b>Typical Owls</b>									
Saw Whet Owl <i>Aegolius acadicus</i>	LC		II	10	11	17	20	DERP	❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Short-eared Owl <i>Asio flammeus</i> + <i>A.f. flammeus</i> + <i>A.s.sandwichensis</i>	LC		II	23	8	10	15	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
Long-eared Owl  <i>Asio otus</i> + <i>A. o. otus</i> + <i>A. o. wilsonianus</i>	LC		II	22	11	15	15	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Burrowing Owl  <i>Athene cunicularia</i> + <i>A.c.floridana</i> + <i>A.c.hypugaea</i>	LC		II	153	87	126	170	PMP	❶ Popular exhibit and education species – with sufficient numbers and breeding to maintain self-sustaining captive population ❷ PMP Species Manager: Yvonne Strode, Glen Oak Zoo
Great-horned Owl  <i>Bubo virginianus</i> + <i>B. v. algistus</i> + <i>B. v. nacurutu</i> + <i>B. v. pacificus</i> + <i>B. v. virginianus</i>	LC		II	137	118	232	135	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended – reduce population
Rufous Banded Owl  <i>Ciccaba albitarsus</i>	LC		II		0	1	0	Phase Out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management
Ferruginous Pygmy Owl  <i>Glaucidium brasilianum</i>	LC		II	7	3	2	5	DERP	❶ Native species sometimes used for exhibit/education – breeding not recommended
Elf Owl  <i>Micrathene whitneyi</i>	LC		II	9	5	5	10	DERP	❶ Native species sometimes used for exhibit/education – breeding not recommended
Boobook Owl  <i>Ninox novaeseelandin</i>	LC		II		2	2	0	Phase Out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management
Snowy Owl  <i>Nyctea sandiaca</i>	LC		II	67 (108 in 2002)	17	43	150	PMP	❶ Popular exhibit and education species with sufficient numbers to become self-sustaining captive population. This species is susceptible to WNV, which may affect any institution's desire/ability to work with it. ❷ PMP Species Manager: Mike Houlihan, Wildlife Conservation Society/ Bronx Zoo

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
Screech Owl (common & Eastern)  <i>Otus asio</i> + <i>O. a. asio</i> + <i>O. a. swenki</i>	LC		II	228	147	242	150	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended - reduce population
Western Screech Owl  <i>Otus kennicotti</i>	LC		II	8 (11 in 2002)	18	19	20	DERP	❶ Native species sometimes used for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended
Oriental Bay Owl  <i>Phodilus badius</i> + <i>P.b.badius</i>	LC		II		0	4	0	Phase Out	❶ Species of interest but not sufficient numbers to maintain captive population.
Spotted Owl  <i>Strix occidentalis</i> + <i>S. o. caurina</i>	NT		II	6	2	3	6	DERP	❶ Native species used for exhibit/education to illustrate conservation issues – need for captive breeding is not currently indicated – acquire rehabilitated, non-releasable specimens as space permits
Ural Owl  <i>Strix uralensis</i>	LC		II		0	2	0	Phase Out	❶ Species of interest but not sufficient numbers to maintain captive population.
Barred Owl  <i>Strix varia</i> + <i>S. v. georgica</i> + <i>S. v. varia</i>	LC		II	116	55	110	100	DERP	❶ Native species popular for exhibit/education – sufficient numbers of non-releasable birds available through wildlife rehabilitators – breeding not recommended - reduce population
Eurasian Eagle-owl <i>Bubo bubo</i> + <i>B.b.bubo</i>	LC		II	39	45	51	70	PMP	❶ Popular education species with sufficient numbers to become self-sustaining captive population ❷ PMP Species Manager: Harrison Edell, San Francisco Zoological Gardens
Milky Eagle-owl  <i>Bubo lacteus</i>	LC		II	9	14	11	20	DERP	❶ Popular education species, great exhibit value ❷ Species Champion: Harrison Edell, San Francisco Zoological Gardens
Mottled Owl  <i>Ciccabba virgata</i>	LC		II	4	1	1	0	Phase out	❶ Insufficient numbers in captivity and competes for space with other species identified as higher priority for management

Common Name  <i>Scientific Name</i>	Status			Population size			Management category	<ul style="list-style-type: none"> <li>❶ Conservation Function</li> <li>❷ Coordinator/Manager/Champion</li> </ul>	
	IUCN	USFWS	CITES	2006 RCP Numbers	Current 2009				Target
					Space Survey	ISIS Data			
White-faced Scops Owl  <i>Onus leucotis</i> + <i>O. l. granti</i> + <i>O. l. leucotis</i>	LC			7	11	11	15	DERP	❶ Common species to serve as a husbandry model and conservation ambassador for endangered or threatened forms
Spectacled Owl  <i>Pulsatrix perspicillata</i> + <i>P.p.perspicillata</i>	LC		II	66	50	73	85	PMP	<ul style="list-style-type: none"> <li>❶ Popular exhibit species with sufficient numbers to continue as a self-sustaining captive population</li> <li>❷ PMP Species Manager: Steve Sarro, National Aviary</li> </ul>
Tawny Owl  <i>Strix aluco</i> + <i>S. a. aluco</i> + <i>S. a. sylvatica</i>	LC		II	12	5	12	12	DERP	❶ Popular education species available through captive breeding in the private sector
Great Gray Owl  <i>Strix nebulosa</i> + <i>S. n. lapponica</i> + <i>S. n. nebulosa</i>	LC		II/III	12	6	9	10	DERP	❶ NA species, winter hardy



Photo courtesy of the San Diego Zoo

## RAPTOR TAG ACTION PLANS

- California condor reintroduction – Mike Wallace and Michael Mace
  - Continue support captive breeding efforts
- Andean condor reintroduction – Michael Mace
  - Support the SSP with specimen for the Colombian release programs.
- Eurasian Black Vulture SSP – Artificial Insemination project at Denver – Mary Jo Willis and Tim Snyder
- Asian Vulture Initiative – Scott Tidmus, Disney’s Animal Kingdom and Nancy Clum, WCS. The goal of this project is to promote conservation of Asian vultures and specifically to support ex situ efforts on three species of Gyps vultures (*bengalensis*, *indicus*, *tenuirostris*) in South Asia (India, Nepal, Pakistan). Expand support to new populations being worked with in Cambodia.
- Support Palm-nut vulture nutrition research (cholesterol/lipid levels) to determine normal ranges – Michael Mace, San Diego Zoo.
- Continue to develop animal care manuals for all taxa covered by this TAG. Currently finalizing the Owl Animal Care Manual and the Condor Animal Care Manual. Work will continue on the next taxon once these two are finalized, goal to complete at least two more over the next three years.
- Support *in-situ* conservation efforts with harpy eagle – Dave Rimlinger and Clancy Hall.
- Establish operating MOU’s with conservation organizations in southern Africa – Scott Tidmus. MOU’s currently exist with the DeWildt Vulture Unit and Rhino & Lion Wildlife Conservation, both located in South Africa. Further work is underway to expand these partnerships to other facilities in Africa. These are partners in conservation and are assisting in locating and acquiring rehabilitated, non-releasable vultures for import into our zoo collections.

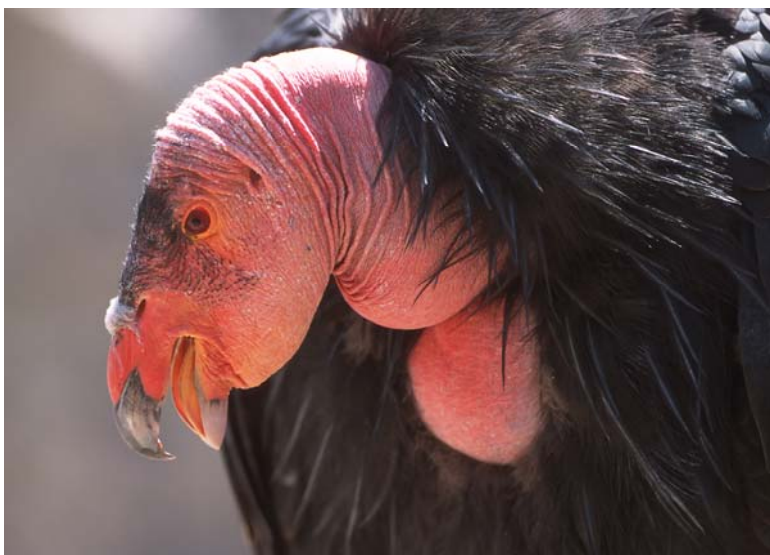
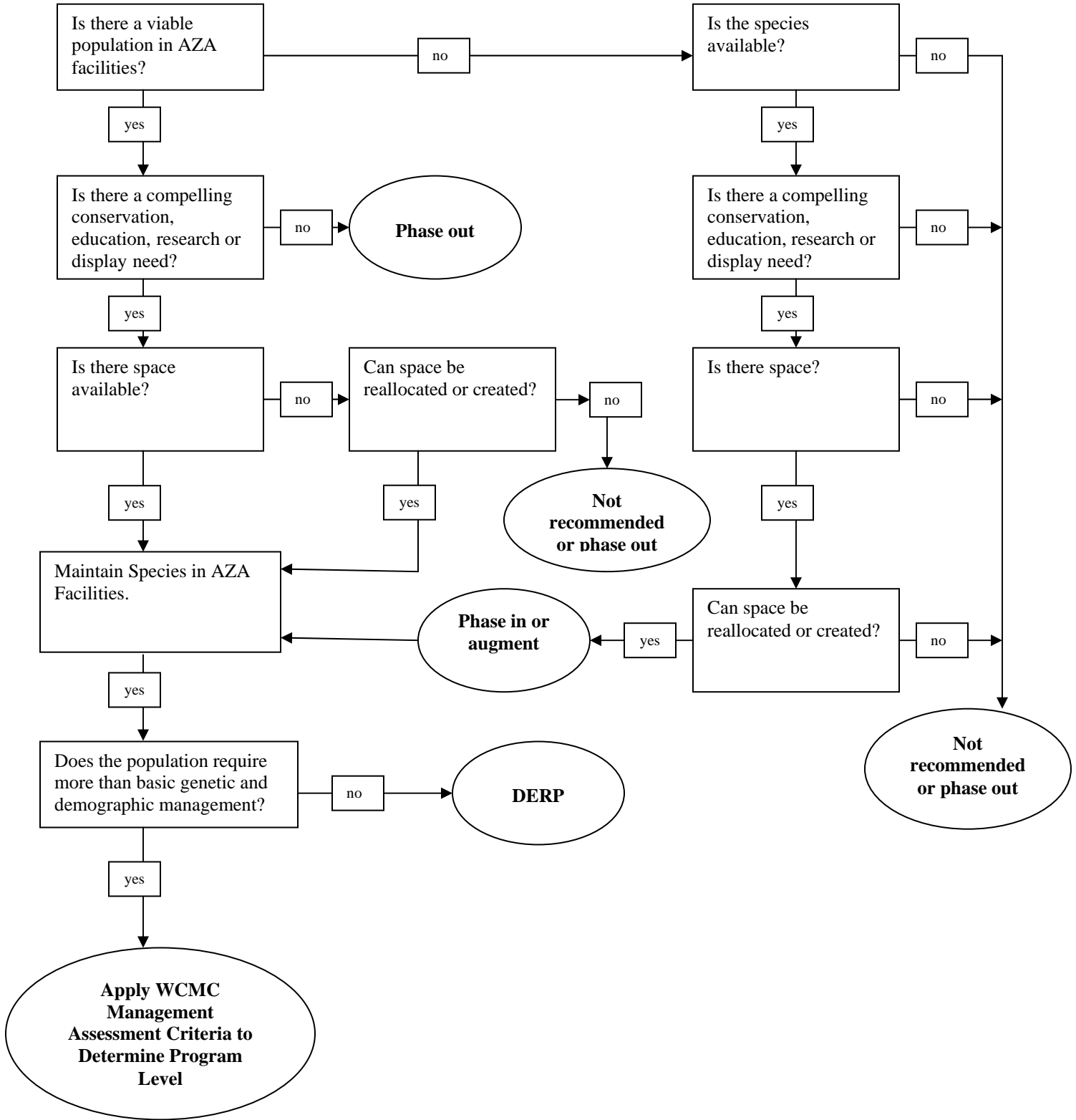


Photo Courtesy of the San Diego Zoo

**Appendix I**

**Raptor TAG Decision Tree 2009**



**Summary Table Resources and Definitions**

- Current population size is from February 2009 ISIS data.
- Target populations are derived from the Spring 2008 Space Survey and the population size evaluation meeting with the Population Management Center held in May of 2009. For complete data from the space survey, please see Appendix III and for the report from the PMC meeting see Appendix VII.
- For population status, if the area is left blank it infers no information is available in regard to those particular resources.
- For population status in Appendix VIII, the term NGT refers to the species being “Not Globally Threatened” meaning widespread and abundant with increasing range.
- IUCN Definitions – as taken from the IUCN Red Data List Categories and Criteria, Version 3.1.
  - Extinct (EX) – A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon’s life cycle and life form.
  - Extinct in the Wild (EW) – A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population/s well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon’s life cycle and life form.
  - Critically Endangered (CE) – A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see IUCN Red Data List Categories and Criteria, Version 3.1), and it is therefore considered to be facing an extremely high risk of extinction in the wild.
  - Endangered (EN) – A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (IUCN Red Data List Categories and Criteria, Version 3.1), and it is therefore considered to be facing a very high risk of extinction in the wild.
  - Vulnerable (VU) – a taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (IUCN Red Data List Categories and Criteria, Version 3.1), and is therefore considered to be facing a high risk of extinction in the wild.
  - Near Threatened (NT) – A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.
  - Least Concern (LC) – A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.



- Data Deficient (DD) – A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.
- Not Evaluated (NE) – a taxon is Not Evaluated when it has not yet been evaluated against the criteria. (IUCN Red Data List Categories and Criteria, Version 3.1).
- USFWS definitions – as taken from the Fish and Wildlife Service Glossary of terms:
  - Endangered – An animal or plant species in danger of extinction throughout all or a significant portion of its range.
  - Threatened – An animal or plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
- CITES Definitions – as taken from the terminology section of the CITES website:
  - Appendix I - includes all species threatened with extinction, which are or may be affected by trade. Trade in specimens of these species must be subject to particularly strict regulation in order not to endanger further their survival and must only be authorized in exceptional circumstances.
  - Appendix II - includes i) all species which although not necessarily now threatened with extinction may become so unless trade in specimens of these species is subject to strict regulation in order to avoid utilization incompatible with their survival; and ii) other species which must be subject to regulation in order that trade in specimens of certain species referred to in subparagraph (a) above may be brought under effective control [e.g. species that are similar in appearance to those included in Appendix I].
  - Appendix III - includes all species, which any Party identifies as being subject to regulation within its jurisdiction for the purpose of preventing or restricting exploitation, and as needing the cooperation of other Parties in the control of trade.
- Management Assessment Criteria Table – This table was developed by WCMC to assist TAGs in determining the appropriate level of population management for their program species. This table was used in review of the species currently found within AZA institutions. This review was done by members of the steering committee and in special cases the experience and knowledge of the specific species was used to evaluate their level of management. Any variance in the MAC tool and the decision of the TAG steering committee is explained following the evaluation chart – Appendix III.

**Appendix III**

**Management Assessment Criteria Matrix and TAG Rankings**

<b>CRITERIA</b>	<b>SSP (S)</b>	<b>PMP (P)</b>	<b>No Management (D) (DERP/PHASE IN)</b>
Availability within AZA	LOW	MODERATE	EXTREMES**
Availability outside	LOW	MODERATE	EXTREMES**
Extinction Risk without Management*	ENDANGERED/THREATENED	VULNERABLE	EXTREMES**
Extinction Risk with Management*	DECREASES	DECREASES/STABLE	STABLE
Demand within AZA	HIGH	MODERATE	LOW
Institutional Commitment	HIGH	MODERATE	LOW
Ease of Breeding	LOW/MODERATE	HIGH	EXTREMES**
Extinction Risk (Wild)	ENDANGERED/THREATENED	VULNERABLE	LEAST CONCERN
Acquisition Cost (Outside AZA)	HIGH	MODERATE	LOW
Program Operating Costs	HIGH	MODERATE	LOW
International Program	YES	NO	NO
Link to Conservation of Wild Population	DIRECT	INDIRECT OR NONE	NONE
North American Governmental Conservation Program	YES	NO	NO
<b>CHARACTERISTICS OF POPULATION MANAGEMENT LEVELS</b>	<b>SSP</b>	<b>PMP</b>	<b>No Management (DERP/PHASE IN)</b>
Participation	FULL/MANDATORY	VOLUNTARY	N/A
Memorandum of Participation	NO	NO	N/A
Compliance	MANDATORY	VOLUNTARY	N/A
AZA Conflict Resolution Process	YES	NO	N/A
Non-member Participation	YES	PER PARTICIPANT A/D POLICY	PER PARTICIPANT A/D POLICY
Animal-by-Animal Recommendations	YES	PER PROGRAM DECISION	NO
Steering Committee	OPTIONAL	NO	N/A
AZA PMC Assistance	YES	YES	NO
SPMAG Assistance	YES	YES	EVALUATED ON A CASE-BY-CASE BASIS
AZA Regional Studbook	YES	YES	NO

\* In Zoos and Aquariums

\*\*\*"Extremes" refers to species that are either so highly abundant or so rare as to render management impractical or unnecessary.

	Availability within AZA	Availability Outside AZA	Extinction Risk without Management	Extinction Risk with Management	Demand within AZA	Institutional Commitment	Ease of Breeding	Extinction Risk (wild)	Acquisition Cost (outside AZA)	Program Operating Costs	International Program	Link to Conservation of Wild Population	North American Governmental Conservation Program	Program Status
<b>New World Vultures</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	
Turkey Vulture	D	D	D	D	D	D	P	D	D	D	D	D	D	D
Black Vulture	D	D	D	D	D	D	P	D	D	D	D	D	D	D
California Condor	S	S	S	P	P	S	S	S	S	S	S	S	S	S
King Vulture	P	P	D	D	P	P	P	D	P	P	D	P	D	P
Andean Condor	S	S	S	P	P	S	P	S	S	S	S	S	S	S
<b>Old World Vultures</b>														
Eurasian Black Vulture	S	S	P	P	S	S	P	P	S	P	S	S	D	S
Bearded Vulture	S	S	D	P	D	S	S	D	S	P	S	D	D	P
Palm-nut Vulture	S	S	D	P	D	S	S	D	S	P	D	D	D	P
African White-backed Vulture	S	P	S	D	P	P	S	P	P	P	P	P	D	P
Oriental White-backed Vulture	S	S	D	P	D	S	S	S	S	P	S	S	D	S
Cape griffon vulture	S	P	S	D	P	P	S	P	P	P	P	P	D	P
Eurasian griffon vulture	S	S	P	D	D	S	S	D	P	P	D	P	D	P
Ruppell's griffon vulture	S	P	S	D	P	P	P	P	P	P	P	P	D	P
Hooded Vulture	P	P	P	P	D	P	S	D	S	P	P	P	D	P
Egyptian Vulture	S	P	S	P	D	S	S	S	S	P	P	P	D	P
Red-headed Vulture	S	S	S	P	D	S	S	S	S	P	P	S	D	S
Lappet-faced Vulture	S	P	S	D	P	P	S	P	P	P	P	P	D	P
White-headed Vulture	S	S	P	P	D	P	P	P	P	P	P	D	D	P
<b>Hawks, Eagles, etc...</b>														
Cooper's Hawk	S	D	D	D	D	D	P	D	D	D	D	D	D	D
Northern Goshawk	S	D	D	D	D	D	P	D	D	D	D	D	D	D
Eurasian Sparrowhawk	S	P	P	D	D	D	P	D	D	D	D	D	D	D
Sharp-shinned Hawk	S	D	D	D	D	D	P	D	D	D	D	D	D	D
White-tailed Hawk	S	S	P	D	D	D	P	D	D	D	D	D	D	D
Augur Buzzard	S	P	P	D	D	D	P	D	S	D	D	D	D	D
Red-tailed Hawk	S	D	D	D	P	D	P	D	D	D	D	D	D	D
Rough-legged Hawk	S	D	D	D	D	D	P	D	D	D	D	D	D	D
Red-shouldered Hawk	S	D	D	D	D	D	P	D	D	D	D	D	D	D
Grey Hawk	S	P	P	D	D	D	P	D	D	D	D	D	D	D
Broad-winged Hawk	S	D	D	D	D	D	P	D	D	D	D	D	D	D
Red-backed Hawk	S	S	P	P	D	D	P	D	P	D	D	D	D	D
Ferruginous Hawk	S	P	D	D	D	D	P	D	D	D	D	D	D	D
Jackal Buzzard	S	P	P	D	D	D	P	D	S	D	D	D	D	D
Hawai'ian Hawk	S	P	S	D	D	D	P	S	P	D	D	P	P	D
Swainson's Hawk	P	D	D	D	D	D	P	D	D	D	D	D	D	D
Harris's Hawk	D	D	D	D	P	D	P	D	D	D	D	D	D	D
Northern Harrier	S	D	D	D	D	D	S	D	D	D	D	D	D	D
Mississippi Kite	S	D	D	D	D	D	S	D	D	D	D	D	D	D
Black Kite	S	P	P	D	D	D	S	D	P	D	D	D	D	D
Bald Eagle	D	D	D	D	P	P	D	D	D	D	D	D	D	D
White-tailed Sea Eagle	S	P	P	P	D	P	P	D	S	D	D	D	D	D
Steller's Sea Eagle	S	S	P	D	P	P	S	S	P	P	P	P	D	P

	Availability within AZA	Availability Outside AZA	Extinction Risk without Management	Extinction Risk with Management	Demand within AZA	Institutional Commitment	Ease of Breeding	Extinction Risk (wild)	Acquisition Cost (outside AZA)	Program Operating Costs	International Program	Link to Conservation of Wild Population	North American Governmental Conservation Program	Program Status
	1	2	3	4	5	6	7	8	9	10	11	12	13	
African Sea Eagle (African fish eagle)	P	P	P	D	D	P	S	D	S	P	D	D	D	D
Golden Eagle	D	D	D	D	P	P	D	D	D	D	D	S	D	D
Tawny Eagle	S	D	P	D	D	P	P	D	S	D	D	D	D	D
Harpy Eagle	S	S	P	P	P	D	D	S	S	P	S	P	D	P
Martial Eagle	S	P	P	P	D	S	S	D	S	P	D	D	D	D
Ornate Hawk-eagle	S	D	D	D	D	D	D	D	P	D	D	D	D	D
Black Hawk-eagle	S	S	P	P	D	P	S	D	P	P	D	D	D	D
African Crowned eagle (crowned hawk eagle)	S	P	P	P	D	S	P	D	S	P	D	D	D	D
Bateleur Eagle	P	P	P	P	D	P	P	D	S	P	D	D	D	P
Secretary Bird	P	P	P	P	P	P	S	D	P	P	P	P	D	P
Osprey	S	D	P	D	D	P	S	D	D	D	D	D	D	D
Common Caracara	P	D	D	D	D	D	S	D	D	D	D	D	D	D
<b>Falcons</b>														
Merlin	S	D	D	D	D	D	P	D	D	D	D	D	D	D
Prairie Falcon	S	D	D	D	D	D	P	D	D	D	D	D	D	D
Aplomado Falcon	S	P	P	D	D	P	P	D	D	P	D	D	D	D
Peregrine Falcon	P	P	D	D	D	D	P	D	D	D	D	D	D	D
Barbary Kestrel	S	P	P	D	D	D	P	D	P	D	D	D	D	D
Gyr Falcon	S	P	P	D	D	D	P	D	D	D	D	D	D	D
American Kestrel	D	D	D	D	D	D	P	D	D	D	D	D	D	D
Lanner Falcon	S	P	P	D	D	D	P	D	S	D	D	D	D	D
Saker Falcon	S	P	P	D	D	D	P	S	S	D	D	D	D	D
Laggar Falcon	S	P	P	D	D	D	P	S	S	D	D	D	D	D
African Pygmy Falcon	P	P	S	D	D	P	P	P	P	P	P	P	D	P
<b>Barn Owls</b>														
barn owl	D	D	D	D	D	D	D	D	D	D	D	D	D	D
<b>Typical Owls</b>														
Saw Whet Owl	P	D	P	D	D	D	P	D	D	D	D	D	D	D
Short-eared Owl	S	D	D	D	D	D	P	D	D	D	D	D	D	D
Long-eared Owl	P	D	D	D	D	D	P	D	D	D	D	D	D	D
Burrowing Owl	P	P	D	D	P	D	S	P	D	D	D	P	P	P
Great-horned Owl	D	D	D	D	P	D	D	D	D	D	D	D	D	D
Rufous Banded Owl	S	P	P	P	D	D	P	D	P	D	D	D	D	D
Ferruginous Pygmy Owl	S	P	P	D	D	D	S	D	P	D	D	D	D	D
Elf Owl	S	P	P	P	D	D	S	D	D	D	D	D	D	D
Boobook Owl	S	P	P	P	D	D	S	D	P	D	D	D	D	D
Snowy Owl	S	P	D	D	S	P	S	P	P	P	D	P	S	P
Screech Owl (common & Eastern)	D	D	D	D	P	D	P	D	D	D	D	D	D	D
Western Screech Owl	P	D	D	D	D	D	P	D	D	D	D	D	D	D
Oriental Bay Owl	S	P	P	P	D	D	S	D	S	D	D	D	D	D

	Availability within AZA	Availability Outside AZA	Extinction Risk without Management	Extinction Risk with Management	Demand within AZA	Institutional Commitment	Ease of Breeding	Extinction Risk (wild)	Acquisition Cost (outside AZA)	Program Operating Costs	International Program	Link to Conservation of Wild Population	North American Governmental Conservation Program	Program Status
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Spotted Owl	S	P	P	D	D	D	S	S	P	D	D	D	D	D
Ural Owl	S	P	P	P	D	D	S	D	S	D	D	D	D	D
Barred Owl	D	D	D	D	P	D	P	D	D	D	D	D	D	D
Eurasian Eagle-owl	S	P	P	P	P	P	S	D	P	D	D	P	D	P
Milky Eagle-owl	S	D	P	P	D	D	S	D	P	S	D	D	D	D
Mottled Owl	S	P	P	P	D	D	S	D	P	D	D	D	D	D
White-faced Scops Owl	S	P	P	D	D	D	P	D	P	D	D	D	D	D
Spectacled Owl	P	P	D	P	P	P	S	D	D	D	P	P	D	P
Tawny Owl	S	P	P	D	D	D	P	D	P	D	D	D	D	D
Great Gray Owl	S	P	P	D	D	P	S	D	P	D	D	D	D	D



Denotes species that are currently designated as programs for the Raptor TAG.



Denotes species that score out to be programs but are not designated as such by the steering committee; decisions based on species numbers and availability to acquire additional specimens.

As mentioned above there is a large number of species currently rating out to be programs for this TAG, however there needs to be some explanation as to the reason for the steering committee's decision. The status of old world vultures is a well documented concern as there are several issues affecting their wild status, from the reduction in food sources and proper nesting sites, secondary poisoning as well as persecution. These factors combined have led to the status of most of these species to be elevated through out their range from least concern to threatened and near threatened.

As the majority of these birds are to some level represented in AZA facilities we have had to look at space availability and the numbers which support further captive management plans. It does not mean we will not do everything within our abilities to support conservation of these species, but the reality is that we have finite space and need to assess that with experience and understanding. As mentioned in our goals, we will continue to work with our international partners to maintain a focus on the work being done and the need to maintain awareness.

## 2008 RAPTOR TAG SPACE SURVEY

Common Name	Scientific Name	Sex ratio of specimens currently in breeding facilities (e.g., 2.2.0)			Sex ratio of specimens currently in holding/education facilities?			Sex ratio of specimens that you plan to have in breeding facilities in three years?			Sex ratio of specimens that you plan to have in holding facilities in three years?		
		M	F	U	M	F	U	M	F	U	M	F	U
<b><u>New World Vultures</u></b>													
King Vulture (PMP)	<i>Sarcorhamphus papa</i>												
	Species totals	26	25	2	16	7	4	26	26	1	13	6	6
Andean Condor (SSP)	<i>Vultur gryphus</i>												
	Species totals	22	23	0	6	8	1	24	24	1	5	9	2
Turkey Vulture	<i>Cathartes aura</i>												
	Species totals	2	6	2	26	33	31	3	3	0	21	29	34
California Condor (SSP)	<i>Gymnogyps californianus</i>												
	Species totals	21	19	3	1	0	0	17	17	8	2	2	9
Black Vulture	<i>Copagyps atratus</i>												
	Species totals	0	3	1	12	10	12	1	1	0	13	13	15
	<b>Grand Totals New World Vultures</b>	<b>155</b>			<b>167</b>			<b>152</b>			<b>179</b>		
<b><u>Old World Vultures</u></b>													
Cinereous Vulture (SSP)	<i>Aegypius monachus</i>												
	Species totals	19	20	1	2	4	0	27	27	0	1	3	4
Bearded Vulture	<i>Gypaetus barbatus</i>												
	Species totals	0	1	0	0	0	0	3	3	0	0	0	0
Palm-nut Vulture	<i>Gyoheirax angolensis</i>												
	Species totals	3	4	0	0	0	0	3	4	2	0	0	2
African White-backed Vulture (PMP)	<i>Gyps africanus</i>												
	Species totals	8	8	0	3	1	0	11	11	1	2	0	5
Oriental White-backed Vulture	<i>Gyps bengalensis</i>												
	Species totals	0	0	0	1	0	0	0	0	0	1	0	0
Cape Griffon (PMP)	<i>Gyps coprotheres</i>												
	Species totals	9	13	0	3	2	0	19	21	4	3	2	0

Common Name	Scientific Name	Sex ratio of specimens currently in breeding facilities (e.g., 2.2.0)			Sex ratio of specimens currently in holding/ education facilities?			Sex ratio of specimens that you plan to have in breeding facilities in three years?			Sex ratio of specimens that you plan to have in holding facilities in three years?		
		M	F	U	M	F	U	M	F	U	M	F	U
Eurasian Griffon Vulture	<i>Gyps fulvus</i>												
	Species totals	0	0	0	1	1	0	0	0	0	1	1	0
Himalayan Griffon Vulture	<i>Gyps himalayensis</i>												
	Species totals	0	0	0	0	0	0	0	0	0	0	0	0
Ruppell's Griffon Vulture(PMP)	<i>Gyps ruppelli</i>												
	Species totals	20	21	0	2	5	1	25	26	0	1	4	1
Hooded Vulture (PMP)	<i>Necrosyrtes monachus</i>												
	Species totals	9	7	0	13	6	1	13	13	0	16	2	3
Egyptian Vulture	<i>Neophron percnopterus</i>												
	Species totals	1	1	0	2	0	0	6	6	0	0	0	0
Red-headed Vulture	<i>Sarcogyps calvus</i>												
	Species totals	0	0	0	1	0	0	0	0	0	1	0	0
Lappet-faced Vulture (PMP)	<i>Torgos tracheliotus</i>												
	Species totals	13	13	0	0	3	1	23	22	0	0	0	6
White-headed Vulture	<i>Trigonoceps occipitalis</i>												
	Species totals	1	0	0	0	0	0	3	2	0	0	0	0
	<b>Grand Totals Old World Vultures</b>	<b>172</b>			<b>53</b>			<b>275</b>			<b>59</b>		
<a href="#">Hawks, Eagles, etc..</a>													
Cooper's Hawk	<i>Accipiter cooperii</i>												
	Species totals	1	0	0	0	0	1	1	0	0	0	0	3
Northern Goshawk	<i>Accipiter gentilis</i>												
	Species totals	0	0	0	0	0	0	0	0	0	0	0	0
Eurasian Sparrowhawk	<i>Accipiter nisus</i>												
	Species totals	0	0	0	0	0	0	0	0	0	0	0	0
Sharp-shinned Hawk	<i>Accipiter striatus</i>												
	Species totals	0	0	0	0	0	0	0	0	0	0	0	0
White-tailed Hawk	<i>Buteo albicaudatus</i>												
	Species totals	0	0	0	1	0	0	0	0	0	1	1	0
Red-tailed Hawk	<i>Buteo jamaicensis</i>												
	Species totals	1	3	0	34	53	50	2	3	0	33	45	58
Harlan's Hawk	<i>Buteo j. harlani</i>												
	Species totals	0	0	0	1	0	0	0	0	0	1	0	0
Rough-legged Hawk	<i>Buteo lagopus</i>												
	Species totals	0	0	0	1	2	2	0	0	0	1	2	2
Red-shouldered Hawk	<i>Buteo lineatus</i>												
	Species totals	0	0	0	1	8	4	0	0	0	2	5	6
Grey Hawk	<i>Buteo nitidus</i>												
	Species totals	0	0	0	0	1	0	0	0	0	0	1	0

Common Name	Scientific Name	Sex ratio of specimens currently in breeding facilities (e.g., 2.2.0)			Sex ratio of specimens currently in holding/ education facilities?			Sex ratio of specimens that you plan to have in breeding facilities in three years?			Sex ratio of specimens that you plan to have in holding facilities in three years?		
		M	F	U	M	F	U	M	F	U	M	F	U
<b>Broad-winged Hawk</b>	<i>Buteo platypterus</i>												
	Species totals	0	0	0	3	1	3	0	0	0	2	1	4
<b>Red-backed Hawk</b>	<i>Buteo polyosoma</i>												
	Species totals	0	0	0	0	1	0	0	0	0	0	1	0
<b>Ferruginous Hawk</b>	<i>Buteo regalls</i>												
	Species totals	0	0	0	2	4	4	0	0	0	2	4	3
<b>Augur Buzzard</b>	<i>Buteo rufofuscus</i>												
	Species totals	1	1	0	4	1	4	1	1	0	4	1	4
<b>Hawaiian Hawk</b>	<i>Buteo solitarius</i>												
	Species totals	1	1	0	1	1	0	1	1	0	1	1	0
<b>Swainson's Hawk</b>	<i>Buteo swainsonii</i>												
	Species totals	0	0	0	5	5	7	0	0	0	2	4	7
<b>Harris Hawk</b>	<i>Parabuteo unicinctus</i>												
	Species totals	2	4	0	54	40	2	3	4	0	44	31	13
<b>African gymnogene</b>	<i>Polyboroides typus</i>												
	Species totals	0	0	0	0	0	0	0	0	0	0	0	1
<b>Northern Harrier</b>	<i>Circus cyaneus</i>												
	Species totals	0	0	0	2	0	0	0	0	0	1	0	1
<b>Mississippi Kite</b>	<i>Ictinia mississippiensis</i>												
	Species totals	0	0	0	2	2	1	0	0	0	2	2	1
<b>Black Kite</b>	<i>Milvus migrans</i>												
	Species totals	1	1	0	0	0	8	1	1	0	0	0	12
<b>Bald Eagle</b>	<i>Haliaeetus leucocephalus</i>												
	Species totals	26	24	0	42	48	18	28	26	0	43	48	23
<b>Stellar's Sea Eagle (PMP)</b>	<i>Haliaeetus pelagicus</i>												
	Species totals	5	5	0	0	0	0	8	8	1	0	0	0
<b>African Fish Eagle</b>	<i>Haliaeetus vocifer</i>												
	Species totals	1	1	0	0	8	1	4	4	2	1	8	3
<b>White-tailed Sea Eagle</b>	<i>Haliaeetus leucogaster</i>												
	Species totals	1	0	0	0	0	0	1	1	0	0	0	0
<b>Golden Eagle</b>	<i>Aquila chrysaetos</i>												
	Species totals	8	6	0	6	10	5	5	5	0	10	11	9
<b>Tawny Eagle</b>	<i>Aquila rapax</i>												
	Species totals	2	2	0	1	0	0	2	2	0	1	0	1
<b>Verreaux's Eagle</b>	<i>Aquila verreauxi</i>												
	Species totals	0	0	0	0	0	0	0	0	0	0	0	0



Common Name	Scientific Name	Sex ratio of specimens currently in breeding facilities (e.g., 2.2.0)			Sex ratio of specimens currently in holding/education facilities?			Sex ratio of specimens that you plan to have in breeding facilities in three years?			Sex ratio of specimens that you plan to have in holding facilities in three years?		
		M	F	U	M	F	U	M	F	U	M	F	U
<b>Harpy Eagle (PMP)</b>	<i>Harpia harpyja</i>												
	Species totals	6	5	0	2	1	0	9	9	1	1	0	0
<b>Martial Eagle</b>	<i>Polemaetus bellicosus</i>												
	Species totals	0	0	0	0	0	0	1	1	0	0	0	0
<b>Ornate Hawk Eagle</b>	<i>Spizaetus ornatus</i>												
	Species totals	1	1	0	0	0	0	1	1	0	0	0	0
<b>Black Hawk Eagle</b>	<i>Spizaetus tyrannus</i>												
	Species totals	0	0	0	0	0	0	0	0	0	0	0	0
<b>Crowned Hawk-eagle</b>	<i>Stephanoaetus coronatus</i>												
	Species totals	3	3	0	0	1	0	4	4	1	0	0	0
<b>Bataleur Eagle</b>	<i>Terathoplus ecaudatus</i>												
	Species totals	8	8	0	3	2	0	11	11	0	5	3	0
<b>Secretary Bird (PMP)</b>	<i>Sagittarius serpentarius</i>												
	Species totals	10	11	1	1	2	0	13	13	0	1	2	1
<b>Osprey</b>	<i>Pandion haliaetus</i>												
	Species totals	0	0	0	0	0	0	2	2	0	0	0	1
<b>Crested Caracara</b>	<i>Polyborus plancus</i>												
	Species totals	3	3	2	4	6	1	6	6	2	2	5	6
	<b>Grand Totals Hawks/Eagles, etc...</b>		<b>163</b>			<b>478</b>			<b>214</b>			<b>495</b>	
<b>Falcons</b>													
<b>Merlin</b>	<i>Falco columbarius</i>												
	Species totals	0	0	0	1	0	0	0	0	0	1	1	0
<b>Northern Aplomado Falcon</b>	<i>Falco f. septentrionalis</i>												
	Species totals	0	0	0	0	0	0	0	0	0	0	0	3
<b>Prairie Falcon</b>	<i>Falco mexicanus</i>												
	Species totals	0	0	0	3	0	2	0	0	0	2	0	2
<b>Barbary Falcon</b>	<i>Falco pelegrinoides</i>												
	Species totals	0	0	0	0	0	0	0	0	0	0	0	0
<b>Peregrine Falcon</b>	<i>Falco peregrinus</i>												
	Species totals	2	2	0	12	14	4	2	2	0	9	11	9
<b>Gry/Peregrine Falcon</b>													
	Species totals	0	0	0	1	0	0	0	0	0	0	0	0
<b>Peale's Falcon</b>	<i>Falco peregrinus pealei</i>												
	Species totals	0	0	0	2	1	0	0	0	0	3	1	0

Common Name	Scientific Name	Sex ratio of specimens currently in breeding facilities (e.g., 2.2.0)			Sex ratio of specimens currently in holding/education facilities?			Sex ratio of specimens that you plan to have in breeding facilities in three years?			Sex ratio of specimens that you plan to have in holding facilities in three years?		
		M	F	U	M	F	U	M	F	U	M	F	U
<b>Gyrfalcon</b>	<i>Falco rusticolus</i>												
	<i>Species totals</i>	0	0	0	0	2	0	0	0	0	0	1	0
<b>American Kestral</b>	<i>Falco sparverius</i>												
	<i>Species totals</i>	3	3	0	39	29	5	1	1	0	33	28	18
<b>Lanner Falcon</b>	<i>Falco biarmicus</i>												
	<i>Species totals</i>	0	0	0	2	3	0	0	0	0	2	3	2
<b>Saker Falcon</b>	<i>Falco cherrug</i>												
	<i>Species totals</i>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Lagger Falcon</b>	<i>Falco jugger</i>												
	<i>Species totals</i>	0	0	0	0	0	0	0	0	0	0	0	0
<b>African Pygmy Falcon (PMP)</b>	<i>Polihierax semitorquatus</i>												
	<i>Species totals</i>	16	13	0	8	5	0	21	21	2	5	6	1
	<b>Grand Totals Falcons</b>		<b>39</b>			<b>133</b>			<b>50</b>			<b>141</b>	
<b><u>Barn &amp; Bay Owls</u></b>													
<b>Barn Owl</b>	<i>Tyto alba</i>												
	<i>Species totals</i>	11	15	10	29	32	36	13	16	3	24	28	46
<b>Oriental Bay Owl</b>	<i>Phodilus badius</i>												
	<i>Species totals</i>	0	0	0	1	0	0	0	0	0	0	0	0
<b><u>Typical Owls</u></b>													
<b>Saw whet Owl</b>	<i>Aegolius acadicus</i>												
	<i>Species totals</i>	0	0	0	1	2	8	0	0	0	1	2	12
<b>Short-eared Owl</b>	<i>Asio flammeus</i>												
	<i>Species totals</i>	0	0	0	2	3	2	0	0	0	2	3	2
<b>Hawaiian short-eared Owl</b>	<i>Asio f. sandwichensis</i>												
	<i>Species totals</i>	0	0	0	0	1	0	0	0	0	0	1	0
<b>Long-eared Owl</b>	<i>Asio otus</i>												
	<i>Species totals</i>	0	0	2	3	5	1	1	1	0	2	4	1
<b>Burrowing Owl (PMP)</b>	<i>Athene cunicularia</i>												
	<i>Species totals</i>	22	25	0	19	13	8	29	28	0	15	13	10
<b>Pharaoh's Eagle Owl</b>	<i>Bubo ascalaphus</i>												
	<i>Species totals</i>	0	0	0	0	0	0	0	0	0	0	0	1
<b>Great Horned Owl</b>	<i>Bubo virginianus</i>												
	<i>Species totals</i>	3	7	2	30	41	36	4	7	0	28	37	41
<b>Ferruginous Pygmy Owl</b>	<i>Glaucidium brasillanum</i>												
	<i>Species totals</i>	0	0	0	1	2	0	0	0	0	1	1	0

Common Name	Scientific Name	Sex ratio of specimens currently in breeding facilities (e.g., 2.2.0)			Sex ratio of specimens currently in holding/ education facilities?			Sex ratio of specimens that you plan to have in breeding facilities in three years?			Sex ratio of specimens that you plan to have in holding facilities in three years?		
		M	F	U	M	F	U	M	F	U	M	F	U
<b>Northern Pygmy Owl</b>	<i>Glaucidium gnoma</i>												
	Species totals	0	0	0	0	0	1	0	0	0	0	0	1
<b>Pearl-spotted Owl</b>	<i>Glaucidium perlatum</i>												
	Species totals	0	2	0	0	0	0	2	2	0	0	0	0
<b>Elf Owl</b>	<i>Micrathene whitneyi</i>												
	Species totals	1	1	0	1	1	1	0	0	0	1	0	3
<b>Boobook Owl</b>	<i>Ninox novaeseelandiae</i>												
	Species totals	0	0	0	0	2	0	0	0	0	0	2	0
<b>Snowy Owl (PMP)</b>	<i>Nyctea sandiaca</i>												
	Species totals	5	4	1	4	3	0	10	11	0	10	8	8
<b>Eastern Screech Owl</b>	<i>Otus asio</i>												
	Species totals	2	1	9	29	18	92	4	3	9	25	15	93
<b>Western Screech Owl</b>	<i>Otus kennicotti</i>												
	Species totals	1	0	1	3	3	10	0	0	0	5	3	10
<b>Spotted Owl</b>	<i>Strix occidentalis</i>												
	Species totals	0	0	0	0	2	0	0	0	0	0	0	0
<b>Barred Owl</b>	<i>Strix varia</i>												
	Species totals	0	1	0	14	14	26	2	4	0	13	14	28
<b>Eurasian Eagle Owl (PMP)</b>	<i>Bubo bubo</i>												
	Species totals	9	10	0	19	10	5	10	10	0	17	13	8
<b>Milky Eagle Owl</b>	<i>Bubo lacteus</i>												
	Species totals	5	4	1	4	0	0	5	5	1	6	2	0
<b>Mottled Owl</b>	<i>Ciccabba virgata</i>												
	Species totals	0	0	0	1	0	0	0	0	0	1	0	0
<b>White-faced Scops Owl</b>	<i>Otus leucotis</i>												
	Species totals	2	2	0	3	2	2	6	6	0	2	1	3
<b>Spectacled Owl (PMP)</b>	<i>Pulsatrix perspicillata</i>												
	Species totals	12	11	0	12	13	3	16	16	0	9	9	8
<b>Tawny Owl</b>	<i>Strix aluco</i>												
	Species totals	0	0	0	1	3	1	0	0	0	0	2	1
<b>Great Gray Owl</b>	<i>Strix nebulosa</i>												
	Species totals	3	3	0	0	0	0	4	4	0	0	0	2
	<b>Grand Totals Owls</b>	<b>188</b>			<b>579</b>			<b>232</b>			<b>598</b>		

Space Survey Totals		Current Exhibit	Current Education	Three year Exhibit	Three year Education
	<i><b>TAG Space Grand Totals</b></i>	<b>717</b>	<b>1410</b>	<b>1410</b>	<b>1410</b>
<i><b>Grand Totals Exhibit/Hold/Ed</b></i>		<b>2127</b>		<b>2395</b>	



Photo by: Ed Diebold; Riverbanks Zoo

**Appendix V**

**RAPTOR PROGRAM COORDINATORS, MANAGERS  
AND SPECIES CHAMPIONS  
2009**

SPECIES	SCOPE OF MANAGEMENT PROGRAM	CHAIR, MANAGER OR CHAMPION	INSTITUTION	PHONE	FAX	E-MAIL
<b>King Vulture</b> <i>Sarcoramphus papa</i>	PMP – Regional Studbook	Brian Tierney	Bronx Zoo	718-220-3471	718-733-7300	<a href="mailto:btierney@wcs.org">btierney@wcs.org</a>
<b>Andean Condor</b> <i>Vultur gryphus</i>	SSP	Michael Mace	San Diego Wild Animal Park	760-738-5078	760- 480-9574	<a href="mailto:mmace@sandiegozoo.org">mmace@sandiegozoo.org</a>
<b>Andean Condor</b> <i>Vultur gryphus</i>	North American Regional Studbook	Susie Kasielke	Los Angeles Zoo	323-644-4745	323-662-9786	<a href="mailto:susie.kasielke@lacity.org">susie.kasielke@lacity.org</a>
<b>California Condor</b> <i>Gymnogyps californianus</i>	SSP	Mike Wallace	San Diego Wild Animal Park	619-744-3313	619-744-3314	<a href="mailto:mwallace@sandiegozoo.org">mwallace@sandiegozoo.org</a>
<b>California Condor</b> <i>Gymnogyps californianus</i>	International Studbook	Michael Mace	San Diego Wild Animal Park	760-738-5078	760-480-9573	<a href="mailto:mmace@sandiegozoo.org">mmace@sandiegozoo.org</a>
<b>Eurasian Black Vulture</b> <i>Aegypius monachus</i>	SSP	Tim Snyder	Chicago Zoological Society / Brookfield Zoo	708-688-8401	708-688-7401	<a href="mailto:tim.snyder@czs.org">tim.snyder@czs.org</a>
<b>Eurasian Black Vulture</b> <i>Aegypius monachus</i>	North American Regional Studbook	Mary Jo Willis	Denver Zoo	303-376-4915	303-376-4901	<a href="mailto:mjwillis@denverzoo.org">mjwillis@denverzoo.org</a>
<b>Palm Nut Vulture</b> <i>Gypohierax angolensis</i>	DERP w/ Champion	Michael Mace	San Diego Wild Animal Park	760-738-5078	760-480-9573	<a href="mailto:mmace@sandiegozoo.org">mmace@sandiegozoo.org</a>
<b>African White-backed Vulture</b> <i>Gyps africanus</i>	PMP – Regional Studbook	Susie Kasielke	Los Angeles Zoo	323-644-4745	323-662-9786	<a href="mailto:susie.kasielke@lacity.org">susie.kasielke@lacity.org</a>
<b>Cape Griffon Vulture</b> <i>Gyps capensis</i>	PMP – Regional Studbook	Susie Kasielke	Los Angeles Zoo	323-644-4745	323-662-9786	<a href="mailto:susie.kasielke@lacity.org">susie.kasielke@lacity.org</a>
<b>Ruppell's Griffon Vulture</b> <i>Gyps rueppelli + G. r. rueppelli</i>	PMP – Regional Studbook	Bryan Emberton	Disney's Animal Kingdom	407-938-2808	407-939-6391	<a href="mailto:bryan.emberton@disney.com">bryan.emberton@disney.com</a>
<b>Hooded Vulture</b> <i>Necrosyrtes monachus</i>	New PMP – Regional Studbook	Vacant				
<b>Stellar's Sea Eagle</b> <i>Haliaeetus pelagicus + H. p. pelagicus</i>	New PMP – Regional Studbook	Vacant				
<b>Harpy Eagle</b> <i>Harpia harpyja</i>	PMP – International Studbook	Clancy Hall	San Diego Zoo	619-685-3296	619-231-0249	<a href="mailto:chall@sandiegozoo.org">chall@sandiegozoo.org</a>
<b>Ornate Hawk Eagle</b> <i>Spizaetus ornatus</i>	DERP w/ Champion	Daryl Richardson	Dallas World Aquarium	214-720-2224	214-720-2242	<a href="mailto:daryl@dwazoo.com">daryl@dwazoo.com</a>
<b>Lappet-faced Vulture</b> <i>Torgos tracheliotus</i>	PMP – Regional Studbook	Debbie Milligan	Dallas Zoo	214-670-6826	214-670-7450	<a href="mailto:ds.milligan@sbcglobal.net">ds.milligan@sbcglobal.net</a>
<b>Secretary Bird</b> <i>Sagittarius serpentarius</i>	PMP – Regional Studbook	Don Sterner	San Diego Wild Animal Park	760-738-4044 ext. 5044	760-480-9573	<a href="mailto:dsterner@sandiegozoo.org">dsterner@sandiegozoo.org</a>
<b>African Pygmy Falcon</b> <i>Pohierax semitorquatus</i>	PMP – Regional Studbook	Nicole LaGreco	San Diego Zoo	619-231-1515 ext. 4424	619-744-3355	<a href="mailto:nlagreco@sandiegozoo.org">nlagreco@sandiegozoo.org</a>

<b>Eurasian Eagle Owl</b> <i>Bubo bubo</i> + <i>B. b. bubo</i> <i>Only</i>	PMP – Regional Studbook	R. Harrison Edell	San Francisco Zoo	415-753-8194	415-681-4749	<a href="mailto:harrison@sfzoo.org">harrison@sfzoo.org</a>
<b>Milky Eagle Owl</b> <i>Bubo lacteus</i>	DERP with Species Champion	R. Harrison Edell	San Francisco Zoo	415-753-8194	415-681-4749	<a href="mailto:harrison@sfzoo.org">harrison@sfzoo.org</a>
<b>Spectacled Owl</b> <i>Pulsatrix perspicillata</i> + <i>P. p. perspicillata</i>	PMP – Regional Studbook	Steve Sarro	National Aviary	412-323-7234 ext. 211	412-321-4364	<a href="mailto:steve.sarro@aviary.org">steve.sarro@aviary.org</a>
<b>Burrowing Owl</b> <i>Athene cunicularia</i> + <i>A. c. floridana</i> + <i>A. c. hypugaea</i>	PMP – Regional Studbook	Yvonne Strode	Peoria Zoo	309-686-3365 ext. 302	309-685-6240	<a href="mailto:burrowl@att.net">burrowl@att.net</a>
<b>Snowy Owl</b> <i>Nyctea scandiaca</i>	PMP – Regional Studbook	Mike Houlihan	Bronx Zoo	516-633-5176	718-733-7300	<a href="mailto:mhoulihan@wcs.org">mhoulihan@wcs.org</a>



Photo by Munir Virani; The Peregrine Fund

**Program Review Table**

SSP Programs	Program Start Date	Manager Start Date	Last Report Submit Date	Next Report Due	Program Manager	Organization
Andean Condor SSP	01-Oct-03	31-Oct-03	10-Apr-07	10-Apr-10	Michael Mace	San Diego Zoo's Wild Animal Park
California Condor SSP	05-Oct-88	05-Oct-88	01-Sep-07	01-Sep-10	Mike Wallace	San Diego Zoo
Eurasian Black Vulture SSP	19-Aug-93	02-Jun-01	20-Feb-09	20-Feb-12	Tim Snyder	Chicago Zoological Society - Brookfield Zoo
PMP Programs	Program Start Date	Manager Start Date	Last Report Submit Date	Next Report Due	Program Manager	Organization
African White-backed Vulture PMP	15-Mar-06	15-Mar-06	PMP Completed Under Review	30-Jun-12	Susie Kasielke	Los Angeles Zoo and Botanical Gardens
Cape Griffon Vulture PMP	15-Mar-06	15-Mar-06	PMP Completed Under Review	30-Jun-12	Susie Kasielke	Los Angeles Zoo and Botanical Gardens
Hooded Vulture PMP	15-May-09		VACANT			
King Vulture PMP	10-Feb-88	25-Sep-07	On PMC Waiting List	TBD	Brian Tierney	Bronx Zoo
Lappet-faced Vulture PMP	15-Mar-06	15-Mar-06	On PMC Waiting List	TBD	Debbie Milligan	Dallas Zoo
Ruppell's Griffon Vulture PMP	15-Mar-06	15-Mar-06	15 -Nov- 09	15-Nov-11	Bryan Emberton	Disney's Animal Kingdom
African Pygmy Falcon PMP	08-Jul-96	05-Aug-08	03-Nov-06	New Manager PMP Being updated	Nicole LaGreco	San Diego Zoo
Harpy Eagle PMP	15-Mar-06	23-May-07	10-Jun-09	10-Jun-12	Clancy Hall	San Diego Zoo
Secretary Bird PMP	15-Mar-06	12-Sep-07	PMP Completed Under Review	30-Sept-12	Don Sterner	San Diego Zoo's Wild Animal Park
Stellar's Sea Eagle PMP	15-May-09		VACANT			
Burrowing Owl PMP	08-Apr-96	31-Dec-97	05-Dec-08	05-Dec-11	Yvonne Strode	Peoria Zoo
Eurasian Eagle Owl PMP	15-Mar-06	20-Mar-07	25 - Aug - 09	25-Aug-11	Harrison Edell	San Francisco Zoological Gardens
Snowy Owl PMP	15-Mar-06	12-Mar-09	New Manager PMP Being updated	12-Mar-11	Mike Houlihan	Bronx Zoo
Spectacled Owl PMP	12-Feb-92	31-Dec-92	05-Sep-08	05-Sep-11	Steve Sarro	National Aviary

Studbook Programs	Program Start Date	Manager Start Date	Last Report Submit Date	Next Report Due	Program Manager	Organization
Andean Condor Studbook	31-Dec-88	26-Mar-92	13-Jan-09	13-Jan-12	Susie Kasielke	Los Angeles Zoo and Botanical Gardens
California Condor Studbook	05-Oct-88	16-Jun-98	05-Oct-07	05-Oct-10	Michael Mace	San Diego Zoo's Wild Animal Park
Eurasian Black Vulture Studbook	07-Jul-89	12-Oct-00	23-Jul-07	23-Jul-10	Mary Jo Willis	Denver Zoological Gardens
African White-backed Vulture Studbook	15-Mar-06	15-Mar-06	05-Jan-08	05-Jan-11	Susie Kasielke	Los Angeles Zoo and Botanical Gardens
Cape Griffon Vulture Studbook	15-Mar-06	15-Mar-06	05-Jan-08	05-Jan-11	Susie Kasielke	Los Angeles Zoo and Botanical Gardens
Hooded Vulture Studbook	15-May-09		VACANT			
King Vulture Studbook	10-Feb-88	25-Sep-07	01-Sep-96	30-Nov-09	Brian Tierney	Bronx Zoo
Lappet-faced Vulture Studbook	15-Mar-06	15-Mar-06	31-Dec-08	31-Dec-11	Debbie Milligan	Dallas Zoo
Ruppell's Griffon Vulture Studbook	15-Mar-06	15-Mar-06	31-Dec-08	31-Dec-11	Bryan Emberton	Disney's Animal Kingdom
African Pygmy Falcon Studbook	08-Jul-96	05-Aug-08	02-Oct-06	New Keeper Studbook Being updated	Nicole LaGreco	San Diego Zoo
Harpy Eagle Studbook	15-Mar-06	23-May-07	14-Jan-08	14-Jan-11	Clancy Hall	San Diego Zoo
Secretary Bird Studbook	15-Mar-06	12-Sep-07	Currently Under Review	12-Sept-12	Don Sterner	San Diego Zoo's Wild Animal Park
Stellar's Sea Eagle Studbook	15-May-09		VACANT			
Burrowing Owl Studbook	08-Apr-96	31-Dec-97	23-Dec-08	23-Dec-11	Yvonne Strode	Peoria Zoo
Eurasian Eagle Owl Studbook	15-Mar-06	20-Mar-07	05-Jan-09	05-Jan-12	Harrison Edell	San Francisco Zoological Gardens
Snowy Owl Studbook	15-Mar-06	12-Mar-09	09-Apr-08	09-Apr-11	Mike Houlihan	Bronx Zoo
Spectacled Owl Studbook	12-Feb-92	31-Dec-92	08-Aug-08	08-Aug-11	Steve Sarro	National Aviary



**Appendix VII**

**PROGRAM SPECIES ROLES**

To assist with understanding the role that raptors play in our programs here is a brief look at what each of our program species has to offer. This is not an all inclusive list and reflects the TAG’s belief in making sure that every species we work with has an education component that can be used to raise awareness for the group.

<b>SPECIES</b>	<b>Conservation Function</b>	<b>Education Function</b>	<b>Research Function</b>
<b>King Vulture</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education	
<b>Andean Condor</b>	Genetic reservoir for Colombian reintroduction program.  AZA population genetically and demographically stable	In-situ and ex-situ conservation and education	In-situ research
<b>California Condor</b>	Genetic reservoir for North American reintroduction program.	In-situ conservation and education	
<b>Eurasian Black Vulture</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education	Artificial insemination study
<b>Palm Nut Vulture</b>		Ex-situ conservation and education	vulture nutrition research (cholesterol/lipid levels) to determine normal ranges
<b>African White-backed Vulture</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education	
<b>Cape Griffon Vulture</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education	
<b>Ruppell’s Griffon Vulture</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education	
<b>Hooded Vulture</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education Interesting adaptability story	
<b>Stellar’s Sea Eagle</b>		Ex-situ conservation and education	

<b>Harpy Eagle</b>	Ensure AZA population is genetically and demographically stable	In-situ and ex-situ conservation and education	
<b>Ornate Hawk Eagle</b>		Ex-situ conservation and education	
<b>Lappet-faced Vulture</b>	Ensure AZA population is genetically and demographically stable	In-situ and ex-situ conservation and education	
<b>Secretary Bird</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education	Ex-situ research
<b>African Pygmy Falcon</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education	
<b>Eurasian Eagle Owl</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education	
<b>Spectacled Owl</b>	Ensure AZA population is genetically and demographically stable	Ex-situ conservation and education	
<b>Burrowing Owl</b>	Ensure AZA population is genetically and demographically stable	In-situ and ex-situ conservation and education	
<b>Snowy Owl</b>	Ensure AZA population is genetically and demographically stable	In-situ and ex-situ conservation and education	



Photo by Steve Martin; Natural Encounters Inc.

# Target Population Size Evaluations for the Raptor Taxon Advisory Group



## PMC/SPMAG ADVISORS

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Anne Oiler, Population Management Center, Lincoln Park Zoo

May 2009

This report was prepared with assistance from the

**PMC**

Population Management Center

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Lincoln Park  
Zoo

ASSOCIATION  
OF ZOOS &  
AQUARIUMS

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Eurasian Black Vulture	<i>Aegypius monachus</i>	<u>48</u>
California Condor	<i>Gymnogyps californianus</i>	50
Andean Condor	<i>Vultur gryphus</i>	52
Burrowing Owl	<i>Athene cunucularia</i>	<u>54</u>
Spectacled Owl	<i>Pulsatrix perspicillata</i>	<u>56</u>
Eurasian Eagle Owl	<i>Bubo bubo</i>	<u>58</u>
Milky Eagle Owl	<i>Bubo lacteus</i>	60
Snowy Owl	<i>Nyctea sandiaca</i>	62
African Pygmy Falcon	<i>Polihierax semitorquatus</i>	<u>64</u>
Secretary Bird	<i>Sagittarius serpentarius</i>	<u>66</u>
Harpy Eagle	<i>Harpia harpyja</i>	<u>68</u>
King Vulture	<i>Sarcorhamphus papa</i>	70
African White-backed Vulture	<i>Gyps africanus</i>	72
Cape Griffon Vulture	<i>Gyps coprotheres</i>	<u>74</u>
Ruppell's Griffon Vulture	<i>Gyps rueppelli</i>	<u>76</u>
Lappet-faces Vulture	<i>Torgos tracheliotus</i>	<u>78</u>

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## Acknowledgments

This report details the results of a meeting held at the Lincoln Park Zoo, Chicago, IL on 21-22 May 2009.

In attendance were:

Scott Tidmus, Disney's Animal Kingdom (Raptor TAG Chair)  
Colleen Lynch, Curator of Birds, Lincoln Park Zoo  
Sarah Long, Population Management Center, Lincoln Park Zoo  
Kristine Schad, Population Management Center, Lincoln Park Zoo  
Cara Groome, Population Management Center, Lincoln Park Zoo  
Anne Oiler, Population Management Center, Lincoln Park Zoo

Attendees who joined the meeting by phone:

Steve Sarro, National Aviary (Spectacled Owl PMP Population Manager)  
Mike Houlihan, Bronx Zoo (Snowy Owl PMP Population Manager)

Report and Analyses prepared by:  
Sarah Long, Kristine Schad, Cara Groome, & Anne Oiler  
Population Biologists  
Population Management Center

**This report was prepared and distributed with the assistance of the Population Management Center.**  
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## Executive Summary

**Objective:** To assist the Raptor Taxon Advisory Group with the evaluation of target population sizes in the current draft of the Raptor TAG's Regional Collection Plan.

**Methods:** This is the second evaluation of target sizes for this TAG by the Population Management Center; previous evaluations were performed in 2004 at Lincoln Park Zoo. To evaluate potential management strategies for species that are current or proposed Population Management Plan species (PMPs) or Species Survival Plans<sup>®</sup> (SSPs), demographic and genetic analyses were conducted using the most current available studbook data and the Goal Setting screen of Population Management 2000 software (PM2000 Version 1.213). The current population size and baseline genetic analyses for each species were obtained from the population studbook or ISIS data as noted, for AZA institutions only unless otherwise stated. In additional modeling scenarios, adjustments to other demographic parameters, such as growth rate, were made based on studbook data of the species in question, similar species, or the expertise of meeting attendants.

Where noted, the number of founders that could reasonably be obtained was added into the projections to determine the impact on the maintenance of gene diversity. A potential founder is considered to be any animal that is unrelated to individuals in the current population, and may be obtained from other managed populations or from the wild. Although the importation of founders is considered in some of the management strategies evaluated, every effort should be made to create self-sustaining populations not reliant on imports. Frequent importations should not be viewed as an alternative strategy to responsible population management for the maintenance of gene diversity over time.

**Management Goals:** For each species, several different strategies were tested to evaluate population sizes relative to genetic and demographic sustainability over the next 100 years. The first strategy listed in the table for each species is a baseline strategy, demonstrating the projected status of the population assuming no changes to current management or population parameters and using either the population's current size or the estimated current maximum holding capacity from the TAG's 2009 space survey. Other strategies tested include changes to population parameters, including growth rate and effective population size, or the recruitment or acquisition of potential founders.

The target size analyses within this document are based primarily on *genetic* projections, with the assumption that husbandry and cooperation will be adequate for the populations to grow to the target sizes tested. The genetic goal for all populations was the maintenance of 90% gene diversity for 100 years into the future or, if starting gene diversity was unknown or already lower than 90%, long-term management goals are assumed to be the loss of no more than 10% gene diversity relative to the starting gene diversity. When gene diversity falls below approximately 90% of the gene diversity in the founding population, it is expected that reproduction will be increasingly compromised by, among other factors, smaller clutch sizes, lower hatch weights, and greater chick mortality.

## Definitions and Explanation of Tables

Demography & Genetics								
Number of holding institutions	$N_0$	Estimated future holding capacity	T	Historic & Projected $\lambda$	$GD_0$	$N_e/N$	% known before assumptions	% known after assumptions

Number of institutions

*This is the number of AZA institutions currently holding specimens of a given species, unless otherwise specified.*

$N_0$  – Current population size

*This is the current number of specimens estimated to be living in participating institutions, according to the most current studbook.*

Estimated holding capacity

*This is the estimated future holding capacity estimated from the 2009 TAG space survey sent to AZA institutions.*

T – Generation time

*This represents the average age at reproduction (from first reproduction through to last reproduction), in years.*

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth)

*This represents the annual rate of increase of the population, as determined by demographic analysis of historic studbook data within the date range of modern management, or comparison with a similar species.*

$GD_0$  – Estimated current gene diversity of AZA population (%)

*Gene diversity was calculated by genetic analysis of true or analytical studbook data. When studbook data was insufficient, a benchmark gene diversity (90%) was used as a starting point to measure loss of GD over time. The proportional gene diversity (as a proportion of the source population) is the probability that two alleles from the same locus sampled at random from the population will not be identical by descent.*

$N_e/N$  – Ratio of effective population size to actual population size.

*This ratio represents the approximate proportion of the population that is breeding, calculated from the number of living animals with living offspring in the population.*

% Known – Percentage of pedigree known (before and after assumptions and exclusions).

*This is the proportion of the pedigree of living specimens descended from known or wild-caught ancestors. If pedigree assumptions were made or if unknown pedigree animals were excluded from the genetic analyses, the percentage known before and after these assumptions/exclusions is noted.*

*The following table is an example of different projection strategies used for each population to evaluate whether the current population will be able to meet the standard AZA program goal of 90% gene diversity for at least 100 years.*

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)
A. Baseline				
<i>Strategy A evaluates the genetic status of the population in 100 years under current conditions (historic average annual growth rate, current GD, current <math>N_e/N</math>). This strategy assumes that no founders will be imported. The tested target population size was the number set as the maximum allowable population size on the PM2000 Goals Screen, and was generally the estimated current maximum holding capacity from the TAG's space survey.</i>				
B. Increase lambda or $N_e/N$				
C. Increase target population size tested				
<i>Additional strategies evaluate the genetic status of the population in 100 years with an improvement to population parameters (average annual growth rate, <math>N_e/N</math>) or an increase in the tested target size (set to either the estimated future holding capacity from the TAG's space survey or some larger population size).</i>				
D. Import reasonable # founders				
<i>Other additional strategies evaluate the genetic status of the population based on previous improvements with the addition of a realistic number of founders, based on meeting attendees' expertise, with imports scheduled as described.</i>				

# Eurasian Black Vulture

## *Aegypius monachus*

**Proposed program status:** SSP

Projections for this population were based on the Regional Eurasian Black Vulture Studbook (current to 25 May 2007, from studbook keeper Mary Jo Willis, Denver Zoological Gardens and updated by the PMC). Genetic data exports were based on the AZA population. One bird was excluded from the breeding population and the genetic analyses in accordance with the most recent February 2009 plan. Demographic exports were based on AZA data from 1 January 1970 – 21 May 2009 (also based on most recent 2009 SSP).

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr holding capacity	T	Historic & Projected			% known before assumptions/ exclusions	% known after assumptions/ exclusions
						$\lambda$	GD (%)	$N_e/N$		
AZA	25	48 (20.28)	47	70	20.2	1.01	93.4	0.25	100	100
Variables used in projections						1.02		0.30		

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.01$ , $N_e/N = 0.25$ and $Kt = 47$ )	75	16	53	47	N/A
B. Increase $\lambda$ to 1.02, increase $N_e/N$ to 0.30, increase $Kt$ to 70	82	25	93	70	N/A
C. Acquire additional founders from Europe at a rate of 2 every 10 years. $\lambda = 1.02$ , $N_e/N = 0.30$ , $Kt = 70$	89	52	159	70	N/A

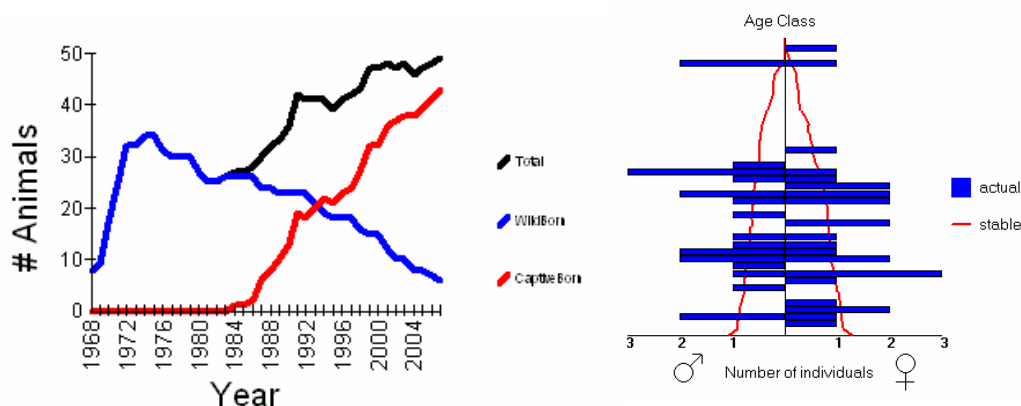
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## Eurasian Black Vulture *Aegypius monachus* (continued)

**Demographic Summary:** This population has exhibited a historically positive growth rate (Figure 1), producing a sufficient number of hatches each year to offset deaths. First-year mortality is relatively low at 22-25% for females and males. Over the past five years, annual hatches have ranged from 1 – 4 per year. The age structure of the population deviates from a stable distribution as a series of short periods of high production are interspersed by short periods of low production (Figure 2). Such inconsistencies in annual growth rates often result in difficulty predicting future population growth rates as the number of individuals entering and leaving reproductive age classes vary from year to year. In the Eurasian Black vulture this effect should be mitigated by a long reproductive span but efforts should be made to stabilize the age distribution in the interest of easing future management.

- Approximately 3 hatches per year are required to keep this population at its current size ( $\lambda = 1.00$ ).
- Approximately 4 hatches per year would grow the population to 70 over about 18 years ( $\lambda = 1.02$ ).
- The SSP should continue to focus on husbandry improvements to increase successful hatching and raising of offspring.



**Genetic Summary:** This population has a relatively high starting gene diversity (93.4%) derived from 14 founders. The effective population size, or proportion of breeding individuals in the population, is moderate ( $Ne/N = 0.25$ ) but may increase towards 0.30 as husbandry and breeding success improves.

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). Improving the  $Ne/N$  ratio, increasing the target population size, and increasing the growth rate will help retain gene diversity for longer; the population will still not reach standard long term genetic goals but will not lose more than 10% of its current GD (Scenario B). The SSP is working with European zoos to potentially swap birds between regions. With improvements of population parameters in addition to adding founders from Europe, this population could most likely meet long term genetic goals (Scenario C).

The following strategies will help this population to retain gene diversity for a longer period of time:

- Increase the target population size
- Increase the population growth rate to fill the future capacity
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Increase the effective size ( $Ne/N$ ) towards 0.30
- Add founders if possible

# California Condor

## *Gymnogyps californianus*

**Proposed program status:** SSP

Projections for this population were based on the International California Condor Studbook (current to 18 December 2008, from studbook keeper Michael Mace, San Diego Zoo's Wild Animal Park). Genetic data exports were based on the AZA population. Demographic exports were based on AZA data from 1 January 1985 – 21 May 2009. The population was 100% known. Four birds were excluded from the breeding population.

For more information, please consult the California Condor SSP Management Plan. Generation time was extended to 20 years better reflect the reproductive span of this long-lived species. The shorter generation time determined in the analysis (12.4) was assumed to be due to breeders being released in the midst of their breeding career.

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Target size	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	4	77 (38.39)	73	150	12.4	1.15	94.4	0.46	100	100

Variables used in projections: 73, 150, 20

N – Current population size in AZA facilities

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.15$ , $N_e/N = 0.46$ and $Kt =$ current population size after exclusions, 73)	84	38	95	73	197
B. Increase generation time to 20 years, $\lambda=1.15$ , $N_e/N = 0.46$	88	62	154	73	117
C. Increase to target size set by USFWS ( $Kt = 150$ ), generation time = 20, $\lambda=1.15$ , $N_e/N = 0.46$	>90	127	> 200	150	117

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## California Condor *Gymnogyps californianus* (continued)

**Demographic Summary:** This population has exhibited a very high growth rate historically (1985 – 2009), with an average lambda = 1.14 (Figure 1). The population is able to successfully produce a sufficient number of hatches each year to offset deaths and to produce birds for release. The large number of releases is seen in the age pyramid (Figure 2), where there it has left a large gap in the younger age classes. The youngest age class contains a large number of chicks. It should be ensured that enough of these chicks be retained in the captive population as future breeders.

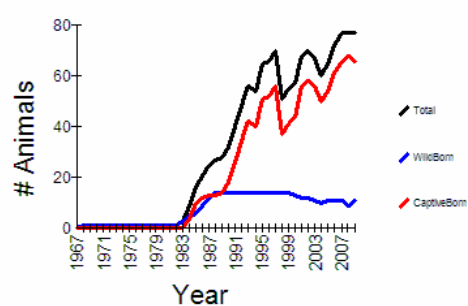


Figure 1. Population census of the AZA California condor population from 1985 to present.

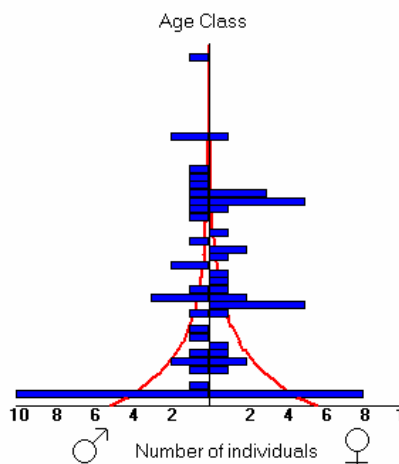


Figure 2. Age structure of the AZA California condor breeding population showing classes 0 – 43.

**Genetic Summary:** This population has a relatively high starting gene diversity (94.39%) derived from 14 founders. The effective population size, or proportion of breeding individuals in the population is very high ( $N_e/N = 0.4641$ ), perhaps because there are no space restrictions for the population as birds are being bred for release.

Projections indicate that under current population parameters with an estimated generation length of 20, the population can meet standard genetic goals of 90% GD for 100 years with a population size of 117 (Scenario C). With a target size of 150, 90% GD can be retained for 127 years. These favorable results are due in part to the high effective size and the high growth rate, and once this effective management is continued into the future, the population will remain strong genetically.

The following strategies will help this population to retain gene diversity for a longer period of time:

- Increase the captive population to meet its target population size plus the numbers required for release
- Maintain the population growth at the current rate
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Maintain the effective size ( $N_e/N$ ) at the current level

# Andean Condor

## *Vultur gryphus*

**Proposed program status:** SSP

Projections for this population were based on an analytical version (based on 2007 SSP) of the Andean Condor Studbook (current to 1 Jan 2009, from studbook keeper Susie Kasielke, Los Angeles Zoo and Botanical Gardens with updates by the PMC). Assumptions had been developed by the PMC for PMP planning (most recently, April 2007). Genetic data exports were based on the AZA population, with exclusions based on the 2007 SSP. Demographic exports were based on AZA data from 1 January 1960 – 21 May 2009 (based on the 2007 SSP). Seven birds were excluded due to their advanced age or their participation in education programs.

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	38	78 (35.42.1)	70	85	25.3	1.032	97.6	0.31	67.5	100
Variables used in projections			70, 85			1.03				

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.31$ and $K_t =$ current population size after exclusions, 70)	89	86	123	70	N/A
B. Increase growth rate to $\lambda = 1.03$ , increase $K_t$ to 85	> 90	104	134	85	81

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## Andean Condor *Vultur gryphus* (continued)

**Demographic Summary:** The population first appeared in 1908 but the population remained in the single digits until the 1950s. It wasn't until the late 1970s that captive propagation became a significant source of recruitment to the captive population; prior to that time the population was sustained primarily by frequent small import events. The population has been maintained at approximately its current size since 1988 with annual growth rates fluctuating between 0.96 and 1.03. Over the past 5 years, annual hatches have ranged from 1–3 per year.

The age structure of the population deviates from a stable distribution; a series of periods of higher recruitment are interspersed by short periods of lower recruitment, as breeding slowed and as birds left the population for reintroduction (Figure 2) resulting in a number of empty or relatively small age classes. The distribution also illustrates the lower annual growth rates in the past decade in comparison to earlier decades as population growth has been mitigated due to space constraints. In the Andean condor this effect may be mitigated by a long reproductive span but efforts should be made to stabilize the age distribution in the interest of easing future management.

- Approximately 2–3 hatches per year are required to keep this population at its current size ( $\lambda = 1.00$ ).
- Approximately 4 hatches per year would be required for the population to grow to the estimated holding capacity of 85 in three years ( $\lambda = 1.03$ ).

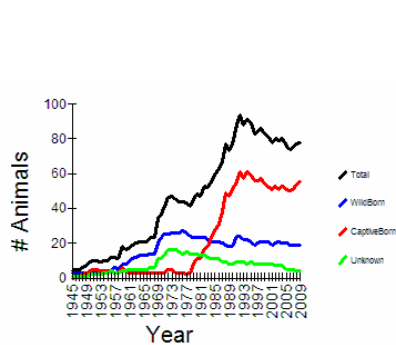


Figure 1. Population census of the AZA Andean condor population from 1945 to present.

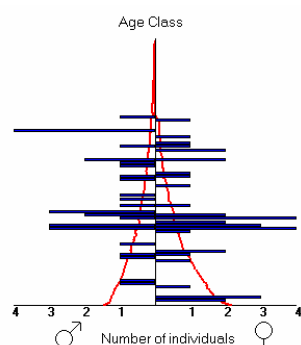


Figure 2. Age structure of the AZA Andean condor breeding population showing classes 0 – 57.

**Genetic Summary:** This population has a high starting gene diversity (97.56%) derived from a large founder base (36 founders). The effective population size, or proportion of breeding individuals in the population, is good ( $N_e/N = 0.3142$ ).

Projections indicate that under current population parameters, this population will probably meet standard genetic goals of 90% GD for 100 years even if its current population size remains stable (Scenario A). Increasing the growth rate and the target population size slightly will allow the population to easily meet long term genetic goals (Scenario B). Additional founders may be available for this population from rehabilitation situations, but founders are not needed to meet long term genetic goals.

The following strategies will help this population to retain gene diversity for a longer period of time:

- Increase the target population size
- Increase the population growth rate to fill the future capacity
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)

## Burrowing Owl *Athene cunicularia*

**Proposed program status:** PMP

Projections for this population were based on an analytical version of the Regional Burrowing Owl Studbook (current to 1 August 2008, studbook keeper Yvonne Strode, Glen Oak Zoo). Assumptions, genetic data exports, and exclusions were based on the data and population as described in the most recent PMP plan (December 2008). Demographic exports were based on North American data from 1 January 1970 – 21 May 2009 (based on the 2008 PMP).

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	38	84 (41.37.6)	--	100	--	--	--	--	--	--
Non-AZA	8	36 (19.13.4)	--	70 (est.)	--	--	--	--	--	--
Variables used in projections	46	120	73	120, 170	4.7	1.025	92	0.10, 0.20	60.4	100

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair. A second target size was used to show additional space that may be available outside of AZA zoos.

T – Generation time (years)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.10$ and $Kt =$ current population size after exclusions, 73)	20	0	6	73 / 120	N/A
B. Increase $N_e/N$ to 0.20 (by increasing # and proportion of breeding animals), increase $\lambda = 1.025$ , increase $Kt$ to 3 yr capacity minus exclusions (123)	57	2	18	123 / 170	N/A
C. Acquire 4 founders every 5 years ( $N_e/N = 0.20$ , $\lambda = 1.025$ , $Kt = 123$ )	89	2	120	123 / 170	135 / 185

[Continued on following page]

## Burrowing Owl *Athene cunicularia* (continued)

**Demographic Summary:** Historically, this population has exhibited a positive growth rate due to both zoo hatches and acquisitions of birds from rehabilitation situations (Figure 1). First-year mortality is relatively low at 25% for males and 24% for females. Over the past 10 years the population growth rate in North America has been 0.985. The age distribution of the potentially breeding population (Figure 2) has a stable distribution with an even sex ratio.

- Approximately 19 hatches or acquisitions per year are required to keep this population at its current size of 120 ( $\lambda = 1.00$ ).
- Approximately 27 – 33 hatches or acquisitions per year are required to grow this population from 73 to 123 (new 3 yr population size minus 47 exclusions).

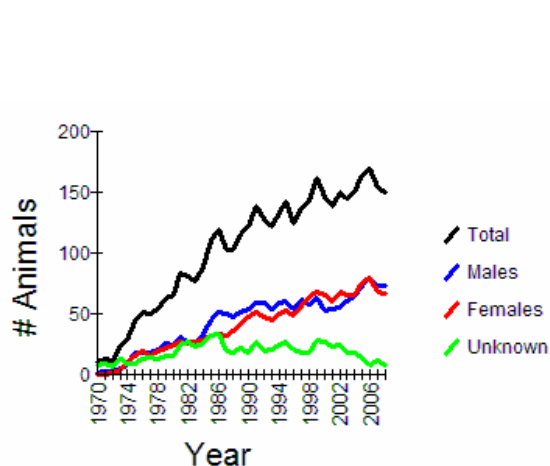


Figure 1. Population census of the North American burrowing owl population from 1970 to present.

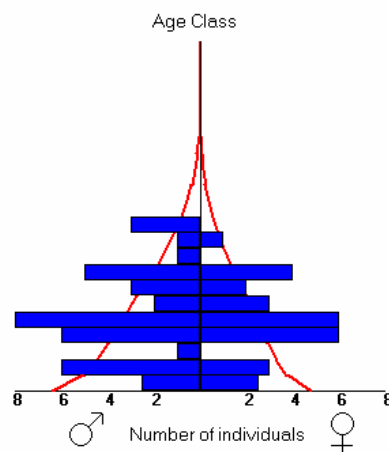


Figure 2. Age structure of the North American burrowing owl population, after exclusions, showing age classes 0 – 10.

**Genetic Summary:** This population has a relatively high starting gene diversity (92.15%) derived from founder base (13 founders). Twelve additional potential founders exist in the population. The effective population size, or proportion of breeding individuals in the population, is moderate ( $N_e/N = 0.1027$ ). Many birds are held as exhibit only or education purposes, so it may be difficult to significantly increase the  $N_e/N$ .

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). Improving the  $N_e/N$  ratio, increasing the target population size, and improving the growth rate will help retain gene diversity for longer but the population will still not reach standard long term genetic goals (Scenario B). Founders are available to this population from rehab situations. By improving population parameters as well as adding founders, this population would likely meet long term genetic goals with a target size of 170 (Scenario C).

The following strategies will help this population to retain gene diversity for a longer period of time:

- Increase the target population size
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Increase the effective size ( $N_e/N$ ) towards 0.30
- Add founders, if possible

# Spectacled Owl

## *Pulsatrix perspicillata*

Proposed program status: PMP

Projections for this population were based on analyses from the analytical Regional Spectacled Owl Studbook (current to 1 February 2008 and maintained by Studbook Keeper Steve Sarro, National Aviary). Assumptions had been developed by the PMC for PMP planning (most recently, September 2008). Genetic data exports and exclusions were based on the population as described in the 2008 PMP report (includes some non-AZA facilities). Census exports were for AZA. Demographic exports were based on AZA data from 1 January 1980 – 21 May 2009 (based on most recent 2008 PMP).

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	Historic & Projected T	$\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	36	71 (33.27.11)	--	70		1.089	--	--	36.8	
Non-AZA	2	2 (2.0.0)	--	--			--	--		
Variables used in projections	38	73	62	70	8.3	1.03	91.7	0.40		100

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.40$ and $Kt =$ current population size after exclusions, 62)	72	6	44	62 / 70	N/A
B. Increase target size by 15 ( $Kt = 62$ after exclusions + 15 = 77), increase $\lambda$ to 1.03	75	7	54	77 / 85	N/A
C. Add 2 founders every 10 years, $Kt = 77$ , $\lambda = 1.03$ , increase starting GD to 92.24 to simulate 2 potential founders producing 2 offspring.	86	13	117	77 / 85	174

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## Spectacled Owl *Pulsatrix perspicillata* (continued)

**Demographic Summary:** This population has exhibited a historically positive growth rate of 8 - 9% ( $\lambda = 1.089$ ), but appears to have reached a plateau in the past decade and slowed to a growth rate of about 0% (Figure 1). Throughout the history of the population, there have also been periodic acquisitions from the private sector. Over the past five years, annual hatches have averaged 5 per year.

The age structure of this population is unstable, with too few juveniles to securely enable future reproduction (Figure 2). However, at least half of the population is still of reproductive age so with increased breeding this age structure can be improved. This population should continue to breed regularly to offset deaths and to keep the reproductive and pre-reproductive age classes full.

- Approximately 2 – 4 hatches per year are required to offset deaths and keep this population at its current size ( $\lambda = 1.00$ ).

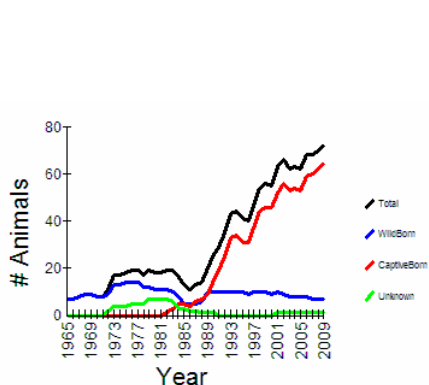


Figure 1. Population census of the AZA spectacled owl population from 1965 to present.

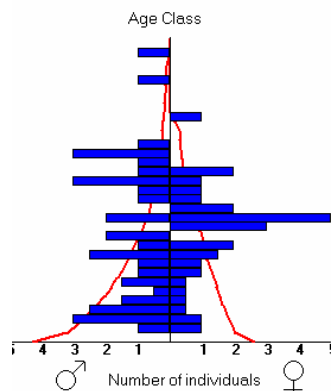


Figure 2. Age structure of the AZA spectacled owl breeding population showing classes 0 – 31.

**Genetic Summary:** This population has a starting gene diversity of 91.7% derived from a base of 13 founders. Two potential founders remain in the population. The effective population size, or proportion of breeding individuals in the population, is relatively high ( $N_e/N = 0.3974$ ).

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). Increasing the target population size slightly and increasing the growth rate will help retain gene diversity for longer but the population will still not reach standard long term genetic goals (Scenarios B). There is a slight possibility of obtaining additional founders in from privates or from Europe. By improving these population parameters as well as adding founders, this population could probably meet long-term genetic goals (Scenario C).

The following strategies will help this population to retain gene diversity for a longer period of time:

- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Increase target size and add founders if possible

# Eurasian Eagle-owl

## *Bubo bubo*

Proposed program status: PMP

Projections for this population were based on the analytical version of the Regional Eurasian Eagle Owl Studbook (current to 26 July 2008 and maintained by Studbook Keeper Harrison Edell, San Francisco Zoological Gardens). Extensive pedigree assumptions were developed by the PMC for a PMP planning meeting prior to the TAG meeting. Genetic data exports and exclusions (of primarily education birds) were based the PMP population (AZA plus 3 non-AZA facilities). Demographic exports were based on North American data from 1 January 1970 – 21 May 2009 (based on 2009 PMP).

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	30	48 (19,21.8)	--	70	--	1.08	--	--	--	--
Non-AZA	4	4 (4.0.0)	--	--	--	--	--	--	--	--
Variables used in projections	34	52	32	70	11.3	1.03	92.3	0.083, 0.20	0	85.7

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size (estimated)

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.08$ and $Kt =$ current population size after exclusions, 32)	13	0	4	32 / 52	N/A
B. Increase target size by 18 spaces, increase growth rate to 1.03, increase $N_e/N$ to 0.20 (by increasing # and proportion of breeding animals)	57	3	18	50 / 70	N/A
C. Increase target size by 38 spaces ( $\lambda = 1.03$ , $N_e/N = 0.20$ )	64	3	18	70 / 90	N/A
D. Add 4 founders from Europe in a one-time import event (ncrease target size by 18 spaces, $\lambda = 1.03$ , $N_e/N = 0.20$ )	59	3	23	50 / 70	N/A

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## Eurasian Eagle-owl Bubo bubo (continued)

**Demographic Summary:** Despite more than three decades holding history in zoos, demographic data for this population is based on small sample sizes ( $N < 45$ ) and partial records due to birds coming in and out of the private sector. This population has exhibited a historically healthy growth rate (Figure 1), producing a sufficient number of hatches each year to offset deaths. Over the past five years, annual hatches have ranged from 0 – 4 per year. The age pyramid appears stable, with many individuals in the juvenile and reproductive age classes and an even sex ratio (Figure 2), but many birds are in education programs and not available to the breeding program.

- Approximately 1 - 2 hatches per year are required to keep this population at its current size ( $\lambda = 1.00$ ).
- Approximately 3 hatches per year would allow the population to grow the estimated holding capacity of 70 in 10 years ( $\lambda = 1.046$ ).
  - 6 breeding pairs have recommended in the first breeding plan for this PMP. As husbandry and cooperation improves, the growth rate may be increased.

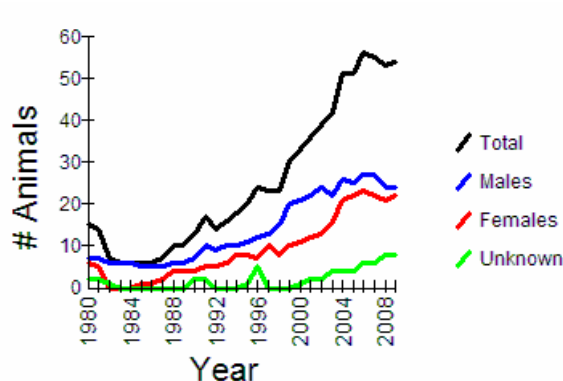


Figure 1. Population census of the AZA Eurasian eagle-owl population from 1980 to present.

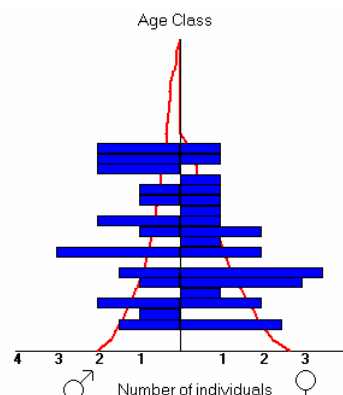


Figure 2. Age structure of the AZA Eurasian eagle-owl population showing classes 0 – 19.

**Genetic Summary:** This population has a gene diversity of 92.57% derived from 18 founders; two potential founders exist in the population. The effective population size, or proportion of breeding individuals in the population, is quite low ( $N_e/N = 0.083$ ), reflecting the fact that many birds are in education programs and unavailable to the breeding program.

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). Improving the  $N_e/N$  ratio, increasing the target population size, and increasing the growth rate will help retain gene diversity for longer but the population will still not reach standard long term genetic goals (Scenario B). By improving these population parameters as well as adding founders, this population will still be shy of standard long term genetic goals (Scenarios D).

The following strategies will help this population to retain gene diversity for a longer period of time:

- Increase the target population size
- Increase the population growth rate to fill the future capacity
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Increase the effective size ( $N_e/N$ ) towards 0.30
- Add founders if possible

# Milky Eagle-owl *Bubo lacteus*

**Proposed program status:** DERP → PMP?

Projections for this population were based on an analytical version of the Regional Milky Eagle Owl Studbook (current to 11 March 2009, by Studbook Keeper Harrison Edell, San Francisco Zoological Gardens). This population was examined as a potential upgrade to a PMP. However, after analysis the TAG decided to keep this program as a DERP for now. The population may be reconsidered for an upgrade in the next RCP process.

Genetic data exports for the living population were based the North American population. Demographic exports were based on North American data (with no date restrictions). Data were altered by changing #21 from male to an unknown sex individual for our analysis. The Studbook Keeper is working on verifying this change, due to the recent re-identification as female. An analytical overlay making pedigree assumptions for those birds with unknown parentage was created for this analysis.

## Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated holding capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/ exclusions	% known after assumptions/ exclusions
AZA	4	12 (8,4.0)	12	20	9.7	1.1	79.25	0.22	45.5	100
Variables used in projections	--	--	--	20, 50	--	--	--	0.3	--	--

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair and Population Manager.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda = 1.1$ , $K_t = 20$ )	21.97	n/a	6	20	Not possible
B. Increase $N_e/N = 0.3$	31.42	n/a	10	20	Not possible
C. Increase $N_e/N = 0.3$ , increase $K_t = 50$	51.75	n/a	13	50	Not possible
D. Increase $K_t = 50$ , $N_e/N = 0.3$ , add 2 founders from Europe in 5 years	55.11	n/a	31	50	Not possible

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## Milky Eagle-owl *Bubo lacteus* (continued)

**Demographic Summary:** Despite having been exhibited in zoos for nearly 70 years this population has never exceeded more than twelve birds. The historic growth rate is positive (Figure 1), but with a small sample size any change will have significant effects on this value. Over the past five years, annual hatches have ranged from 0-2 per year. The age pyramid appears unstable, with many empty age classes and a male sex bias (Figure 2).

- Approximately 1 hatch per year is required to keep this population at its current size ( $\lambda = 1.00$ ).
- Approximately 2 hatches per year would be required for the population to grow the estimated holding capacity of 20 in five years ( $\lambda = 1.11$ ).

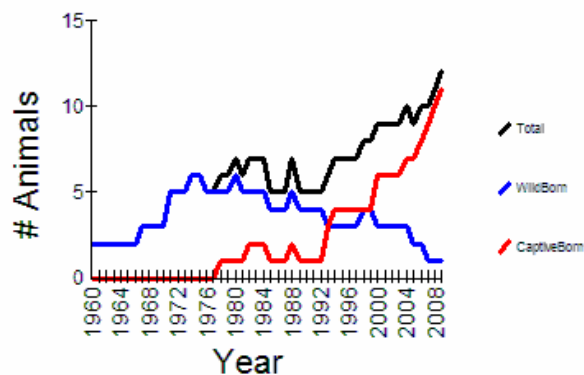


Figure 1. Population census of the AZA milky eagle-owl population from 1960 to present.

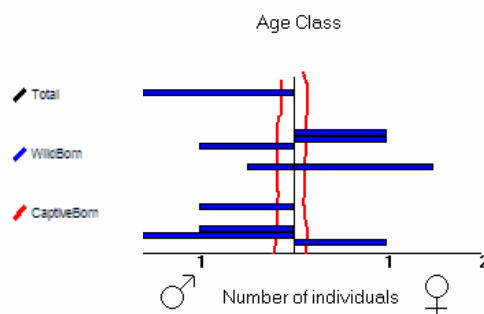


Figure 2. Age structure of the AZA milky eagle-owl population showing classes 0 – 23.

**Genetic Summary:** This population has a gene diversity of 79.3% derived from five founders; one additional potential founder remains in the population. The effective population size, or proportion of breeding individuals in the population, is moderate ( $N_e/N = 0.22$ ).

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). Improving the  $N_e/N$  ratio, increasing the target population size, and improving the growth rate will help retain gene diversity for longer but the population will still not reach standard long term genetic goals (Scenarios B & C). Even with improving these population parameters as well as adding founders, this population will not meet standard long term genetic goals (Scenarios D).

**Due to this population's poor demographic history and a lack of sufficient interest from zoos, the TAG has decided to *not* upgrade this program to a PMP at this time. The population may be reconsidered for PMP management in the next RCP.**

# Snowy Owl

## *Nyctea sandiaca*

Proposed program status: PMP

Projections for this population were based on an analytical version of the Regional Snowy Owl Studbook (current to 26 March 2008 and maintained by Studbook Keeper Mike Houlihan, Bronx Zoo) and an ISIS download from the 31 December 2008 ISIS DVD. Preliminary assumptions were developed by the PMC for the purposes of these TAG analyses. Genetic data exports were based on the AZA population in the studbook. Demographic exports were based on North American data from 1 January 1978 – 21 May 2009 in the ISIS download. Studbook overview/footnote information was blank, so an incubation period of 28 days and maximum hatch date range of six days were added by the PMC. Demographic data appears to be lacking for this population, not representing the full extent of breeding that occurred in the population's history (studbook contains data for only the living population and their ancestors and is therefore missing data since the West Nile virus die off starting in 2000).

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated holding capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	18	30 (13.15.2)	--	--	--	--	--	--	--	--
Non-AZA	7	15 (8.7.0)	--	--	--	--	--	--	--	--
Variables used in projections	25	45	--	150	11	0.971, 1.00, 1.02	93.55	0.082	59.1	70.7

N – Current population size according to studbook data

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.08$ and $Kt =$ current population size after exclusions, 45)	24	1	7	45	Not possible
B. Increase target size to 80, increase $\lambda$ to 1.03, increase $N_e/N = 0.20$	68	7	33	80	Not possible
C. Increase target size to 150, increase $\lambda$ to 1.03, increase $N_e/N = 0.20$	75	7	37	150	Not possible
D. Increase target size to 150, increase $\lambda$ to 1.03, increase $N_e/N = 0.30$	81	12	76	150	Not possible
E. Increase target size to 150, increase $\lambda$ to 1.03, increase $N_e/N = 0.30$ ; Import 2 founder birds every 10 years for 100 years (possible through rehabilitation facilities)	89	19	171	150	189
F. Increase target size to 150, increase $\lambda$ to 1.03, increase $N_e/N = 0.30$ ; Import 4 founder birds every 10 years for 100 years	90	> 100	> 100	150	87

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# Snowy Owl *Nyctea sandiaca* (continued)

**Demographic Summary:** Studbook data are lacking for this population, by not representing the full extent of breeding that occurred in the population's history. Absent historical data in the studbook do not represent the significant die off from West Nile virus starting in 2000, but ISIS download data show this decline (Figures 1 & 2). The age pyramid appears unstable, with few or no individuals many of the age classes and a male-skewed sex ratio (Figure 3). According to ISIS data, an average of 8.6 hatches per year has been produced over the last 10 years, but the average was 15.9 hatches per year before West Nile virus affected the population. Six to seven rehabilitation birds have been added to the population in the last ten years as well.

- Approximately 8 hatches or acquisitions per year are required to keep this population at its current size of 45 (lambda = 1.00).
- Approximately 11 - 13 hatches per year would be required for the population to grow to the estimated holding capacity of 150 in twenty years (lambda = 1.06).

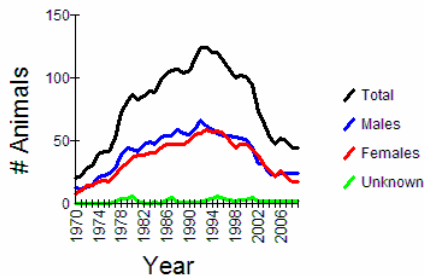


Figure 1. Population census of the North American snowy owl population from 1970 to present using ISIS download data. (ISIS data was used for this census, due to the studbook containing data for only the living population and their ancestors)

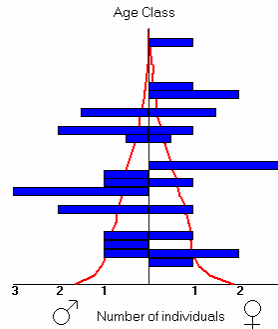


Figure 2. Age structure of the North American snowy owl population showing classes 0 – 19.

**Genetic Summary:** According to the studbook, this population has a relatively high starting gene diversity (93.6%) derived from a base of 14 founders, with an additional 11 potential founders currently in the population. The effective population size, or proportion of breeding individuals in the population, is very low ( $N_e/N = 0.082$ ). The ability to bring rehabilitation birds into the population may be suppressing this ratio. However, increasing breeding could certainly help this population minimize the loss of genetic diversity and the dependence on importing rehabilitation birds. Based on the TAG's 2009 space survey, this species seems to be in high demand with room to grow into new institutions.

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). Increasing the target population size, improving the growth rate, and improving the  $N_e/N$  ratio will help retain gene diversity for longer but the population will still not reach standard long term genetic goals (Scenarios B, C, and D). By improving these population parameters as well as adding founders, which may be possible due to the regular addition of rehab birds, this population could possibly meet long term genetic goals (Scenario E).

The following strategies will help this population to retain gene diversity for a longer period of time:

- Increase the population growth rate to fill the future capacity
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Increase the effective size ( $N_e/N$ ) towards 0.30

## African Pygmy Falcon *Polihierax semitorquatus*

Proposed program status: PMP

Projections for this population were based on the Regional African Pygmy Falcon Studbook (current to 10 May 2009 and maintained by Studbook Keeper Nicole LaGreco, San Diego Zoo). Genetic data exports were based on the AZA population. Exclusions were based on the 2006 PMP plan (due to education and age > 12 years old). Demographic exports were based on North American data from 1 January 1988 – 22 May 2009 (based on 2006 PMP).

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/ exclusions	% known after assumptions/ exclusions
AZA	22	43 (27.15.1)	36	70	4.3	1.075	77.5	0.22	100	100
Variables used in projections	--	--	--	--	--	--	--	--	--	--

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.22$ and $Kt =$ current population size after exclusions, 36)	17	Already < 90%	8	36 / 43	N/A
B. Increase target size, increase $\lambda$ to historic rates ( $\lambda = 1.075$ ), $N_e/N = 0.22$	32	Already < 90%	13	63 / 70	N/A
C. Import additional founders at a rate of 4 every 5 years, $\lambda = 1.075$ , $N_e/N = 0.22$	86	Already < 90%	129	63 / 70	134

[Continued on following page]



## African Pygmy Falcon *Polihierax semitorquatus* (continued)

**Demographic Summary:** This population has been growing steadily since the population's inception in 1985, primarily due to zoo hatches since 1988 (Figure 1). Over the past five years, the average number of hatches per year has been approximately 11 (ranging from 4 - 19). The age pyramid of this small population appears somewhat unstable, with a male-skewed sex ratio (Figure 2).

- Approximately 5 - 7 hatches per year are required to keep this population at its current size ( $\lambda = 1.00$ ).
- If the population were to grow at its historic average rate, approximately 9 – 12 hatches per would be necessary and the population would reach the TAG target size of 70 in 8 years.
- To reach the TAG target size of 70 over five years, approximately 11 – 15 hatches per year would be required ( $\lambda = 1.12$ ).

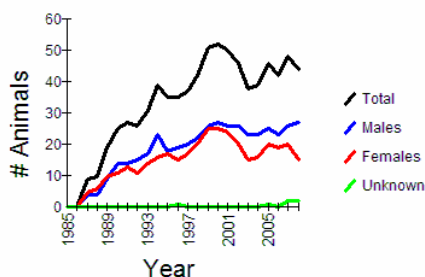


Figure 1. Population census of the AZA African pygmy falcon population from 1985 to present.

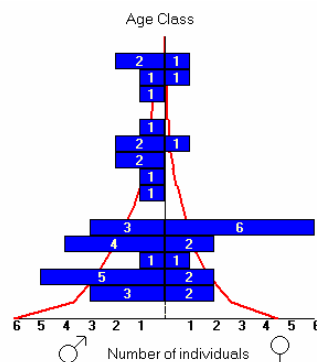


Figure 2. Age structure of the AZA African pygmy falcon population showing classes 0 – 11.

**Genetic Summary:** This population has a relatively low starting gene diversity (77.54%) derived from 7 founders. There currently no additional founders in the population, although founders may be available from breeders or rehab facilities in the species' range. The effective population size, or proportion of breeding individuals in the population, is moderate ( $N_e/N = 0.22$ ).

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). Increasing the target population size and maintaining a high growth rate will help retain gene diversity for slightly longer but the population will still not reach standard long term genetic goals (Scenarios B). The effective size of this population may not be able to be improved due to the reproductive biology of the species, with offspring staying with the parents to assist with raising additional offspring. However, additional founders may be available for this species. By maintaining a high growth rate and increasing the target population size, importing additional founders periodically and managing the population genetically using mean kinship, this population could possibly meet long term genetic goals (Scenario C).

Because this species is a small falcon that can be kept in family groups, and is a popular education bird, growing the population and placing birds should not be a problem.

The following strategies are recommended to help this population to retain gene diversity for a longer period of time:

- Equalize the founder lineages by selecting breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding and pairing birds with similar MK values).
- Increase the target population size to reflect increased capacity
- Maintain a high population growth rate to fill the future capacity
- Add founders if possible

# Secretary Bird

## *Sagittarius serpentarius*

**Proposed program status:** PMP

An ISIS download (current to 31 December 2008) was examined but demographic and genetic data were found to be deficient. A studbook for this species exists (maintained by Studbook Keeper Don Sterner, San Diego Zoo's Wild Animal Park) but was not available at the time of these analyses. Genetic data exports were based the U.S. AZA population.

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	13	33 (15.17)	29	40	12.6?	?	?	0.10?	6.7	--

Variables used in projections

N – Current population size  
 Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.  
 T – Generation time (years) (estimated from ISIS download)  
 $\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (indeterminable with these data)  
 GD – Estimated current gene diversity of AZA population (indeterminable with these data)  
 $N_e/N$  – Ratio of effective population size to actual population size (estimated from ISIS download)  
 % Known – proportion of descendant population with known pedigree.

**Demographic Summary:** According to ISIS data, this population has exhibited varying growth rates over the last 20 years, ranging from 0.973 to 1.179 (Figure 1). This was after a significant increase to more than double the population in 1985. There were over 200 individuals without a hatch event in the ISIS download and so were not included in the census. Zoo hatches appear to have started in 1984, with about 2 – 3 hatches each year over the past 5 years. First-year mortality appears relatively low at 19% for males and 28% for females. Based on the small sample sizes in the ISIS data, males have bred from 8 – 18 years of age, females from 7 to 12 years. This may not represent the biological truth since these data have not been cleaned up. The age pyramid is unstable, with many empty age classes, but has an even sex ratio (Figure 2).

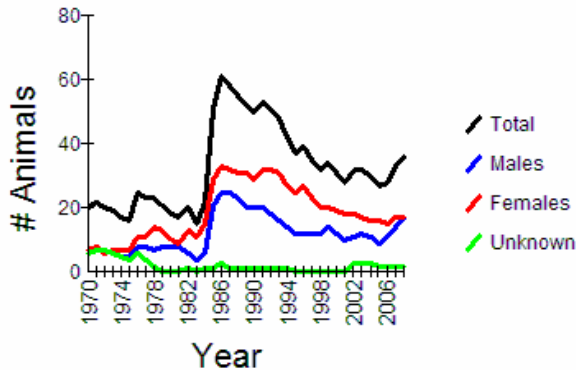


Figure 1. Population census of the AZA secretary bird population from 1970 to present.

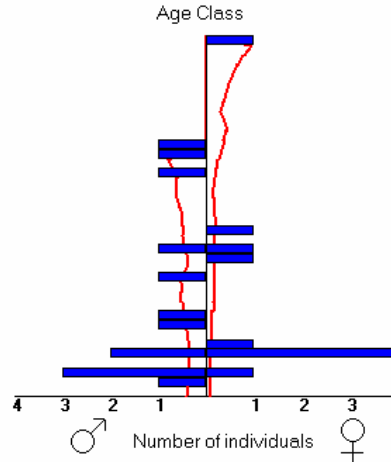


Figure 2. Age structure of the AZA secretary bird population showing classes 0 – 26.

**Secretary Bird**  
*Sagittarius serpentarius*  
(continued)

**Genetic Summary:** Data from the ISIS download are only 6.7% known, so genetic projections cannot be run. Based on the TAG's 2009 space survey, there seems to be limited demand for this species.

The following strategies will help this population to retain gene diversity for a longer period of time:

- Update studbook
- Increase the target population size
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)

# Harpy Eagle

## *Harpia harpyja*

Proposed program status: PMP

Projections for this population were based on an analytical version of the Regional Harpy Eagle Studbook (current to 3 March 2007 and maintained by Studbook Keeper Clancy Hall, San Diego Zoo). Preliminary pedigree assumptions were developed for the purposes of these TAG analyses. Genetic data exports were based on the AZA population. Demographic exports were based on AZA data from 1 January 1995 – 22 May 2009. However, due to the small population size and a short history in zoos, demographic data was deficient for this species and many values had to be estimated (e.g. generation time).

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	Historic & Projected T	$\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	8	16 (9.7.0)	16	30	--	1.09	74.5	0.17	37.5	100

Variables used in projections 20

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.17$ and $Kt =$ current population size, 16)	17	Already < 90%	8	16	N/A
B. Increase target population size to 30, increase to historic growth rate of 1.089, increase $N_e/N$ to 0.25	46	Already < 90%	24	30	N/A
C. Increase generation time to reflect long reproductive span ( $T = 20$ ), $Kt = 30$ , $\lambda = 1.089$ , $N_e/N = 0.25$	52	Already < 90%	35	30	N/A
D. Acquire additional founders at a rate of 2 every 10 years, $T = 20$ , $Kt = 30$ , $\lambda = 1.089$ , $N_e/N = 0.25$	81	Already < 90%	162	30	404

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# Harpy Eagle

## *Harpia harpyja*

(continued)

**Demographic Summary:** This population has been in zoos since 1956 but growth due to zoo hatches has only occurred in the past decade or two. Demographic data for this species is lacking due a small population size, very little breeding in zoos, and age estimates for many birds. As a result of the very small population size, the age structure is very unstable, although the few breeding aged animals in the population have produced offspring in recent years (Figure 2).

- The focus of this PMP should be to acquire additional birds and increase the number of breeding pairs.

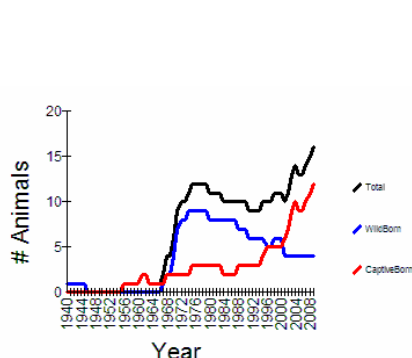


Figure 1. Population census of the AZA harpy eagle population from 1940 to present.

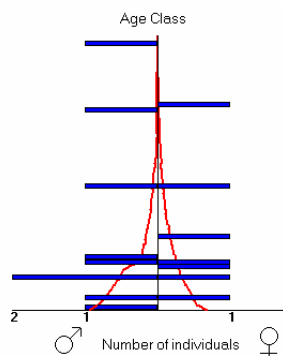


Figure 2. Age structure of the AZA harpy eagle population showing classes 0 – 52.

**Genetic Summary:** This population has a low starting gene diversity (74.5%) derived from a base of 3 founders. Four potential founders exist in the population; however, some may be unlikely to breed. The effective population size, or proportion of breeding individuals in the population, is relatively low ( $N_e/N = 0.17$ ).

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). Increasing the target size slightly, increasing the  $N_e/N$  ratio by breeding more birds, and increasing the growth rate will help retain gene diversity for slightly longer but the population will still not reach standard long term genetic goals (Scenario B). By improving population parameters as well as adding founders, this population could come closer to meeting long term genetic goals (Scenarios D).

The following strategies will help this population to retain gene diversity for a longer period of time and improve demographic stability:

- Breed existing potential founders or add new founders
- Increase the target population size
- Grow the population to fill capacity
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Increase the effective size ( $N_e/N$ ) towards 0.30

# King Vulture

## *Sarcorhamphus papa*

**Proposed program status:** PMP

Projections for this population were based on an analytical version of the Regional King Vulture Studbook (current to 31 December 2002 and maintained by Studbook Keeper Brian Tierney, Bronx Zoo). Preliminary pedigree assumptions were developed for the purposes of these TAG analyses. Genetic data exports were based the North American population (mostly AZA + 3 non-AZA). No exclusions were made although it is likely that many birds may be unlikely to breed due to use in education programs or age. Demographic exports were based on North American data from 1 January 1980 – 21 April 2009.

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/ exclusions	% known after assumptions/ exclusions
AZA	48	99 (49.40.10)	--	120	24	1.01	97.8	0.30	86.5	100
Non-AZA (likely to participate in the PMP)	3	6 (2.4.0)	--	--	--	--	--	--	--	--
Variables used in projections	51	105	105	--	--	1.012	--	--	--	--

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.30$ and $Kt =$ current population size, 105)	> 90	124	158	105	84
B. Increase target population size to 120, increase $\lambda$ to 1.012, $N_e/N = 0.30$	> 90	141	180	120	84

[Continued on following page]

## King Vulture *Sarcorhamphus papa* (continued)

**Demographic Summary:** According to the TAG's space survey, approximately 1/3 of the birds in the AZA population are held in educational programs and 2/3 in breeding situations. There is a sufficient amount of demographic data for all but the oldest age classes; full lifespans and mortality rates are not known and this could affect the demographic projections (i.e., the number of hatches needed to offset deaths).

This population has exhibited a historically healthy growth rate (Figure 1), producing a sufficient number of hatches each year to offset deaths. Over the past ten years, annual hatches have averaged 3 per year. Neonatal mortality for both sexes is approximately 20-24%, with adults living into the early to mid 40's. King vultures males have reproduced between 3-38 and females between the ages of 4-45. Mortality and fecundity data may be optimistic for the older age classes due to uncertain ages of wild hatched birds when they arrived. The age pyramid appears slightly unstable, with few individuals in the juvenile age classes but many in the reproductive age classes with the potential to produce offspring. The sex ratio is skewed towards males (Figure 2).

- Approximately 3 – 6 hatches per year are required to keep this population at its current size ( $\lambda = 1.00$ ).
- To grow this population to the estimated holding capacity of 120 at the historic growth rate ( $\lambda = 1.01$ ) would take 10 years and would require approximately 5 - 7 hatches per year.

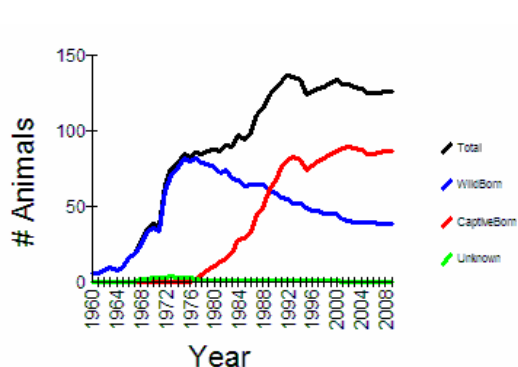


Figure 1. Population census of the AZA king vulture population from 1960 to present.

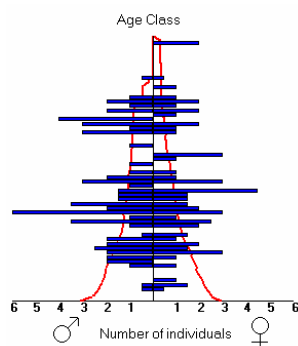


Figure 2. Age structure of the AZA king vulture population showing classes 0 – 57.

**Genetic Summary:** This population has a very high starting gene diversity (97.79%) derived from a large founder base (47 founders). In addition, twelve potential founders exist in the population and if bred these could contribute a potential gene diversity approaching 99%. The ratio of effective population size to census population size, or proportion of breeding individuals in the population, is 0.30. This value is indicative of either a well-managed monogamously paired population or a long-lived species with a long reproductive span.

Projections indicate that under current population parameters, this population will meet standard genetic goals of 90% GD for 100 years (Scenario A). By continuing to follow standard strategies to maintain gene diversity, i.e. select breeding pairs using mean kinship and prioritizing low mean kinship animals for breeding, this species should remain genetically healthy.

# African White-backed Vulture

## *Gyps africanus*

**Proposed program status:** PMP

Projections for this population were based on the Regional African White-backed Vulture Studbook (current to 4 May 2009 and maintained by Studbook Keeper Susie Kasielke, Los Angeles Zoo and Botanical Gardens). Genetic data exports were based on the AZA population.

Demographic data for this species was not sufficient for demographic analyses but some data was estimated from similar species. Generation time was estimated at 20 years.

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	Historic & Projected T	λ	GD (%)	N <sub>e</sub> /N	% known before assumptions/ exclusions	% known after assumptions/ exclusions
AZA	5	21	21		--	--	75.0	0.127	100	100
Variables used in projections				30, 50	20	1.03	87.5	0.30		

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair and PMP Manager.

T – Generation time (years) (estimated)

λ - Potential population growth rate (λ = 1.0, 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

N<sub>e</sub>/N – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size	Minimum population size needed to meet genetic goals
A. Baseline (lambda=1.00, Ne/N = 0.13 and Kt = current population size, 21)	27	Already < 90%	13	21	N/A
B. Increase the target population size to 30, increase growth rate to lambda = 1.03, increase Ne/N to 0.30 (by increasing # and proportion of breeding animals), increase starting GD to 87.5% to show impact of 4 potential founders breeding	65	Already < 90%	36	30	N/A
C. Increase the target population size to 50, lambda = 1.03, Ne/N = 0.30, starting GD = 87.5% to show impact of 4 potential founders breeding	71	Already < 90%	48	50	N/A
D. Acquire/recruit additional potential founders at a rate of 4 every 10 years. Kt = 50, lambda = 1.03, Ne/N = 0.30, starting GD = 87.5% to show impact of 4 potential founders breeding	90	100	183	50	50

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## African White-backed Vulture *Gyps africanus* (continued)

**Demographic Summary:** While the population has existed in zoos since 1926, this population's peak came only in 1989, and the first recorded captive hatch was not until 1995. Any subsequent hatches occurring have been in small numbers and the population has consistently depended on imports from the wild, even at present (Figure 1). Overall however the population has been in decline since the peak of 1989 (mean lambda since this time = 0.976). The growth rate for captive hatches has remained approximately stable since 1995, with only about 2 and at most 3 hatches occurring each year (mean lambda = 1.00). The age structure of the population is very sparse with mostly empty age classes throughout the pyramid. The small size of the population is most evident from the figure (Figure 2).

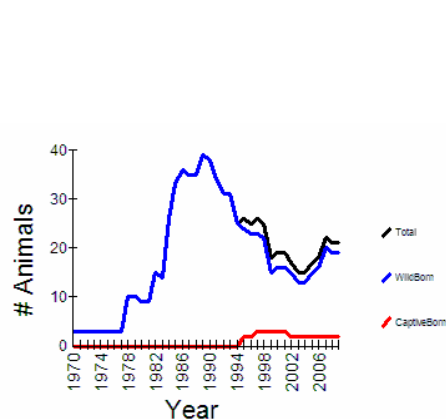


Figure 1. Population census of the AZA African white-backed vulture population from 1970 to present.

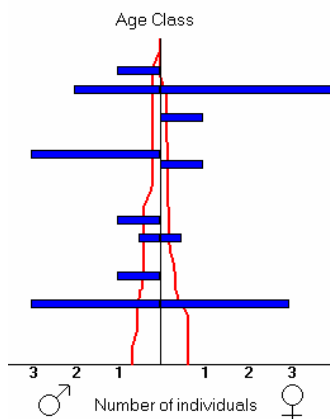


Figure 2. Age structure of the AZA African white-backed vulture population showing classes 0 – 31.

**Genetic Summary:** This population has a starting gene diversity of 75%, derived from four founders. However this GD has the potential to increase significantly if the 16 potential existing founders in the population were to breed. The effective population size, or proportion of breeding individuals in the population, is moderate ( $N_e/N = 0.127$ ), and effort should be placed on increasing this value.

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). If 2 pairs of potential founders were to breed, the starting GD could be increased to 87.5%. Projections using this starting GD, with also improving the  $N_e/N$  ratio, increasing the target population size, and improving the growth rate, will help retain gene diversity for longer but the population will still not reach standard long term genetic goals (Scenarios B & C). However by adding more founders as well as improving these population parameters, this population could possibly meet long term genetic goals (Scenario D).

The following strategies will help this population to retain gene diversity for a longer period of time:

- Increase the target population size
- Increase the population growth rate to fill the future capacity
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Increase the effective size ( $N_e/N$ ) towards 0.30
- Breed existing potential founders
- Import new founders

# Cape Griffon Vulture

## *Gyps coprotheres*

**Proposed program status:** PMP

Projections for this population were based on an analytical version of the Regional Cape Griffon Vulture Studbook (current to 4 May 2009 and maintained by Studbook Keeper Susie Kasielke, Los Angeles Zoo and Botanical Gardens). Assumptions were developed by the PMC for the PMP meeting just prior to the TAG meeting. Genetic data exports were based on the AZA population. Demographic exports were based on North American data from 1 January 1993 – 18 May 2009. Since long-term demographic data was not available for the population, generation time was extended to 20 years to better reflect the reproductive span of this long-lived species.

This species competes for space with African white-backed and Ruppell's vultures. However, this population has the added benefit in that it has potential to support a reintroduction project.

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	5	26	26	35	15.2	1.031	76	0.154	83.3	100
Variables used in projections				35, 50	20	1.031	84	0.30		

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair and PMP Manager.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.15$ and $Kt =$ current population size, 26)	38	Already < 90%	19	26	N/A
B. Increase the target population size to 35, increase growth rate to $\lambda = 1.03$ , increase $N_e/N$ to 0.30 (by increasing # and proportion of breeding animals), increase starting GD to 82% to show impact of 4 potential founders breeding	64	Already < 90%	50	35	N/A
C. Increase the target population size to 50, increase growth rate to $\lambda = 1.03$ , increase $N_e/N$ to 0.30 (by increasing # and proportion of breeding animals), increase starting GD to 82% to show impact of 4 potential founders breeding	68	Already < 90%	66	50	N/A
D. Acquire/recruit additional potential founders at a rate of 4 every 10 years. $Kt = 50$ , $\lambda = 1.03$ , $N_e/N = 0.30$ , starting GD = 82% to show impact of 4 potential founders breeding	90	100	> 200	50	42

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## Cape Griffon Vulture *Gyps coprotheres* (continued)

**Demographic Summary:** Cape Griffon Vultures were first documented in North American zoos in small numbers in 1909, however the first recorded captive hatch was not until 1993. Since this time, the population has grown fairly successfully (Figure 1), due to consistent imports as well as zoo hatches. The general trend for the last 20 years has been one of positive growth (mean lambda = 1.135 or 13.5% growth). The age structure of the population is quite sparse and the small population size is evident (Figure 2). There is some male-bias among chicks and some female bias among wild birds.

To grow the population at a rate of 3% (lambda = 1.03), 4 hatches per year are required. At this growth rate, the population would reach a target size of 30 in four years. Clutch size is always one egg.

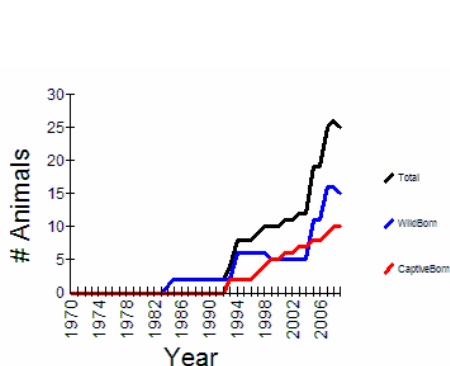


Figure 1. Population census of the AZA Cape Griffon vulture population from 1970 to present.

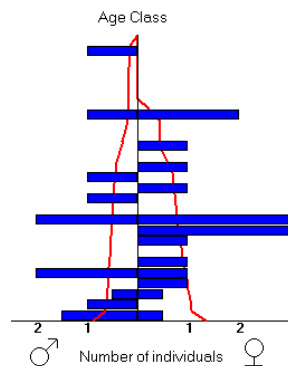


Figure 2. Age structure of the AZA Cape Griffon vulture population showing classes 0 – 25.

**Genetic Summary:** This population has a starting gene diversity of 76%, derived from three founders. However this GD has the potential to increase significantly if the 11 potential existing founders in the population were to breed. The effective population size, or proportion of breeding individuals in the population, is moderate ( $N_e/N = 0.1538$ ), and effort should be placed on increasing this value.

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). If 2 pairs of potential founders were to breed, the starting GD could be increased to 82%. Projections using this starting GD, with also improving the  $N_e/N$  ratio, increasing the target population size, and maintaining the growth rate, will help retain gene diversity for longer but the population will still not reach standard long term genetic goals (Scenarios B & C). However by adding more founders as well as improving these population parameters, this population could possibly meet long term genetic goals (Scenario D).

The following strategies will help this population to retain gene diversity for a longer period of time:

- Increase the target population size
- Increase the population growth rate to fill the future capacity
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Increase the effective size ( $N_e/N$ ) towards 0.30
- Breed existing potential founders
- Import new founders

# Ruppell's Griffon Vulture

## *Gyps rueppelli*

Proposed program status: PMP

Projections for this population were based on an analytical version of the Regional Ruppell's Griffon Vulture Studbook (current to 1 April 2009 and maintained by Studbook Keeper Bryan Emberton, Disney's Animal Kingdom). Tentative pedigree assumptions were developed by the PMC for the purposes of the TAG analyses. Genetic data exports were based the AZA population. Demographic exports were based on North American data from 1 January 1986 – 18 May 2009 (based on most recent 2009 SSP).

**This species competes for space with white-backed and cape griffon vultures. Despite its longer history of being held and bred in zoos, this species is of the least conservation concern relative to the other two vultures. The TAG will re-examine this issue in the next RCP to consider whether Ruppell's spaces should be used for one or both of the other vultures, provided these species have been able to breed up successfully over the next few years of management. Please consider Scenario C for all three vultures for comparison.**

### Demography & Genetics

Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	51	51	60	14.9	1.032	88.7	0.35		
Variables used in projections			75			90			

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair and the PMP Manager.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.35$ and $Kt =$ current population size, 51)	73	Already < 90%	59	51	N/A
B. Increase target population size to 75, increase growth rate to $\lambda=1.032$ , maintain $N_e/N = 0.35$	78	Already < 90%	85	75	N/A
C. Increase starting GD = 90% to show impact of 4 potential founders breeding, $Kt = 75$ , $\lambda=1.032$ , $N_e/N = 0.35$	79	Already < 90%	87	75	N/A

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## Ruppell's Griffon Vulture

### *Gyps rueppelli*

(continued)

**Demographic Summary:** While this population began in 1966 and the first captive hatch was in 1967, successful breeding only really began around 1987 (Figure 1). Importation of birds has been less common of late, and growth has been driven solely by zoo hatches. The age pyramid appears stable and columnar in shape, with an approximately even sex ratio (Figure 2).

- Approximately 2 hatches per year are required to keep this population at its current size ( $\lambda = 1.00$ ).
- Approximately 4 hatches per year would be required for the population to grow the estimated holding capacity of 8 more in five years ( $\lambda = 1.03$ ).

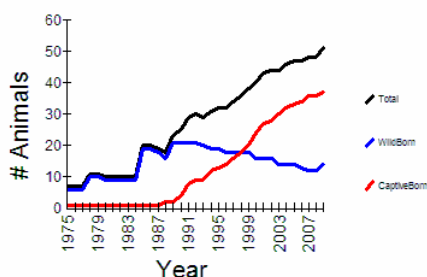


Figure 1. Population census of the AZA Ruppell's black vulture population from 1975 to present.

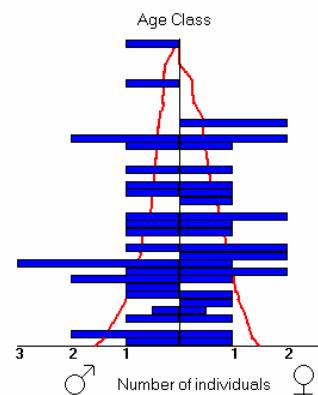


Figure 2. Age structure of the AZA Ruppell's black vulture population showing classes 0 – 38.

**Genetic Summary:** Based on the analytical studbook, this population has a starting gene diversity (88.69%) derived from a founder base 13 founders. Six potential founders exist in the current population. The effective population size, or proportion of breeding individuals in the population, is relatively high ( $N_e/N = 0.353$ ). Founders are not as easily available for this species because of fewer sources in the range countries.

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). If 2 pairs of potential founders were to breed, the starting GD could be increased to 90%. Projections using this starting GD, with also improving the  $N_e/N$  ratio, increasing the target population size, and maintaining the growth rate, will help retain gene diversity for longer but the population will still not reach standard long term genetic goals (Scenario C). Additional founders are currently not possible for this population.

The following strategies will help this population to retain gene diversity for a longer period of time:

- Increase the target population size
- Increase the population growth rate to fill the future capacity
- Select breeding pairs using mean kinship (i.e., prioritizing low mean kinship animals for breeding)
- Increase the effective size ( $N_e/N$ ) towards 0.30
- Breed existing potential founders

# Lappet-faced Vulture

## *Torgos tracheliotus*

**Proposed program status:** PMP

Projections for this population were based on the Regional Lappet-faced Vulture Studbook (current to 24 December 2008 and maintained by Studbook Keeper Debbie Milligan, Dallas Zoo). Genetic data exports for the living population were based on the N. American population. Demographic exports were based on N. American data from 1 January 1900 – 24 December 2008.

No animals were excluded from the breeding population and the genetic analyses.

### Demography & Genetics

	Number of holding institutions	N	N after exclusions	Estimated 3 yr capacity	T	Historic & Projected $\lambda$	GD (%)	$N_e/N$	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	11	28 (14.14)	28	50	20	0.951	86.7	0.21	100	100
Variables used in projections	--	--	--	--	--	1.03	90	0.30	--	--

N – Current population size

Estimated capacity was based on the 3 year breeding and holding capacity obtained from the Raptor TAG's space survey, with additional space estimated by the TAG Chair.

T – Generation time (years) (estimated)

$\lambda$  - Potential population growth rate ( $\lambda = 1.0$ , 0% growth) (estimated)

GD – Estimated current gene diversity of AZA population

$N_e/N$  – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size (after/before exclusions)	Minimum population size needed to meet genetic goals
A. Baseline ( $\lambda=1.00$ , $N_e/N = 0.21$ and $Kt =$ current population size, 28)	56	Already < 90%	26	28	N/A
B. Increase target population size to 50, increase growth rate to $\lambda = 1.03$ , increase $N_e/N$ to 0.30 (by increasing # and proportion of breeding animals)	72	Already < 90%	62	50	N/A
C. Increase starting GD to 90% reflect 4 potential founders breeding, $\lambda = 1.03$ , $N_e/N = 0.30$	75	Already < 90%	62	50	N/A
D. Acquire/recruit additional founders at a rate of 4 every 15 years, starting GD = 90% reflect 4 potential founders breeding, $\lambda = 1.03$ , $N_e/N = 0.30$	90	100	161	50	70
E. Acquire/recruit additional founders at a rate of 4 every 10 years, starting GD = 90% reflect 4 potential founders breeding, $\lambda = 1.03$ , $N_e/N = 0.30$	> 90	> 100	171	50	48

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# Lappet-faced Vulture

## *Torgos tracheliotus*

(continued)

**Demographic Summary:** This population has exhibited a historically healthy growth rate (Figure 1), producing a sufficient number of hatches each year to offset deaths. Over the past ten years, annual hatches have ranged from 0-4 per year. The age pyramid appears unstable with few individuals in most age classes and an even sex ratio (Figure 2). Because many birds are in the reproductive age classes there is potential for this to become more stable with focused efforts on breeding to fill the lower age classes.

According to the small amount of studbook data, males have bred from age 8 to 22, females from 10 – 30 years. However, this most likely does not reflect the true reproductive biology of the species but rather is an artifact of the small population size and short history of breeding in zoos. Neonatal mortality is 41% for males, 33% for females. Adults have lived into their mid-30's.

- Approximately 2 hatches per year are estimated to keep this population at its current size ( $\lambda = 1.00$ ).
- Approximately 3 – 4 hatches per year would be required for the population to grow the estimated holding capacity of 50 in 20 years ( $\lambda = 1.03$ ).

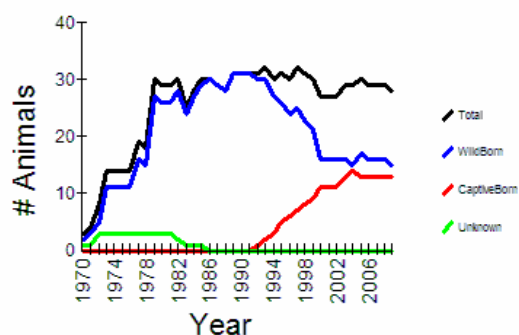


Figure 1. Population census of the AZA lappet-faced vulture population from 1970 to present.

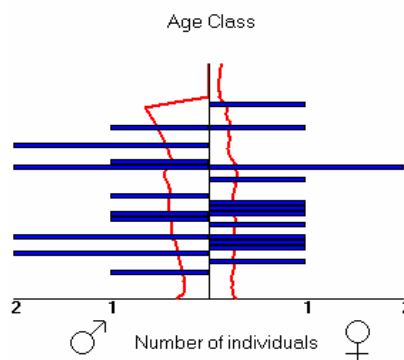


Figure 2. Age structure of the AZA lappet-faced vulture population showing classes 0 – 33.

**Genetic Summary:** This population has a starting gene diversity of 86.69% derived from six founders. Nine additional potential founders remain in the population. The ratio of effective population size to census size ratio, or proportion of breeding individuals in the population, is moderate ( $N_e/N = 0.21$ ) and could be increased by breeding the other potential founders.

Projections indicate that under current population parameters, this population will **not** meet standard genetic goals of 90% GD for 100 years (Scenario A). Improving the  $N_e/N$  ratio, increasing the target population size, and improving the growth rate will help retain gene diversity for longer but the population will still not reach standard long term genetic goals (Scenarios B & C). By improving these population parameters as well as adding founders, this population could possibly meet long term genetic goals (Scenarios D & E).

The following strategies are recommended to help this population to retain gene diversity:

- Equalize the representation of founder lineages
  - Breed unrepresented potential founders with other unrepresented potential founders
  - Keep existing founder pairs together and re-breed, prioritizing breeding of 37x 45 and 51x 55
- Increase the population growth rate to fill the future capacity
- Increase the effective size ( $N_e/N$ ) towards 0.30
- Add founders if possible

## Appendix VIII

### AZA RAPTOR TAG Taxon Listing

#### FAMILY CATHARTIDAE (NEW WORLD VULTURES)

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World</u> <u>vol. 2&amp; 5</u> )	TAG Recommendation
Turkey Vulture <i>Cathartes aura</i> Subspecies (4) <i>C.a. aura</i> , <i>C.a. septentrionalis</i> , <i>C.a. ruficollis</i> , <i>C.a. jota</i>	North, Central and South America.	Not globally threatened (NGT) Widespread and abundant with increasing range.	DERP
Lesser Yellow-headed Vulture <i>Cathartes burrovianus</i>	Central America S to C Colombia and NW Venezuela, lowland South America.	NGT. Status and distribution poorly known. Populations appear widespread and common.	Not recommended
Greater Yellow-headed Vulture <i>Cathartes melambrotus</i>	Amazonia, including S. Venezuela and the Guianas.	NGT.	Not recommended
American Black Vulture <i>Coragyps atratus</i>	S USA, N Mexico, Central America and N& E South America.	NGT; widespread and common	DERP
King Vulture <i>Sarcorampus papa</i>	Tropical forest and savanna regions of Central and South America (Mexico – N Argentina).	NGT. CITES III Honduras	PMP
California Condor <i>Gymnogyps californianus</i>	Historic range = Mountains of Pacific coast of North America.	Endangered. CITES I. One of the most critically endangered bird species. Extinct in wild from 1982-1992. Current Reintroduction program from captive population back to former range	SSP
Andean Condor <i>Vultur gryphus</i>	Andes from Venezuela to Tierra del Fuego. Sea level in Chile and Peru.	NGT. CITES I. Currently threatened over most of range. Reintroduction effort using captive bred birds underway in Columbia and Venezuela.	SSP

#### FAMILY PANDION

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World</u> <u>vol. 2&amp; 5</u> )	TAG Recommendation
Osprey <i>Pandion haliaetus</i> 4 subspecies <i>P.h.haliaetus</i> , <i>P.h. carolinensis</i> , <i>P.h.ridgwayi</i> , <i>P.h.cristatus</i>	<i>P.h.haliaetus</i> – Scandinavia E to Japan, S to Mediterranean, Red Sea & Cape Verde Is.; winters S. Africa, India, W. Indonesia & Philippines. <i>P.h. carolinensis</i> – Labrador W to Alaska and S. to Arizona and Florida. Winters S to Peru and S Brazil. <i>P.h. ridgwayi</i> – Caribbean, including Bahamas, Cuba and Belize. <i>P.h. cristatus</i> – Australia e to New Caledonia, N through New Guinea, Java and Sulawesi.	NGT. CITES II. Frequent to abundant throughout most of range.	DERP



FAMILY ACCIPITRIDAE (HAWKS & EAGLES)

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World</u> vol. 2& 5)	TAG Recommendation
African Cuckoo-hawk <i>Aviceda cuculoides</i> 3 subspecies <i>A.c.cuculoides</i> , <i>A.c. batesi</i> , <i>A.c. verreauxii</i> .	<i>A.c.cuculoides</i> – Senegal E to SW Ethiopa, S to Nigeria and N Zaire. <i>A.c. batesi</i> – lowland rainforest from Sierra Leone E to E Uganda & S to N Angola. <i>A.c. verreauxii</i> – woodland & coastal riparian & montane forest Kenya S to N Namibia and S. Africa.	NGT. CITES II.	Not recommended
Madagascar Cuckoo-hawk <i>Aviceda madagascariensis</i>	Madagascar.	NGT. CITES II. Considered near threatened	Not recommended
Jerdon's Baza <i>Aviceda jerdoni</i> 5 subspecies <i>A.j.ceylonesis</i> , <i>A.j. Jerdoni</i> , <i>A.j. borneensis</i> , <i>A.j. magnirostris</i> , <i>A.j. celebensis</i>	<i>A.j. ceylonensis</i> – SW India & Sri Lanka. <i>A.j. jerdoni</i> – NE India – Burma, S China, Thailand, parts of Indochina to N Malay Penninsula. <i>A.j. borneensis</i> –Borneo. <i>A.j. magnirostris</i> – Phillipines. <i>A.j. celebensis</i> – Sulawesi, Banggai Is & Sula Is.	NGT. CITES II. Uncommon to rare throughout range.	Not recommended
Pacific Baza <i>Aviceda subcristata</i> 13 subspecies: <i>A.s. timorlauensis</i> , <i>A.s. pallida</i> , <i>A.s. reinwardtii</i> , <i>A.s. stresemanni</i> , <i>A.s. rufa</i> , <i>A s. waigeuensis</i> , <i>A s. obscura</i> , <i>A.s. stenzozona</i> , <i>A.s. megala</i> , <i>A s. coultasi</i> , <i>A.s. bismarckii</i> , <i>A.s. gurneyi</i> , <i>A s. subcristata</i>	Islands off Sulawesi, Lesser Sundas, N, C & S Moluccas, Waigeo I, Biak I, E, W New Guinea, Aru Is, Admiralty Is, Bismarck Archipelago, Solomon Is, N & NE Australia.	NGT. CITES II.	Not recommended
Black Baza <i>Aviceda leuphotes</i> 4 subspecies <i>A.l. wolfei</i> , <i>A l. syama</i> , <i>A l. leuphotes</i> , <i>A .l. andamanica</i>	S & C China, NE India, Nepal, SW India, S Burma, W Thailand, South Andaman I.	NGT. CITES II. Uncommon in range.	Not recommended
Grey-headed Kite <i>Leptodon cayanensis</i> 2 subspecies <i>L.c. cayanensis</i> , <i>L c. monachus</i>	Mexico, S to W Ecuador, Amazonia, Guianas Trinidad, C Brazil, to E Bolivia, N Argentina, Paraguay.	NGT. CITES II. Rare to uncommon in range but not considered threatened.	Not recommended
White-collared Kite <i>Leptodon forbesi</i>	NE Brazil.	Insufficiently known, CITES II. Forest habitat has been reduced to 1% of former range. Considered by <u>Handbook to the Birds of the World vol 2</u> to be one of the most endangered raptors in world.	Not recommended
Hook-billed Kite <i>Chondrohierax uncinatus</i> 3 subspecies <i>C.u. uncinatus</i> , <i>C.u. mirus</i> , <i>C.u. wilsonii</i>	W Mexico, extreme S USA, S through C America, Trinidad, Guianas, Brazil to E Peru, E Boliva, Paraguay, N Argentina, Grenada, E Cuba.	NGT. CITES II. Race <i>wilsonii</i> CITES I. Race <i>mirus</i> of Grenada seriously endangered with only 15-30 individuals.	Not recommended

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Long-tailed Buzzard	New Guinea, W Papuan islands, Aru Is.	NGT. CITES II	Not recommended

<i>Henicopernis longicauda</i>			
New Britain Buzzard <i>Henicopernis infuscatus</i>	New Britain.	Indeterminate. CITES II. Seldom seen. Biology unknown	Not recommended
Western Honey-buzzard <i>Pernis apivorus</i>	Europe and W Asia, from Spain, France, SE England and E Scandinavia, W Russia, Caucasus, to R Ob in SW Siberia. Winters in Africa.	NGT. CITES II. Stable population	Not recommended
Crested Honey-buzzard <i>Pernis ptilorhynchus</i> 6 subspecies <i>P.p. ruficollis</i> , <i>P.p. philippensis</i> , <i>P.p. palawanesis</i> , <i>P.p. torquatus</i> , <i>P.p. ptilorhynchus</i> , <i>P.p. orientalis</i>	S Siberia E to Amurland & Sakhalin, S to Manchuria, Japan, India, Sri Lanka, Burma, SC China, N, E & W Phillipines, Palawan, Malay Peninsula, Sumatra, Borneo, and Java.	NGT. CITES II. Status poorly known.	Not recommended
Barred Honey-buzzard <i>Pernis celebensis</i> 2 subspecies <i>P.c. celebensis</i> , <i>P.c. steerei</i>	Sulawesi, Muna I & Banggai Is, Phillipines.	NGT. CITES II. Status poorly known.	Not recommended
Square-tailed Kite <i>Lophoictinia isura</i>	Australia.	NGT. CITES II. Highly specialized species. Declining due to habitat destruction and egg collecting.	Not recommended
Black-breasted Buzzard <i>Hamirostra melanosternon</i>	Australia, except S and E.	NGT, CITES II. Declining in SE portion of range due to habitat destruction, egg collecting and poisoning of carcasses it scavenges on.	Not recommended
American Swallow-tailed Kite <i>Elanoides forficatus</i> 2 subspecies <i>E.f. forficatus</i> , <i>E.f. yetapa</i>	<i>E.f. forficatus</i> - coastal SE USA to N. Mexico. <i>E.F. yetapa</i> - S Mexico (except Yucatán) S through Central America (excluding El Savador) to E Bolivia, Paraguay and NE Argentina (Misiones).	NGT. CITES II. Relatively common over much of its extensive distribution.	Not recommended
Bat Hawk <i>Macheiramphus alcinus</i> 3 subspecies <i>M.a. alcinus</i> , <i>M.a. papuanus</i> , <i>M.a. anderssoni</i>	<i>M.a. alcinus</i> - S Burma, W Thailand, Malay Peninsula, Sumatra, Borneo and NC Sulawesi. <i>M.a. papuanus</i> - E New Guinea. <i>M.a. anderssoni</i> - Senegambia E to Ethiopia and S to South Africa, Madagascar.	NGT. CITES II. Status difficult to assess due to nocturnal habits and custom of roosting in densely foiled trees; often considered uncommon to rare.	Not recommended
Pearl Kite <i>Gampsonyx swainsonii</i> 3 subspecies <i>G.s. leonae</i> , <i>G.s. Swainsonii</i> , <i>G.s. magnus</i>	<i>G.s. leonae</i> - Nicaragua, N Colombia through Venezuela and Trinidad to Guyana and Surinam, and S to R Amazon. <i>G.s. swainsonii</i> - Brazil S of R Amazon to E Peru, E Bolivia, Paraguay and N Argentina. <i>G.s. magnus</i> - Coastal W Colombia, Ecuador and N Peru.	NGT. CITES II. Locally distributed and not generally common, but probably benefits from forest destruction, e.g. numerous in partly deforested areas of S Córdoba (NW Columbia).	Not recommended
Common Black-shouldered Kite <i>Elanus caeruleus</i> 4 subspecies <i>E.c. caeruleus</i> , <i>E.c. vociferus</i> , <i>E.c. hypoleucus</i> , <i>E.c. wahgiensis</i>	<i>E.c. caeruleus</i> - SW Iberian Peninsula, most of Africa and SW Arabia. <i>E.c. vociferus</i> - Pakistan E to S & E China, Indochina and Malay Peninsula. <i>E.c. hypoleucus</i> - Sumatra, Java, Borneo, Philippines, Sulawesi, Kalao and Lesser Sundas. <i>E.c. wahgiensis</i> - New Guinea.	NGT. CITES II. One of the commonest birds of prey throughout its wide range.	Not recommended

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Common Black-shouldered Kite <i>Elanus caeruleus</i> 4 subspecies <i>E.c. caeruleus</i> , <i>E.c. vociferus</i> ,	<i>E.c. caeruleus</i> - SW Iberian Peninsula, most of Africa and SW Arabia. <i>E.c. vociferus</i> - Pakistan E to S & E China, Indochina and Malay Peninsula.	NGT. CITES II. One of the commonest birds of prey throughout its wide range.	Not recommended

<i>E.c. hypoleucus</i> , <i>E.c. wahgiensis</i>	<i>E.c. hypoleucus</i> - Sumatra, Java, Borneo, Philippines, Sulawesi, Kalao and Lesser Sundas. <i>E.c. wahgiensis</i> - New Guinea.		
Australian Black-shouldered Kite <i>Elanus axillaris</i>	Australia.	NGT. CITES II. Common and widespread; has increased in range and numbers in cleared and farmed areas of S Australia in response to creation of habitat and introduction of suitable prey.	Not recommended
White-tailed Kite <i>Elanus leucurus</i> 2 subspecies <i>E.l. majusculus</i> , <i>E.l. leucurus</i>	<i>E.l. majusculus</i> - W & S USA (from Oregon to C Florida, occasionally to South Carolina) and N Mexico; also most of Central America (race uncertain). <i>E.l. leucurus</i> - Panama, S through Amazonia to C Argentina (Mendoza and Buenos Aires) and C Chile (Valdivia).	NGT. CITES II. Seems to be increasing over much of range, especially from S Mexico to Panama, with Nicaraguan birds apparently of California origin.	Not recommended
Letter-winged Kite <i>Elanus scriptus</i>	Australia, mainly in interior.	NGT. CITES II. Conservation status is of some concern. Generally uncommon; core breeding range and population small and subject to habitat degradation by overgrazing,	Not recommended
African Swallow-tailed Kite <i>Chelictinia riocourii</i>	Senegambia E to Ethiopia and Somalia, and S to NE Uganda and NE Kenya, in Kedong Valley.	NGT. CITES II. Little studied; status difficult to assess due to nomadic habits.	Not recommended
Snail Kite <i>Rostrhamus sociabilis</i> 3 subspecies <i>R.s. plubeus</i> , <i>R.s. major</i> , <i>R.s. sociabilis</i>	<i>R.s. plumbeus</i> - Florida Everglades (SE USA), Cuba and I of Pines. <i>R.s. major</i> - East Mexico and Petén (Guatemala). <i>R.s. sociabilis</i> - Honduras and Nicaragua through Panama to South America, occurring W of Andes in Columbia and Ecuador, and E of Andes throughout to NE Argentina, except Guyana Massif and Brazilian Plateau.	NGT. CITES II. Often abundant in suitable habitat throughout most of range.	Not recommended
Slender-billed Kite <i>Rostrhamus hamatus</i>	E Panama, through N & E Colombia, to W, N & SE Venezuela and Surinam; also S through Amazonian Brazil to E Peru and N Bolivia (Beni); s.	NGT. CITES II. Poorly known, and requires further study.	Not recommended
Double-toothed Kite <i>Harpagus bidentatus</i> 2 subspecies <i>H.b. fasciatus</i> , <i>H.b. bidentatus</i>	<i>H.b. fasciatus</i> - E Mexico (Oaxaca and Veracruz) to W Colombia and W Ecuador. <i>H.b. bidentatus</i> - E Colombia and E Ecuador through Amazonia to E Bolivia (Beni) and SE Brazil; Trinidad.	NGT. CITES II. No immediate cause for concern; but species will not persist in areas of extensive deforestation.	Not recommended
Rufous-thighed Kite <i>Harpagus diodon</i>	Locally in the Guianas, through E Brazil (Amazonia W to R Branco and R Purús) S to E Bolivia (Santa Cruz), Paraguay and N Argentina (Misiones, Jujuy and Salta).	NGT. CITES II. Status very poorly known; generally rare, but perhaps overlooked.	Not recommended
Mississippi Kite <i>Ictinia mississippiensis</i>	Southern tier of USA, from Arizona to Florida. Winters in South America, S to N Argentina and Paraguay.	NGT. CITES II. Declined early in century but currently (1993) on increase.	DERP
Plumbeous Kite <i>Ictinia plumbea</i>	NE Mexico (Tamaulipas) S through Central America to South America, W of Andes S to W Ecuador, E of Andes S to Paraguay and N Argentina.	NGT. CITES II. Relatively common in parts of Brazil and Colombia.	Not recommended

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Plumbeous Kite <i>Ictinia plumbea</i>	NE Mexico (Tamaulipas) S through Central America to South America, W of Andes S to W Ecuador, E of Andes S to Paraguay and N Argentina.	NGT. CITES II. Relatively common in parts of Brazil and Colombia.	Not recommended
Red Kite <i>Milvus milvus</i> 2 subspecies <i>M.m. milvus</i> , <i>M.m. fasciicauda</i>	<i>M.m. milvus</i> - S Sweden E to Ukraine and S through C Europe to W & C Mediterranean Basin; Wales; Caucasus; formerly Canary Is. <i>M.m. fasciicauda</i> - Cape Verde Is.	Insufficiently known. CITES II. Historical decline from 19 <sup>th</sup> century or earlier, leading to current disjunct distribution; basic causes direct persecution and use of poisoned baits.	Not recommended
Black Kite	<i>M.m. migrans</i> - NW Africa and Europe E to C Asia (Tien	NGT. CITES II. One of comonest of all diurnal raptors, and	Phase-Out

<i>Milvus migrans</i> 7 subspecies <i>M.m. migrans</i> , <i>M.m. lineatus</i> , <i>M.m. formosanus</i> , <i>M.m. govinda</i> , <i>M.m. affinis</i> , <i>M.m. aegyptius</i> , <i>M.m. parasitus</i>	Shan) and S to Pakistan; winters S to Africa S of Sahara. <b><i>M.m. lineatus</i></b> - Siberia E to Amurland and Japan S to N India, N Burma and N China and Ryukyu Is; winters S to S Iraq, S India and SE Asia. <b><i>M.m. formosanus</i></b> - Taiwan and Hainan (S China). <b><i>M.m. govinda</i></b> - E Pakistan E through India and Sri Lanka to Indochina and Malay Peninsula. <b><i>M.m. affinis</i></b> - Sulawesi and possibly Lesser Sunda Is; E New Guinea and New Britain; N Australia S (in E) to Victoria. <b><i>M.m. aegyptius</i></b> - Egypt, SW Arabia and coastal E Africa S to Kenya. <b><i>M.m. parasitus</i></b> - Africa S of Sahara, Cape Verde Is, Comoro Is and Madagascar.	regionally the commonest, e.g. in Japan and probably in Africa.	
Whistling Kite <i>Haliastur sphenurus</i>	Australia, New Caledonia, and New Guinea (except NW and central mountains).	NGT. CITES II. Common to abundant on coasts, and in tropics where benefits from human activity; locally declining in S through drainage of wetlands and reduction in food supply.	Not recommended
Brahminy Kite <i>Haliastur indus</i> 4 subspecies <i>H.i. indus</i> , <i>H.i. intermedius</i> , <i>H.i. girrenera</i> , <i>H.i. flavirostris</i>	<b><i>H.i. indus</i></b> - Pakistan, India and Sri Lanka through SE Asia to S China. <b><i>H.i. intermedius</i></b> - Malay Peninsula, Greater and Lesser Sundas, Sulawesi and related small islands, Philippines and Sula Is (C Moluccas). <b><i>H.i. girrenera</i></b> - Moluccas, New Guinea, Bismarck Archipelago and Australia. <b><i>H.i. flavirostris</i></b> - Solomon Is.	NGT. CITES II. Has undergone dramatic decline throughout Java. Also declining in non-coastal parts of Thailand.	Not recommended
White-bellied Sea-eagle <i>Haliaeetus leucogaster</i>	India and Sri Lanka through SE Asia, Philippines, Wallacea, New Guinea and Bismarcks to Australia and Tasmania.	NGT. CITES II. Generally common, though some localized declines in S Australia through habitat destruction or disturbance to nest sites; also declining in Thailand.	Not recommended
Sanford's Sea-eagle <i>Haliaeetus sanfordi</i>	Solomon Is, including Bougainville I and Buka I.	NGT. CITES II. Range and total population size small, biology little known; species formerly considered threatened.	Not recommended
African Fish-eagle <i>Haliaeetus vocifer</i>	Senegambia E to Ethiopia and S to South Africa.	NGT. CITES II. Common on many major rivers and lakes, often at high densities for such a large predator, needing only 300-600 m of shore per pair, or 3-15 ha of fishing area; at lower densities along forested rivers.	DERP

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Madagascar Fish-eagle <i>Haliaeetus vociferoides</i>	Madagascar; originally in all W coast regions, and possibly on E coast, but now confined to NW coast. May also have extended to Mauritius historically.	Endangered. CITES II. Only 45-50 breeding pairs at 48 occupied territories estimated in 1985; some pairs with mean inter-nest distance of 1.48 km. More intensive recent surveys (1992) indicate twice the previous known density in S part of range (21 pairs, as opposed to 10); maximum total may be c. 100 pairs.	Not recommended
Pallas's Fish-eagle <i>Haliaeetus leucoryphus</i>	C & S Asia, from Kazakhstan (possibly extinct) to Mongolia and NE China, S to Pakistan, N India, Burma and SC China (Sichuan).	Rare. CITES II. Formerly much more widespread; in first half of present century, breeding range stretched to Caspian Sea, where species last bred in 1947. Appears to have undergone a general decline, for causes that are not fully understood. Breeding population of former USSR may now be extinct	Not recommended
White-tailed Sea-eagle <i>Haliaeetus albicilla</i>	SW Greenland; W Iceland; N & C Eurasia S to Greece and Turkey, S Caspian Sea, L Balkash and Manchuria; formerly	Vulnerable. CITIES I. Marked decline historically from 19 <sup>th</sup> century, with drastic reduction and extinction from extensive	Phase-out

	to lower R Yangtze; has bred on Attu I (W Aleutian Is). Winters S to N Mediterranean, Persian Gulf, Pakistan, N India and SE China.	areas, including British Is, Faeroes, W Europe and most of Mediterranean.	
Bald Eagle <i>Haliaeetus leucocephalus</i> 2 subspecies <i>H.l. washingtoniensis</i> , <i>H.l. leucocephalus</i>	<b><i>H.l. washingtoniensis</i></b> - Aleutian Is, Alaska, Canada and N USA. <b><i>H.l. leucocephalus</i></b> - S USA S to NW Mexico.	NGT. CITES I. Complex situation: N populations not threatened and locally abundant, e.g. in coastal Alaska and British Columbia; but in lower Canada and most of contiguous 48 USA states, numbers reduced and species often considered either threatened or endangered.	DERP
Steller's Sea-eagle <i>Haliaeetus pelagicus</i>	Coastal regions along W Bering Sea, S of Paul's Bay (Koryakland), and Sea of Okhotsk; winters S to Ussuriland, Japan and Korea.	Rare. CITES II. Total world population c. 7500 birds, including 5600 adults; majority (1200-1500 pairs) breed in Kamchatka; c. 2200 birds winter on Hokkaido. Main problems include habitat alterations, with large-scale destruction of old forests; shooting by hunters; and natural collapse of eyries.	Elevated to PMP
Lesser Fishing-eagle <i>Ichthyophaga humilis</i> 2 subspecies <i>I.h. plumbea</i> , <i>I.h. humilis</i>	<b><i>I.h. plumbea</i></b> - Kashmir SE through Himalayas of India and Nepal to Burma, N Indochina and Hainan. <b><i>I.h. humilis</i></b> - Malay Peninsula (from Tenasserim) and Sumatra through Borneo to Sulawesi and Banggai Is; recently recorded on Buru (S Moluccas).	NGT. CITES II. Apparently uncommon in Sulawesi, Borneo and Sumatra, but common in reserve of Padang-Sugihan (S Sumatra) in mid-1980s; said to be locally common along forested streams in Burma; probably relatively secure in all of these areas. However, declining in Nepal and India,	Not recommended
Grey-headed Fishing-eagle <i>Ichthyophaga ichthyaetus</i>	India, Nepal and Sri Lanka E through Indochina and Malay Peninsula to Greater Sundas, N & E Philippines and Sulawesi.	NGT. CITES II. Species seems to be secure, but locally numbers reduced or species extirpated, primarily through loss of forests.	Not recommended
Palm-nut Vulture <i>Gypohierax angolensis</i>	Senegambia E to Kenya coast and S to Angola and NE South Africa.	NGT. CITES II.	DERP
Bearded Vulture <i>Gypaetus barbatus</i> 2 subspecies <i>G.b. barbatus</i> , <i>G.b. meridionalis</i>	<b><i>G.b. barbatus</i></b> - NW Africa and SW Europe through Turkey, Egypt, Middle East, Iran and Afghanistan to Mongolia and C & NE China. <b><i>G.b. meridionalis</i></b> - sw Arabia and very locally in E & S Africa.	NGT. CITES II. Currently considered near-threatened. Massive decline in 19 <sup>th</sup> and 20 <sup>th</sup> centuries, particularly in Europe, but also in N and S Africa and W Asia; only small isolated populations survived.	Phase-out
Egyptian Vulture <i>Neophron percnopterus</i> 2 subspecies <i>N.p. percnopterus</i> , <i>N.p. ginginianus</i>	<b><i>N.p. percnopterus</i></b> - S Europe E to C Asia (E Kazakhstan) and NW India, and S through N Africa, Arabia and Sahel zone to N Tanzania; SW Angola and NW Namibia; also Canary Is, Cape Verde Is and Socotra. <b><i>N.p. ginginianus</i></b> - Nepal and India (except NW).	NGT. CITES II. Has undergone fairly general decline, at least in Europe; population now more stable, and even recovering in some areas.	DERP

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Hooded Vulture <i>Necrosyrtes monachus</i>	Mauritania E to Ethiopia and S to Namibia and South Africa, except areas of uninterrupted forest or desert.	NGT. CITES II.	Elevated to PMP
African White-backed Vulture <i>Gyps africanus</i>	Mauritania E to Ethiopia and S to N and E South Africa.	NGT. CITES II.	PMP
Indian White-backed Vulture <i>Gyps bengalensis</i>	SE Iran, Afghanistan (perhaps irregularly) and Pakistan through Nepal and India to SC China (Yunnan), Indochina and N Malay Peninsula.	NGT. CITES II.	Phase-out
Long-billed Vulture <i>Gyps indicus</i> 2 subspecies	<b><i>G.i. tenuirostris</i></b> - Lower Himalayas, from Kashmir through Nepal to Assam, and SE into Indochina and N Malay Peninsula.	NGT. CITES II. Fairly common throughout most of range, although usually less numerous than sympatric <i>G. bengalensis</i> . Rare and local throughout SE Asia, but reasons for decline	Not recommended

<i>G.i. tenuirostris</i> , <i>G.i. indicus</i>	<i>G.i. indicus</i> - SE Pakistan and India S of R Ganges, except extreme S.	unknown; may now be extinct in Thailand.	
Ruppell's Griffon <i>Gyps rueppellii</i> 2 subspecies <i>G.r. rueppellii</i> , <i>G.r. erlangeri</i>	<i>G.r. rueppellii</i> - SW Mauritania E to Sudan, N to Air Massif (NW Niger) and S to Uganda, Kenya and N Tanzania. <i>G.r. erlangeria</i> - Ethiopia, Eritrea and NW Somalia, possibly ranging to S Arabia.	NGT. CITES II. Less studied than other griffons ; several colonies in Kenya reported to have declined through agricultural encroachment and poisoning. Widely killed for use in traditional medicines.	PMP
Himalayan Griffon <i>Gyps himalayensis</i>	Himalayas from N Pakistan and N India through S Tibet and Nepal to Bhutan, N Assam and C China; also NE through Pamirs to Tien Shan, and possibly also into Tabagatai and Altai.	NGT. CITES II.	Not Recommended
Eurasian Griffon <i>Gyps fulvus</i> 2 subspecies <i>Gyps f. fulvus</i> , <i>Gyps f. fulvescens</i>	<i>Gyps f. fulvus</i> - NW Africa and Iberian Peninsula E through Balkans, Turkey, Middle East, Arabia and Iran to Pamirs and Altai. <i>Gyps f. fulvescens</i> - Afghanistan, Pakistan and N India E to Assam.	NGT. CITES II.	Phase-out
Cape Griffon <i>Gyps coprotheres</i>	Centered on Lesotho and South Africa, extending to Namibia, Botswana, Zimbabwe, S Mozambique and Sqaziland, rarely wandering N to Zambia.	Rare. CITES II. At least 83 colonies and 4400 breeding pairs estimated to remain, but has undergone range retraction and loss of peripheral colonies; declines continue at some major colonies.	PMP
Eurasian Black (Cinereous) Vulture <i>Aegypius monachus</i>	S Palearctic, from Spain, Balearic Is and Balkans through Turkey, Caucasus, Iran and Afghanistan to S Siberia, Mongolia, N China and extreme N India. Winters S to Sudan, Middle East, Pakistan, NW India and Korea.	Vulnerable. CITES II. Threatened at world level, partly because nests on trees which are often easily accessible.	SSP
Lappet-faced Vulture <i>Torgos tracheliotus</i> 3 subspecies <i>T.t. tracheliotus</i> , <i>T.t. nubicus</i> , <i>T.t. negevenis</i>	<i>T.t. tracheliotus</i> - Extreme SW Morocco; S Mauritania E to Ethiopia and Kenya, S to South Africa. <i>T.t. nubicus</i> - Egypt and N Sudan. <i>T.t. negevenis</i> - S Isreal and Arabian Peninsula.	NGT. CITES II. Thinly scattered as a breeding species throughout its wide range, with concentrations of up to c. 40 pairs found only in Namibia, Botswana, Zimbabwe, South Africa, Tanzania and possibly Arabia.	PMP
White-headed Vulture <i>Trigonoceps occipitalis</i>	Senegal E to Ethiopia (including Dahlak Archipelago) and Somalia, then S to Namibia and N South Africa.	NGT. CITES II. Generally uncommon, at 0.25k-1.2 birds/100 km of road counts, with highest values of up to 9.3 birds/100 km from woodland-grassland mosaic in Cameroon and Uganda.	Phase-out
Red-headed Vulture <i>Sarcogyps calvus</i>	E Pakistan through India, except extreme S, and Nepal to SC China (S Yunnan), Burma, Indochina and N Malay Peninsula.	NGT. CITES II. Because territorial, never as numerous as other sympatric vulture species.	Phase-out
<b>Common Name</b> <b>Scientific Name</b>	<b>Range</b>	<b>Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u>)</b>	<b>TAG Recommendation</b>
Short-toed Snake-eagle <i>Ciraetus gallicus</i>	NW Africa and SW Europe N to Gulf of Finland and E to L Balkash and Iran; Indian Subcontinent; Lesser Sundas (from Lombok to Timor). W populations winter in Sahel zone.	NGT. CITES II. Declined markedly in past, disappearing from most of C & N Europe in 19 <sup>th</sup> century; possibly stable at end of 20 <sup>th</sup> century.	Not recommended
Beaudouin's Snake-eagle <i>Ciraetus beaudouini</i>	S Mauritania and Senegambia E to SW Sudan, N Uganda and NW Kenya.	NGT. CITES II. Generally uncommon.	Not recommended
Black-breasted Snake-eagle <i>Ciraetus pectoralis</i>	E Sudan and Ethiopia S so South Africa.	NGT. CITES II. Widespread and often locally common.	Not recommended
Brown Snake-eagle <i>Ciraetus cinereus</i>	Senegambia E to N Ethiopia and S to South Africa.	NGT. CITES II. Widespread and conspicuous but often at low density, such as 1 pair/200 km <sup>2</sup> .	Not recommended
Southern Banded Snake-eagle <i>Ciraetus fasciolatus</i>	Kenya to NE South Africa along the E coast of Africa and further inland along major rivers.	NGT. CITES II. Currently considered near-threatened. Locally common, but habitat often patchy and restricted.	Not recommended
Western Banded Snake-eagle <i>Ciraetus cinerascens</i>	Senegambia E to S Sudan and W Ethiopia, then S to R Zambezi, occurring S to Angola and Namibia in W, and Zimbabwe and Zambia in E.	NGT. CITES II. Locally common but with patchy linear distribution. Vulnerable to degradation of riverine habitat, e.g. in NE Namibia, where only 14 pairs now estimated to occur.	Not recommended

Bateleur Eagle <i>Terathopius ecaudatus</i>	Senegambia E to Sudan and Ethiopia then S to Namibia and South Africa.	NGT. CITES II. Widespread and common at densities of 1 pair/140-200 km <sup>2</sup> . In Kenya, or 1 pair/30-60 km <sup>2</sup> . In Transvaal (estimated total of 600 pairs).	DERP
Crested Serpent-eagle <i>Spilornis cheela</i> 21 subspecies <i>S.c. cheela</i> , <i>S.c. melanotis</i> , <i>S.c. spilogaster</i> , <i>S.c. burmanicus</i> , <i>S.c. davisoni</i> , <i>S.c. minimus</i> , <i>S.c. ricketti</i> , <i>S.c. perplexus</i> , <i>S.c. hoya</i> , <i>S.c. rutherfordi</i> , <i>S.c. palawanensis</i> , <i>S.c. pallidus</i> , <i>S.c. richmondi</i> , <i>S.c. natunensis</i> , <i>S.c. malayensis</i> , <i>S.c. batu</i> , <i>S.c. abbotti</i> , <i>S.c. asturinus</i> , <i>S.c. sipora</i> , <i>S.c. bido</i> , <i>S.c. baweanus</i>	<i>S.c. cheela</i> - N India and Nepal. <i>S.c. melanotis</i> - India S from Gujarat and Gangetic Plain. <i>S.c. spilogaster</i> - Sri Lanka. <i>S.c. burmanicus</i> - Burma, SW China, Thailand and Indochina. <i>S.c. davisoni</i> - Andaman Is; possibly also Nicobar Is. <i>S.c. minimus</i> - C Nicobar Is. <i>S.c. ricketti</i> - N Vietnam and SC & SE China. <i>S.c. perplexus</i> - S Ryukyu Is. <i>S.c. hoya</i> - Taiwan. <i>S.c. rutherfordi</i> - Hainan. <i>S.c. palawanensis</i> - Palawan group (Philippines). <i>S.c. pallidus</i> - Lowlands of N Borneo. <i>S.c. richmondi</i> - S Borneo. <i>S.c. natunensis</i> - Natuna Is and Belitung I (off W & SW Borneo). <i>S.c. malayensis</i> - Malay Peninsula (from S Tenasserim), nearby Anambas Is and N Sumatra. <i>S.c. batu</i> - S Sumatra and Batu Is (off W Sumatra). <i>S.c. abbotti</i> - Simeulue I (off W Sumatra). <i>S.c. asturinus</i> - Nias I (off W Sumatra). <i>S.c. sipora</i> - Mentawai Is (off W Sumatra). <i>S.c. bido</i> - Java and Bali. <i>S.c. baweanus</i> - Bawean I (off N Java).	NGT. CITES II. Throughout extensive range generally widespread and common, sometimes abundant, but locally uncommon.	Not recommended

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Great Nicobar Serpent-eagle <i>Spilornis klossi</i>	Great Nicobar I (Nicobar Is.).	NGT. CITES II. Seen only twice during recent raptor survey, on both occasions perched inside forest. Reported by one source to be common.	Not recommended
Kinabalu Serpent-eagle <i>Spilornis kinabaluensis</i>	Mountains of N Borneo, recorded on Mt Mulu (NE Sarawak), MT Murud (NE Kalimantan) and MT Kinabalu (W Sabah).	Rare. CITES II. Status very poorly known. May be threatened in long-term by clear-felling of forests.	Not recommended
Sulawesi Serpent-eagle <i>Spilornis rufipectus</i> 2 subspecies <i>S.r. rufipectus</i> , <i>S.r. sulaensis</i>	<i>S.r. rufipectus</i> - Sulawesi, and islands of Salayar, Muna and Buntung, off S Sulawesi. <i>S.r. sulaensis</i> - Banggai and Sula Is, off E Sulawesi.	NGT. CITES II.	Not recommended
Philippine Serpent-eagle <i>Spilornis holospilus</i>	N & E Philippine Is, from Luzon S to Mindanao.	NGT. CITES II.	Not recommended
Andaman Serpent-eagle <i>Spilornis elgini</i>	Andaman Is.	Rare. CITES II. Common, sometimes reaching surprisingly high densities; most numerous raptor on Andaman Is. Probably should not be classed as threatened, but rapidly growing human population may encroach on forest habitat in future.	Not recommended
Congo Serpent-eagle <i>Dryotriorchis spectabilis</i>	<i>D.s. spectabilis</i> - Sierra Leone E to S Nigeria and NW Cameroon.	NGT. CITES II.	Not recommended

2 subspecies <i>D.s. spectabilis</i> , <i>D.s. batesi</i>	<i>D.s. batesi</i> - S Cameroon E to W Uganda and S to Gabon and SC Zaire; N Angola.		
Madagascar Serpent-eagle <i>Eutriorchis astur</i>	Madagascar, originally along all moist eastern regions, but now confined to NE.	Endangered. CITES II.	Not recommended
Western Marsh-harrier <i>Circus aeruginosus</i> 2 subspecies <i>C.a. aeruginosus</i> , <i>C.a. harterti</i>	<i>C.a. aeruginosus</i> - Europe and Asia Minor E into C Asia, E to upper R Yenisey and Mongolia; winters in W & S Europe, Africa S of Sahara, and in Indian Subcontinent and Sri Lanka. <i>C.a. harterti</i> - NW Africa, from Morocco to Tunisia.	NGT. CITES II. Population trends have varied in Europe throughout 20 <sup>th</sup> century, but overall decline in numbers and range.	Not recommended
African Marsh-harrier <i>Circus ranivorus</i>	Zaire, Uganda and Kenya S to South Africa; ranges NE to Ethiopia and Somalia.	NGT. CITES II. Common on major wetlands of E and S Africa, especially in Botswana, Zambia and Uganda.	Not recommended
Eastern Marsh-harrier <i>Circus spilonotus</i> 2 subspecies <i>C.s. spilonotus</i> , <i>C.s. spilothonax</i>	<i>C.s. spilonotus</i> - SE Siberia and Mongolia to Ussuriland, Sakhalin, NE China and N Japan; winters from S Japan and SE Asia and S China to Indonesia and Philippines. <i>C.s. spilothonax</i> - C & E New Guinea.	NGT. CITES II. Very little information available about population sizes and trends. Generally rare and patchily distributed in former USSR; uncommon breeder in N Japan.	Not recommended
Pacific Marsh-harrier <i>Circus approximans</i>	S New Guinea (breeding uncertain), Melanesia, Australia, New Zealand and Polynesia E to Tonga. Introduced to Society Is.	NGT. CITES II. Common in suitable habitat, but local declines where wetlands drained. Nests vulnerable to human disturbance.	Not recommended
Madagascar Marsh-harrier <i>Circus maillardi</i> 2 subspecies <i>C.m. maillardi</i> , <i>C.m. macroscelus</i>	<i>C.m. maillardi</i> - Reunion I. <i>C.m. macroscelus</i> - Madagascar and Comoro Is.	NGT. CITES II. Currently considered near-threatened. Widely distributed on Madagascar, both coastally and inland, but nowhere common and not present on all wetlands.	Not recommended
Long-winged Harrier <i>Circus buffoni</i>	SW Columbia to the Guianas, Trinidad and Tobago, and NE Brazil (Pará and Maranhão), then S to E Bolivia, N & C Argentina and C Chile.	NGT. CITES II. Widespread, but apparently rather local. Very poorly known.	Not recommended

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Spotted Harrier <i>Circus assimilis</i>	Australia; Sulawesi and Sula Is (C Moluccas); also recorded on Sumba and Timor (Lesser Sundas), but probably migrants.	NGT. CITES II. Generally uncommon but widespread; may have benefited locally in S by creation of habitat, and increase in native and introduced prey.	Not recommended
Black Harrier <i>Circus maurus</i>	S South Africa, ranging N to Transvaal, Lesotho, S Namibia and S Botswana.	NGT. CITES II. Currently considered near-threatened. Widespread and locally common within restricted breeding habitat.	Not recommended
Northern (Hen) Harrier <i>Circus cyaneus</i> 2 subspecies <i>C.c. cyaneus</i> , <i>C.c. hudsonius</i>	<i>C.c. cyaneus</i> - Europe and N Asia E to Kamchatka ; winters from Europe and NW Africa through S Asia to SE China and Japan. <i>C.c. hudsonius</i> - North America, S to NW Mexico and SE Virginia (USA) ; winters S to N South America.	NGT. CITES II. Population trends vary regionally, but generally seems to be in decline.	<i>C.c. hudsonius</i> = DERP
Cinereous Harrier <i>Circus cinereus</i>	Columbia and Ecuador (above treeline) S through Peru, Bolivia and Paraguay to extreme S Brazil, then S to Tierra del Fuego and Falkland Is.	NGT. CITES II. Overall in no danger; in S portions of range can be fairly common, in some areas second most abundant raptor after Chimango Caracara ( <i>Milvago chimango</i> ).	Not recommended
Pallid Harrier <i>Circus macrourus</i>	Ukraine and SW Russia E to L Balkash region, NW China. Winters mainly in Africa S of Sahara, and from Pakistan, India and Sri Lanka E to S China, and irregularly to E China.	NGT. CITES II. Drastically declining, particularly in Europe.	Not recommended
Pied Harrier <i>Circus melanoleucos</i>	S Siberia (L Baikal) and Mongolia E to Amurland, Manchuria and N Korea; has bred in N Burma and NE India	NGT. CITES II. Relatively small range, apparently with limited numbers; population size and trends poorly known; total of	Not recommended



	(Assam). Winters from India and Sri Lanka to S China, Borneo and Philippines.	14,534 birds counted migrating over Beidaihe (NE China) in autumn 1986.	
Montagu's Harrier <i>Circus pygargus</i>	NW Africa and S & C Europe E through Caspian lowlands to Kazakhstan and upper R Yenisey. Winters in Africa S of Sahara and Indian Subcontinent S to Sri Lanka.	NGT. CITES II. In decline, mainly due to transformation of natural or semi-natural habitats and high rate of breeding failure in agricultural areas, in turn caused by nestlings dying following harvesting of crops.	Not recommended
African Harrier-hawk <i>Polyboroides typus</i> 2 subspecies <i>P.t. pectoralis</i> , <i>P.t. typus</i>	<b><i>P.t. pectoralis</i></b> - Senegambia E to W Sudan, N to Air Mountains (NW Niger) and S to Zaire. <b><i>P.t. typus</i></b> - E Sudan to Eritrea and S to Angola and South Africa.	NGT. CITES II. One of commonest birds of prey in forests and woodlands of W and C Africa, especially where oil and <i>Borassus</i> palms abundant.	Not recommended
Madagascar Harrier-hawk <i>Polyboroides radiatus</i>	Madagascar.	NGT. CITES II. One of the five commonest raptors on Madagascar.	Not recommended
Lizard Buzzard <i>Kaupifalco monogrammicus</i> 2 subspecies <i>K.m. monogrammicus</i> , <i>K.m. meridionalis</i>	<b><i>K.m. monogrammicus</i></b> - Senegambia E to Ethiopia and S to Uganda and Kenya. <b><i>K.m. meridionalis</i></b> - S Kenya S to N South Africa and W to Angola and N Namibia.	NGT. CITES II. Vulnerable to cutting of woodland and burning or grazing of grass cover,	Not recommended
Dark Chanting-goshawk <i>Melierax metabates</i> 5 subspecies <i>M.m. theresae</i> , <i>M.m. neumanni</i> , <i>M.m. ignoscens</i> , <i>M.m. metabates</i> , <i>M.m. mehowi</i>	<b><i>M.m. theresae</i></b> - SW Morocco. <b><i>M.m. neumanni</i></b> - Mali E to N Sudan. <b><i>M.m. ignoscens</i></b> - SW Arabian Peninsula. <b><i>M.m. metabates</i></b> - Senegambia E to Ethiopia and S to NE Zaire and N Tanzania. <b><i>M.m. mehowi</i></b> - Angola E to S Tanzania and S to N Namibia and NE South Africa.	NGT. CITES II.	Not recommended

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Eastern Chanting-goshawk <i>Melierax poliopterus</i>	SE Ethiopia and Somalia S to E Uganda and N Tanzania	NGT. CITES II.	Not recommended
Pale Chanting-goshawk <i>Melierax canorus</i> 2 subspecies <i>M.c. argentior</i> , <i>M.c. canorus</i>	<b><i>M.c. argentior</i></b> - S Angola S and E through Namibia, Botswana and Zimbabwe to NE South Africa and Transvaal and NW Orange Free State. <b><i>M.c. canorus</i></b> - S South Africa, in Cape Province, SE Orange Free State and (formerly) S Natal.	NGT. CITES II.	Not recommended
Gabar Goshawk <i>Micronisus gabar</i> 2 subspecies <i>M.g. aequatorius</i> , <i>M.g. gabar</i>	<b><i>M.g. aequatorius</i></b> - Ethiopian highlands S to Zaire, Zambia and N Mozambique. <b><i>M.g. gabar</i></b> - S Angola, Zambia and Mozambique S to South Africa.	NGT. CITES II.	Not recommended
Grey-bellied Goshawk <i>Accipiter poliogaster</i>	E of Andes from Colombia and NE Ecuador, S Venezuela and the Guianas S through Brazil (except NE), E Peru, Bolivia and Paraguay to N Argentina (Misiones).	NGT. CITES II. Currently considered near-threatened. Very little information available. Generally seems to be rare, but wide distribution suggests no immediate overall threat.	Not recommended
Crested Goshawk <i>Accipiter trivirgatus</i> 11 subspecies <i>A.t. layardi</i> , <i>A.t. peninsulae</i> , <i>A.t. indicus</i> , <i>A.t. formosae</i> , <i>A.t. trivirgatus</i> , <i>A.t. niasensis</i> , <i>A.t. javanicus</i> ,	<b><i>A.t. layardi</i></b> - Sri Lanka. <b><i>A.t. peninsulae</i></b> - SW India. <b><i>A.t. indicus</i></b> - NC, NE & E India and Nepal to S China, including Hainan, and S to Indochina and Malay Peninsula. <b><i>A.t. formosae</i></b> - Taiwan. <b><i>A.t. trivirgatus</i></b> - Sumatra. <b><i>A.t. niasensis</i></b> - Nias I (off W Sumatra).	NGT. CITES II. Apparently uncommon to fairly common throughout extensive range; possibly commoner than thought simply not detected because of unobtrusive habits and preference for forest interiors.	Not recommended

<i>A.t. microstictus</i> , <i>A.t. palawanus</i> , <i>A.t. extimus</i> , <i>A.t. castroi</i>	<i>A.t. javanicus</i> - Java; recently recorded on Bali. <i>A.t. microstictus</i> - Borneo. <i>A.t. palawanus</i> - Palawan, Calamianes (SW Philippines); may also be race of Natuna Is (off W Borneo). <i>A.t. extimus</i> - SE Philippines. <i>A.t. castroi</i> - Polillo Is, off E Luzon (N Philippines).		
Sulawesi Goshawk <i>Accipiter griseiceps</i>	Sulawesi and off-lying Togian Is, Muna and Butung.	NGT. CITES II. Generally reckoned to be uncommon, e.g. in Dumoga-Bone National Park (N Sulawesi); may actually be commoner than thought but infrequently observed due to unobtrusive behaviour.	Not recommended
Red-chested Goshawk <i>Accipiter toussenelii</i> 4 subspecies <i>A.t. macroscelides</i> , <i>A.t. toussenelii</i> , <i>A.t. canescens</i> , <i>A.t. lopezi</i>	<i>A.t. macroscelides</i> - Senegambia to W Cameroon in rain forest. <i>A.t. toussenelii</i> - S Cameroon to Gabon, in lower Zaire River basin. <i>A.t. canescens</i> - Upper Zaire River basin. <i>A.t. lopezi</i> - Bioko I (Fernando Po).	NGT. CITES II.	Not recommended

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African Goshawk <i>Accipiter tachiro</i> 5 subspecies <i>A.t. unduliventer</i> , <i>A.t. croizati</i> , <i>A.t. sparsimfasciatus</i> , <i>A.t. pembaensis</i> , <i>A.t. tachiro</i> ,	<i>A.t. unduliventer</i> - Ethiopian highlands. <i>A.t. croizati</i> - SW Ethiopia. <i>A.t. sparsimfasciatus</i> - <b>Somalia, through E Africa, Zanzibar and SE Zaire</b> to N Angola, N Zambia, N Malawi and N Mozambique. <i>A.t. pembaensis</i> - Pemba I (Tanzania). <i>A.t. tachiro</i> - S Angola, S Zambia, S Malawi and S Mozambique S to South Africa.	NGT. CITES II.	Not recommended
Chestnut-flanked Sparrowhawk <i>Accipiter castanilius</i>	Nigeria E to Zaire River basin. Purported presence in Upper Guinea forests W of Nigeria requires confirmation.	NGT. CITES II. Secretive, but thought to be common in larger tracts of pristine forest, of which considerable areas remain. Vulnerable to deforestation, although will enter clearings to hunt; numbers may be much reduced in parts of range.	Not recommended
Shikra <i>Accipiter badius</i> 6 subspecies <i>A.b. cenchroides</i> , <i>A.b. dussumieri</i> , <i>A.b. badius</i> , <i>A.b. poliopsis</i> , <i>A.b. sphenurus</i> , <i>A.b. polyzonoides</i>	<i>A.b. cenchroides</i> - Azerbaijan E to Kazakhstan and Iran E to NW India, migrating further S in winter. <i>A.b. dussumieri</i> - C India and Bangladesh. <i>A.b. badius</i> - SW India and Sri Lanka. <i>A.b. poliopsis</i> - NE India E to S China, S to Thailand and Vietnam. <i>A.b. sphenurus</i> - Senegambia E to SW Arabia, S to N Zaire and N Tanzania. <i>A.b. polyzonoides</i> - S Zaire and S Tanzania to N South Africa.	NGT. CITES II.	Not recommended
Nicobar Sparrowhawk <i>Accipiter butleri</i> 2 subspecies <i>A.b. butleri</i> , <i>A.b. obsoletus</i>	<i>A.b. butleri</i> - Car Nicobar I (N Nicobar Is). <i>A.b. obsoletus</i> - Katchall I and possibly Camorta I (C Nicobar Is).	NGT. CITES II. Various reported as not uncommon and fairly common, but not encountered during recent raptor surveys on Car Nicobar.	Not recommended

Levant Sparrowhawk <i>Accipiter brevipes</i>	SE Europe, SW Ukraine and S Russia E to W Kazakhstan; more locally in Turkey, Caucasus and Iran. Thought to winter mainly in E Sahel zone of sub-Saharan Africa.	NGT. CITES II. Size and trends of populations insufficiently known, but species less rare than was thought before 1980's.	Not recommended
Chinese Goshawk <i>Accipiter soloensis</i>	S Ussuriland and Korea; C & E China and Taiwan. Winters from extreme SE China and Hainan, S through Indochina, Philippines and Indonesia to W New Guinea and occasionally W Micronesia.	NGT. CITES II.	Not recommended
Frances's Sparrowhawk <i>Accipiter francesii</i> 4 subspecies <i>A.f. francesii</i> , <i>A.f. griveaudi</i> , <i>A.f. pusillus</i> , <i>A.f. brutus</i>	<b><i>A.f. francesii</i> - Madagascar.</b> <i>A.f. griveaudi</i> - Ngadzidja (Grand Comoro), Comoro Is. <i>A.f. pusillus</i> - Ndzuani (Anjouan), Comoro Is. <i>A.f. brutus</i> - Maore (Mayotte), Comoro Is.	NGT. CITES II. The commonest <i>Accipiter</i> on Madagascar, but uncommon in the arid S.	Not recommended
Spot-tailed Goshawk <i>Accipiter trinotatus</i>	Sulawesi and off-lying islands of Talisei, Muna and Butung.	NGT. CITES II.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Variable Goshawk <i>Accipiter novaehollandiae</i> 23 subspecies <i>A.n. sylvestris</i> , <i>A.n. polionotus</i> , <i>A.n. albiventris</i> , <i>A.n. Obiensis</i> , <i>A.n. griseogularis</i> , <i>A.n. mortyi</i> , <i>A.n. hiogaster</i> , <i>A.n. pallidiceps</i> , <i>A.n. leucosomus</i> , <i>A.n. pallidimas</i> , <i>A.n. manusi</i> , <i>A.n. bougainvillei</i> , <i>A.n. rufoschistaceus</i> , <i>A.n. rubianae</i> , <i>A.n. pulchellus</i> , <i>A.n. malaitae</i> , <i>A.n. misulae</i> , <i>A.n. misoriensis</i> , <i>A.n. dampieri</i> , <i>A.n. lavongai</i> , <i>A.n. lihirensis</i> , <i>A.n. matthiae</i> , <i>A.n. novaehollandiae</i>	<i>A.n. sylvestris</i> - Lesser Sundas. <i>A.n. polionotis</i> - Banda I (Moluccas), Tanimbar Is. <i>A.n. albiventris</i> - Tayandu I (Moluccas), Kai Is. <i>A.n. obiensis</i> - Obi (C Moluccas). <i>A.n. griseogularis</i> - N Moluccas. <i>A.n. mortyi</i> - Morotai (N Moluccas). <i>A.n. hiogaster</i> - S Moluccas. <i>A.n. pallidiceps</i> - Buru (S Moluccas). <i>A.n. leucosomus</i> - New Guinea. <i>A.n. pallidimas</i> - D'Entrecasteaux Is (New Guinea). <i>A.n. manusi</i> - Admiralty Is. <i>A.n. bougainvillei</i> - Bougainville (N Solomons). <i>A.n. rufoschistaceus</i> - Choiseul, Santa Isabel, Florida Is (C Solomon Is). <i>A.n. rubianae</i> - C Solomon Is. <i>A.n. pulchellus</i> - Guadalcanal (SW Solomon Is). <i>A.n. malaitae</i> - Malaita (SE Solomon Is). <i>A.n. misulae</i> - Louisiade Is (New Guinea). <i>A.n. misoriensis</i> - Biak I. <i>A.n. dampieri</i> - New Britain. <i>A.n. lavongai</i> - New Hanover and New Ireland (Bismarck Archipelago). <i>A.n. lihirensis</i> - Lihir and Tanga Is. <i>A.n. matthiae</i> - St Matthias I (Bismarck Archipelago). <i>A.n. novaehollandiae</i> - N & E Australia and Tasmania.	NGT. CITES II. Uncommon in S and NW Australia, but generally common in tropics.	Not recommended
Australasian Goshawk <i>Accipiter fasciatus</i> 11 subspecies <i>A.f. natalis</i> , <i>A.f. tjendanae</i> , <i>A.f. wallacii</i> , <i>A.f. stresemanni</i> , <i>A.f. hellmayri</i> ,	<i>A.f. natalis</i> - Christmas I (Indian Ocean). <i>A.f. tjendanae</i> - Sumba (Lesser Sundas). <i>A.f. wallacii</i> - Lesser Sundas, from Lombok E to Babar. <i>A.f. stresemanni</i> - Islets between Sulawesi and Lesser Sundas. <i>A.f. hellmayri</i> - Timor, Alor, Roti (Lesser Sundas).	NGT. CITES II. Common and widespread; local declines in S Australia where habitat clearance extensive, but species has benefited from introduction of rabbit; preys on introduced birds.	Not recommended

<i>A.f. savu</i> , <i>A.f. polycryptus</i> , <i>A.f. dogwa</i> , <i>A.f. didimus</i> , <i>A.f. fasciatus</i> , <i>A.f. vigilax</i>	<i>A.f. savu</i> - Sawu (Lesser Sundas). <i>A.f. polycryptus</i> - E New Guinea. <i>A.f. dogwa</i> - S New Guinea. <i>A.f. didimus</i> - N Australia; Buru (S Moluccas). <i>A.f. fasciatus</i> - Timor (Lesser Sundas); Australia and Tasmania; Rennell and Bellona Is (Solomons). <i>A.f. vigilax</i> - New Caledonia, Loyalty Is, Vanuatu.		
Black-mantled Goshawk <i>Accipiter melanochlamys</i> 2 subspecies <i>A.m. melanochlamys</i> , <i>A.m. schistacinus</i>	<i>A.m. melanochlamys</i> - Vogelkop (W New Guinea). <i>A.m. schistacinus</i> - Montane C & E New Guinea.	NGT. CITES II. Widespread in all montane areas of mainland New Guinea but lives in remote, rugged and densely forested areas and is seldom encountered by ornithologists.	Not recommended

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Pied Goshawk <i>Accipiter albogularis</i> 5 subspecies <i>A.a. eichhorni</i> , <i>A.a. woodfordi</i> , <i>A.a. albogularis</i> , <i>A.a. gilvus</i> , <i>A.a. sharpei</i>	<i>A.a. eichhorni</i> - Feni Is (Bismarcks). <i>A.a. woodfordi</i> - N, E & S Solomons. <i>A.a. albogularis</i> - San Cristobal, Santa Ana (Solomons). <i>A.a. sharpei</i> - Santa Cruz Is.	NGT. CITES II. Appears to be common, at any rate in parts of range, but biology and population trends virtually unknown.	Not recommended
New Caledonia Sparrowhawk <i>Accipiter haplochrous</i>	New Caledonia.	NGT. CITES II. Restricted distribution, but widespread throughout main island.	Not recommended
Fiji Goshawk <i>Accipiter rufitorques</i>	Fiji Is.	NGT. CITES II.	Not recommended
Moluccan Goshawk <i>Accipiter henicogrammus</i>	N Moluccas, on Morotai, Halmahera, Bacan and perhaps Tenate.	NGT. CITES II. Apparently uncommon, but unobtrusive; possibly commoner than thought.	Not recommended
Slaty-backed Goshawk <i>Accipiter luteoschistaceus</i>	New Britain.	NGT. CITES II. Restricted distribution and presumably low total population size. Apparently scarce, and seldom seen by ornithologists; biology unknown.	Not recommended
Imitator Sparrowhawk <i>Accipiter imitator</i>	Bougainville, Choiseul and Santa Isabel, in N & C Solomon Is.	Rare. CITES II. Restricted distribution, and presumably low total population size; habitat subject to deforestation in lowlands. Seldom encountered by ornithologists, and biology unknown.	Not recommended
Grey-headed Goshawk <i>Accipiter poliocephalus</i>	W Papuan Is and Aru Is through New Guinea to Fergusson I (D'Entrecasteaux Is) and Misima I and Tagula I (Louisade Archipelago).	NGT. CITES II.	Not recommended
New Britain Goshawk <i>Accipiter princeps</i>	New Britain.	NGT. CITES II. Currently considered near-threatened. Scarce, and seldom encountered by ornithologists; biology unknown.	Not recommended
Tiny Hawk <i>Accipiter superciliosus</i> 2 subspecies <i>A.s. fontanieri</i> , <i>A.s. superciliosus</i>	<i>A.s. fontanieri</i> - Nicaragua S to W Columbia and W Ecuador. <i>A.s. superciliosus</i> - E of Andes, from Colombia E through Venezuela (except NW) to the Guianas, and S through Ecuador, E Peru, Bolivia (Beni, Santa Cruz) and Brazil to Paraguay and N Argentina (Misiones).	NGT. CITES II. Status very poorly known, but large range and tendency to use second growth forest suggest species in no immediate danger.	Not recommended
Semi-collared Hawk <i>Accipiter collaris</i>	SW Venezuela (Mérida, Táchira) S, on W & E slopes of Andes, through Colombia to Ecuador; recent range extension of 1500 km to S Peru.	NGT. CITES II. Currently considered near-threatened. Very little known; thorough surveys needed.	Not recommended
Red-thighed Sparrowhawk <i>Accipiter erythropus</i>	<i>A.e. erythropus</i> - Senegambia to Nigeria. <i>A.e. zenkeri</i> - Cameroon E to W Uganda and S to N Angola	NGT. CITES II. Small size suggests may occur at high density in pristine forest, large tracts of which remain in C Africa.	Not recommended

2 subspecies <i>A.e. erythropus</i> , <i>A.e. zenkeri</i>	and C Zaire.		
African Little Sparrowhawk <i>Accipiter minullus</i>	S Sudan and Ethiopia S to South Africa and W to Angola and Namibia.	NGT. CITES II.	Not recommended
Japanese Sparrowhawk <i>Accipiter gularis</i> 3 subspecies <i>A.g. sibiricus</i> , <i>A.g. gularis</i> , <i>A.g. iwasakii</i>	<i>A.g. sibiricus</i> - Upper R Ob and Mongolia E to middle R Lena, E China and Taiwan; presumably winters from Andaman and Nicobar Is E to S China and Greater Sundas. <i>A.g. gularis</i> - Sakhalin, S Kuril Is and Japan; winters S to Philippines, Greater Sundas, N Sulawesi and Timor. <i>A.g. iwasakii</i> - S Ryukyu Is (Iriomote, Ishigaki).	NGT. CITES II. Status and trends of populations very poorly known, with virtually no figures available.	Not recommended

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Besra <i>Accipiter virgatus</i> 11 subspecies <i>A.v. affinis</i> , <i>A.v. fuscipectus</i> , <i>A.v. besra</i> , <i>A.v. Abdulali</i> , <i>A.v. nisoides</i> , <i>A.v. confusus</i> , <i>A.v. quagga</i> , <i>A.v. rufotibialis</i> , <i>A.v. vanbemmeli</i> , <i>A.v. virgatus</i> , <i>A.v. quinquefasciatus</i>	<i>A.v. affinis</i> - N India and Nepal E to C & S China, and Indochina. <i>A.v. fuscipectus</i> - Mountains of Taiwan. <i>A.v. besra</i> - SW India and Sri Lanka, probably also SE India. <i>A.v. Abdulali</i> - Andaman Is. and possibly Nicobar Is. <i>A.v. nisoides</i> - Burma and Thailand; possibly also Malay Peninsula. <i>A.v. confusus</i> - Luzon, Mindoro, Negros and Catanduanes (N & E Philippines). <i>A.v. quagga</i> - Cebu, Bohol, Leyte, Samar, Siquijor and Mindanao (SE Philippines). <i>A.v. rufotibialis</i> - N Borneo. <i>A.v. vanbemmeli</i> - Sumatra. <i>A.v. virgatus</i> - Java and Bali. <i>A.v. quinquefasciatus</i> - Flores (Lesser Sundas).	NGT. CITES II. Uncommon to common throughout extensive range. Main threat is deforestation, e.g. in much of lowland India, Philippines and Java.	Not recommended
Sulawesi Dwarf Sparrowhawk <i>Accipiter nanus</i>	Mountains of Sulawesi, except SW.	Rare. CITES II. Apparently uncommon to rare, but status difficult to ascertain because of unobtrusive behaviour. Not known to be directly threatened at present, but loss of forest habitat likely to have negative impact.	Not recommended
Rufous-necked Sparrowhawk <i>Accipiter erythrauchen</i> 2 subspecies <i>A.e. erythrauchen</i> , <i>A.e. ceramensis</i>	<i>A.e. erythrauchen</i> - Mortrotai, Halmahera, Bacan and Obi (N Moluccas). <i>A.e. ceramensis</i> - Buru, Ambon and Seram (S Moluccas).	NGT. CITES II. Uncommon, but unobtrusive and easily overlooked. Status very poorly known; most likely threat is loss of forest habitat.	Not recommended
Collared Sparrowhawk <i>Accipiter cirrocephalus</i> 3 subspecies <i>A.c. papuanus</i> , <i>A.c. rosselianus</i> , <i>A.c. cirrocephalus</i>	<i>A.c. papuanus</i> - New Guinea, W Papuan Is, Aur Is. <i>A.c. rosselianus</i> - Rossel I (Louisiade Archipelago). <i>A.c. cirrocephalus</i> - Australia, Tasmania.	NGT. CITES II. Uncommon, but widespread; secretive and probably under-recorded.	Not recommended
New Britain Sparrowhawk <i>Accipiter brachyurus</i>	New Britain.	Rare. CITES II. Scarce, and seldom encountered by ornithologists; population trend and biology unknown.	Not recommended
Vinous-breasted Sparrowhawk <i>Accipiter rhodogaster</i> 3 subspecies <i>A.r. rhodogaster</i> , <i>A.r. butonensis</i> , <i>A.r. sulaensis</i>	<i>A.r. rhodogaster</i> - Sulawesi. <i>A.r. butonensis</i> - Muna and Butung (off SE Sulawesi). <i>A.r. sulaensis</i> - Banggai and Sula Is.	NGT. CITES II. Widespread and apparently uncommon; perhaps commoner than thought, but overlooked because of unobtrusive habits.	Not recommended

Madagascar Sparrowhawk <i>Accipiter madagascariensis</i>	Madagascar.	NGT. CITES II. Currently considered near-threatened. Status poorly known. Uncommon in all areas and rare on deforested central plateau.	Not recommended
Ovambo Sparrowhawk <i>Accipiter ovampensis</i>	Senegambia, Sierra Leone and Chana E to Ethiopia and S to Angola, N Namibia, N Botswana and N South Africa.	NGT. CITES II.	Not recommended

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Eurasian Sparrowhawk <i>Accipiter nisus</i> 6 subspecies <i>A.n. nisus</i> , <i>A.n. nisosimilis</i> , <i>A.n. melaschistos</i> , <i>A.n. wolterstorffi</i> , <i>A.n. granti</i> , <i>A.n. punicus</i>	<i>A.n. nisus</i> - Europe and Asia Minor E to W Siberia; winters S to NE Africa and Middle East. <i>A.n. nisosimilis</i> - C & E Asia; winters S to India, Sri Lanka and Indochina. <i>A.n. melaschistos</i> - Himalayas and mountains of C Asia. <i>A.n. wolterstorffi</i> - Corsica and Sardinia. <i>A.n. granti</i> - Madeira and Canary Is. <i>A.n. punicus</i> - NW Africa, from Morocco to Tunisia.	NGT. CITES II. Declined drastically in Europe during 1950's and 1960's due to generalized use of organochlorine pesticides, which killed adults and lowered breeding success.	Phase Out
Rufous-breasted Sparrowhawk <i>Accipiter rufiventris</i> 2 subspecies <i>A.r. perspicillaris</i> , <i>A.r. rufiventris</i>	<i>A.r. perspicillaris</i> - Ethiopian highlands. <i>A.r. rufiventris</i> - Kenya and E Zaire S to South Africa.	NGT. CITES II.	Not recommended
Sharp-shinned Hawk <i>Accipiter striatus</i> 7 subspecies <i>A.s. perobscurus</i> , <i>A.s. velox</i> , <i>A.s. suttoni</i> , <i>A.s. madrensis</i> , <i>A.s. striatus</i> , <i>A.s. fringilloides</i> , <i>A.s. venator</i>	<i>A.s. perobscurus</i> - Queen Charlotte Is; possibly also mainland coast of British Columbia. <i>A.s. velox</i> - Alaska and Canada S to California, Arizona, New Mexico and Alabama (USA); winters S to Panama. <i>A.s. suttoni</i> - Extreme S New Mexico (USA) S locally to Veracruz (Mexico). <i>A.s. madrensis</i> - Guerrero and perhaps W Oaxaca (S Mexico). <i>A.s. striatus</i> - Hispaniola, in both Haiti and Dominican Republic. <i>A.s. fringilloides</i> - Cuba. <i>A.s. venator</i> - Puerto Rico.	NGT. CITES II. Race <i>velox</i> affected by organochlorine chemicals in 1960's and 1970's; some general declines. Habitat alteration, especially removal of forest, continues to affect populations, although species capable of adapting to urban areas.	DERP
White-breasted Hawk <i>Accipiter chionogaster</i>	Highlands of Central America, from S Mexico (Chiapas, Oaxaca) through Guatemala, Honduras and El Salvador to NC Nicaragua.	NGT. CITES II. Status uncertain; relatively restricted range and extensive deforestation within this range suggest that careful monitoring is merited.	Not recommended
Plain-breasted Hawk <i>Accipiter ventralis</i>	Hills and mountains from N & SE Venezuela and Colombia through Ecuador and Peru to W Bolivia (Cochambamba).	NGT. CITES II.	Not recommended
Rufous-thighed Hawk <i>Accipiter erythronemius</i>	S Brazil (S from Mato Grosso and Bahia) to Uruguay, and SE Bolivia (Santa Cruz to Tarija) through Chaco of Paraguay to N Argentina (La Rioja & Córdoba).	NGT. CITES II. In general fairly common, but locally threatened where extensive monocultural agriculture removes all stands of woodland; otherwise probably fairly adaptable and no apparent grounds for concern.	Not recommended
Cooper's Hawk <i>Accipiter cooperii</i>	USA and S Canada. Winters from N USA to C America, regularly as far S as Honduras, occasionally to Colombia.	NGT. CITES II.	DERP
Gundlach's Hawk <i>Accipiter gundlachi</i> 2 subspecies <i>A.g. gundlachi</i> , <i>A.g. wileyi</i>	<i>E</i> , <i>W</i> & <i>C</i> Cuba.	Vulnerable/Rare. CITES II. Total numbers estimated at c. 150-200 pairs, mostly in E Cuba, but with three additional populations in W, in provinces of Las Villas, Matanzas (Zapata Swamp) and Pinar.	Not recommended

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Bicoloured Hawk <i>Accipiter bicolor</i> 4 subspecies <i>A.b. fidens</i> , <i>A.b. bicolor</i> , <i>A.b. pileatus</i> , <i>A.b. guttifer</i>	<i>A.b. fidens</i> - S Mexico, N of Yucatán, in Oaxaca and Veracruz. <i>A.b. bicolor</i> - S Mexico (Yucatán) to Amazonia and the Guianas, S to E Bolivia, and W of Andes S to NW Peru (Lambayeque). <i>A.b. pileatus</i> - Brazil S of Amazonia (E Mato Grosso to S Maranhão and Ceará) and S to NE Argentina (Misiones). <i>A.b. guttifer</i> - Brazil (W Mato Grosso) and Bolivia through Chaco of Paraguay to N Argentina.	NGT. CITES II. Widespread, but generally rare.	Not recommended
Chilean Hawk <i>Accipiter chilensis</i>	Andes of C Chile (O'Higgins) and adjacent Argentina S to Tierra del Fuego and Staten I. Winters N to NW Argentina (Catamarca).	NGT. CITES II. Status very poorly known. Reportedly declining in much of Chile, but said to be little influenced by modest levels of forest clearing.	Not recommended
Black Sparrowhawk <i>Accipiter melanoleucus</i> 2 subspecies <i>A.m. temminckii</i> , <i>A.m. melanoleucus</i>	<i>A.m. temminckii</i> - Senegambia E to Gabon, Congo and Central African Republic. <i>A.m. melanoleucus</i> - E Sudan and N & W Ethiopia; Gabon and Zaire E to Kenya and S to Angola and South Africa; Pemba and Zanzibar.	NGT. CITES II.	Not recommended
Henst's Goshawk <i>Accipiter henstii</i>	Madagascar.	NGT. CITES II. Currently considered near threatened.	Not recommended
Northern Goshawk <i>Accipiter gentilis</i> 8 subspecies <i>A.g. gentilis</i> , <i>A.g. arrigonii</i> , <i>A.g. buteoides</i> , <i>A.g. albidus</i> , <i>A.g. schvedowi</i> , <i>A.g. fujiyamae</i> , <i>A.g. atricapillus</i> , <i>A.g. laingi</i>	<i>A.g. gentilis</i> - Europe and extreme NW Africa. <i>A.g. arrigonii</i> - Corsica and Sardinia. <i>A.g. buteoides</i> - Extreme N Eurasia, from N Sweden E to R Lena; winters S to C Europe and C Asia. <i>A.g. albidus</i> - NE Siberia to Kamchatka. <i>A.g. schvedowi</i> - Asia, from Urals to Amurland, Sakhalin and Kuril Is, S to C China; winters S to Himalayas and N Indochina. <i>A.g. fujiyamae</i> - Japan. <i>A.g. atricapillus</i> - North America, S to Tennessee and S Arizona (USA) and Jalisco (W Mexico). <i>A.g. laingi</i> - Queen Charlotte Is and Vancouver I, British Columbia (W Canada).	NGT. CITES II. Significant decline in Europe during 19 <sup>th</sup> century and 20 <sup>th</sup> , mainly due to persecution and deforestation.	DERP
Meyer's Goshawk <i>Accipiter meyerianus</i>	Halmahera and Seram (Moluccas) through N & E New Guinea to New Britain and Solomon Is (on Kolombangara and Guadalcanal).	NGT. CITES II. Scarce, and seldom encountered by ornithologists; biology poorly known.	Not recommended
Chestnut-shouldered Goshawk <i>Erythrotriorchis buergeri</i>	N & E New Guinea.	NGT. CITES II. Scarce, and seldom encountered by ornithologists; biology unknown.	Not recommended
Red Goshawk <i>Erythrotriorchis radiatus</i>	N & E Australia, from Kimberleys round to N New South Wales.	Vulnerable. CITES II. Scarce, with specialized requirements, and locally restricted within continental range; declining, with contraction of breeding range, in E Australia through habitat loss.	Not recommended

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Doria's Hawk <i>Megatriorchis doriae</i>	New Guinea; also recorded on Batanta I, off NW New Guinea.	NGT. CITES II. Scarce, and seldom encountered by ornithologists; biology unknown.	Not recommended
Long-tailed Hawk <i>Urotriorchis macrourus</i>	Liberia E to W Uganda and S to SW & C Zaire.	NGT. CITES II. Secretive but widely recorded from primary forest; restricted to large tracts of dense forest, although readily occurs at edge of clearings. Much affected by deforestation, due to intolerance of secondary habitats, and has probably decreased considerably throughout much of W Africa.	Not recommended
Grasshopper Buzzard <i>Butastur rufipennis</i>	Senegambia E to Ethiopia, migrating S to Sierra Leone, Cameroon, NE Zaire, Kenya and N Tanzania.	NGT. CITES II.	Not recommended
White-eyed Buzzard <i>Butastur teesa</i>	SE Iran, Afghanistan and Pakistan through India and Nepal to Burma (S to Tenasserim).	NGT. CITES II.	Not recommended
Rufous-winged Buzzard <i>Butastur liventer</i>	Burma and SC China (SW Yunnan) S to Indochina and N Malay Peninsula; Java; Sulawesi. Reported occurrence in SE Borneo doubtful; old record of questionable validity from Timor.	NGT. CITES II. Throughout most of range fairly common to uncommon, but local; rare in Yunnan (SC China) and Java. Not encountered in Java during recent raptor surveys.	Not recommended
Grey-faced Buzzard <i>Butastur indicus</i>	NE China to Amurland and Ussuriland, Japan and Izu Is. Winters from S & SE China and Taiwan through Indochina and Malay Peninsula to Greater Sundas, Philippines, Sulawesi and islands off NW New Guinea.	NGT. CITES II. Size and trends of populations very poorly known.	Not recommended
Crane Hawk <i>Geranospiza caerulescens</i> 6 subspecies <i>G.c. livens</i> , <i>G.c. nigra</i> , <i>G.c. balzarensis</i> , <i>G.c. caerulescens</i> , <i>G.c. gracilis</i> , <i>G.c. flexipes</i>	<i>G.c. livens</i> - NW Mexico. <i>G.c. nigra</i> - N Mexico (Sinaloa and Tamaulipas) S to zone of Panama Canal. <i>G.c. balzarensis</i> - Panama E of canal zone on Pacific slope to W Colombia, W Ecuador and NW Peru (Lambayeque). <i>G.c. caerulescens</i> - E slope of Colombia and Ecuador to the Guianas and Amazonian Peru and Brazil. <i>G.c. gracilis</i> - NE Brazil, from Maranhão, Ceará and Piauí to C Goiás and Bahia. <i>G.c. flexipes</i> - S Brazil (Minas Gerais, S Goiás and Mato Grosso) and Bolivia through Chaco of Paraguay, to NC Argentina (S to La Rioja, Córdoba and Buenos Aires) and Uruguay.	NGT. CITES II. Generally not common, but extensive geographical range and broad habitat tolerance suggest little grounds for immediate concern. In Colombia, widespread but local and rarely common.	Not recommended
Plumbeous Hawk <i>Leucopternis plumbea</i>	E. Panama through W Colombia and W Ecuador to extreme NW Peru.	NGT. CITES II. Currently considered near-threatened. Status very poorly known, but in general rare to uncommon. May have been extirpated from W Panama; apparently rare in Colombia.	Not recommended
Slate-coloured Hawk <i>Leucopternis schistacea</i>	Amazonia, from SE Colombia and SW Venezuela S through E Ecuador and E Peru to N & E Bolivia, and E to E French Guiana and CN Brazil.	NGT. CITES II. Generally fairly common. Status uncertain, but extensive range suggests there is no need for immediate concern; surveys required to assess situation more definitely. Biology very poorly known.	Not recommended
Barred Hawk <i>Leucopternis princeps</i>	Costa Rica and Panama, and locally into W Colombia and N Ecuador on both sides of the Andes.	NGT. CITES II. Too little known to permit accurate assessment of status, but propensity to use forest edge suggests it is not a species of imminent concern.	Not recommended



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Black-faced Hawk <i>Leucopternis melanops</i>	The Guianas and Amazonia N of Amazon R to E Colombia and E Ecuador. Specimens from R Tapajós (S of Amazon) may refer to <i>L. kuhli</i> .	NGT. CITES II. Status very poorly known. Apparently rare throughout, but very secretive and often overlooked; most of forest in extensive range persists, so probably not a species of immediate concern.	Not recommended
White-browed Hawk <i>Leucopternis kuhli</i>	E Peru (C Loreto S to Madre de Dios), N Bolivia (Pando) and Amazonian Brazil S of R Amazon (from R Madeira E to E Pará).	NGT. CITES II. Very poorly known, but so much forest in its extensive range remains intact that species can not be considered of immediate concern. Surveys and research required.	Not recommended
White-necked Hawk <i>Leucopternis lacernulata</i>	E Brazil, from Alagoas and S Bahia to São Paulo and Santa Catarina.	Vulnerable/Rare. CITES II. Although reported in a number of protected reserves, species should be considered vulnerable owing to low population densities, significant distances between protected areas, and massive deforestation of habitat outside protected areas. Surveys and research required.	Not recommended
Semiplumbeous Hawk <i>Leucopternis semiplumbea</i>	Honduras S to W Colombia (E to Magdalena Valley) and NW Ecuador (Esmeraldas).	NGT. CITES II. Currently considered near-threatened. Perhaps of little concern at present, as is the commonest hawk in some areas of primary forest, and is tolerant of second growth.	Not recommended
White Hawk <i>Leucopternis albicollis</i> 4 subspecies <i>L.a. ghiesbreghti</i> , <i>L.a. costaricensis</i> , <i>L.a. williaminae</i> , <i>L.a. albicollis</i>	<i>L.a. ghiesbreghti</i> - S Mexico (Oaxaca and Veracruz) to Guatemala and Belize. <i>L.a. costaricensis</i> - Honduras to Panama and W Colombia. <i>L.a. williaminae</i> - NW Colombia (upper Sinú and lower Magdalena Valleys S to Valle) and extreme NW Venezuela (Perijá). <i>L.a. albicollis</i> - E Colombia, NW Venezuela (NW Zulia), Trinidad and the Guianas through Amazonia to E Peru, E Ecuador, N & E Bolivia (La Paz, Santa Cruz) and C & E Brazil (C Mato Grosso and N Maranhão).	NGT. CITES II.	Not recommended
Grey-backed Hawk <i>Leucopternis occidentalis</i>	W Ecuador and adjacent NW Peru. Single record from E Andean slope now questioned by its authors.	Endangered. CITES II. Massive deforestation affecting 90% of former range has reduced the population to only a few areas; . Some birds persist in very disturbed, fragmented forest mosaics in Ecuador.	Not recommended
Mantled Hawk <i>Leucopternis polionota</i>	E Brazil (Alagoas and Bahia) S to E Uruguay and E Paraguay (Alto Paraná). Purported Argentinian distribution (in Misiones) apparently based on supposition, with no confirmed records or data.	NGT. CITES II. Currently considered near-threatened. Status poorly known: rare or locally distributed; with massive deforestation going on throughout range	Not recommended
Rufous Crab-hawk <i>Buteogallus aequinoctialis</i>	Orinoco Delta in E Venezuela along coast to Paraná, S Brazil.	NGT. CITES II. Status of no immediate concern, but restricted habitat makes it highly susceptible locally to any form of deterioration or loss of this habitat.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Common Black Hawk <i>Buteogallus anthracinus</i> 3 subspecies <i>B.a. anthracinus</i> , <i>B.a. gundlachii</i> , <i>B.a. utilensis</i>	<i>B.a. anthracinus</i> - SW & S USA (S Utah and Arizona to Texas) through Central America to Panama and N Colombia, then along Caribbean coast to NW Guyana, Trinidad and St Vincent (Lesser Antilles); penetrates inland to Huila, Colombia. <i>B.a. gundlachii</i> - Cuba and I of Pines. <i>B.a. utilensis</i> - Cancún I and Cozumel I, off Yucatán; Utila I	NGT. CITES II.	Not recommended

	and Guanaja I, in Gulf of Honduras; and perhaps other adjacent islands.		
Mangrove Black Hawk <i>Buteogallus subtilis</i> 3 subspecies <i>B.s. rhizophorae</i> , <i>B.s. bangsi</i> , <i>B.s. subtilis</i>	<b><i>B.s. rhizophorae</i></b> - Pacific coast of El Salvador and Honduras; probably from extreme SW Mexico (Chiapas) locally to Nicaragua. <b><i>B.s. bangsi</i></b> - Pacific coast of Costa Rica and Panama, including Pearl Is. <b><i>B.s. subtilis</i></b> - Pacific coast of Colombia (and offshore islands), Ecuador and adjacent extreme N Peru (Tumbes).	NGT. CITES II. Status poorly documented, partly due to taxonomic confusion. In places is fairly common, but few records for Colombia; common in Pearl Is, off Panama.	Not recommended
Great Black Hawk <i>Buteogallus urubitinga</i> 2 subspecies <i>B.u. ridgwayi</i> , <i>B.u. urubitinga</i>	<b><i>B.u. ridgwayi</i></b> - Mexico (C Sonora and S Tamaulipas) S to W Panama. <b><i>B.u. urubitinga</i></b> - E Panama, W of Andes S to W Ecuador, and E of Andes E to the Guianas, Trinidad and Tobago, and S through E Bolivia and Brazil to Paraguay, Uruguay and N Argentina (Tucumán, Santiago del Estero, Santa Fe).	NGT. CITES II.	Not recommended
Savanna Hawk <i>Buteogallus meridionalis</i>	W Panama (Chiriquí) through tropical South America W of Andes to NW Peru, and E of Andes E to the Guianas and Trinidad, and S through Ecuador, E Peru, E Bolivia and Brazil to N Argentina (Tucumán, Córdoba and Santa Fe).	NGT. CITES II.	Not recommended
Harris' Hawk <i>Parabuteo unicinctus</i> 2 subspecies <i>P.u. harrisi</i> , <i>P.u. unicinctus</i>	<b><i>P.u. harrisi</i></b> - SW USA (S California to Texas) through Mexico and Central America (except Belize and Honduras) to drier Pacific slope regions of W Colombia, Ecuador and Peru. <b><i>P.u. unicinctus</i></b> - NE Colombia and W Venezuela S through E Bolivia and C & NE Brazil (Maranhão and Ceará) to S Argentina (Río Negro) and SC Chile (Aisén).	NGT. CITES II.	DERP
Black-collared Hawk <i>Busarellus nigricollis</i> 2 subspecies <i>B.n. nigricollis</i> , <i>B.n. leucocephalus</i>	<b><i>B.n. nigricollis</i></b> - C Mexico (Sinaloa and Veracruz) S through Central America to Amazonia, W to E Ecuador and E Peru, E to the Guianas and Trinidad, and S through E Bolivia to S Brazil. <b><i>B.n. leucocephalus</i></b> - Paraguay, Uruguay and N Argentina (S to Salta, Santa Fe and Corrientes).	NGT. CITES II. Apparently declining in Panama, due to drainage of wetlands; same may well be true elsewhere.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Black-chested Buzzard-eagle <i>Geranoaetus melanoleucus</i> 2 subspecies <i>G.m. australis</i> , <i>G.m. melanoleucus</i>	<b><i>G.m. australis</i></b> - NW Venezuela (Mérida Andes) through W South America S to Tierra del Fuego. <b><i>G.m. melanoleucus</i></b> - S & E Brazil (Alagoas, Rio de Janeiro and São Paulo) to Paraguay, E Argentina (N of Buenos Aires) and Uruguay.	NGT. CITES II. Declines reported in S Argentina, in areas where strychnine used by sheep ranchers.	Not recommended
Black Solitary Eagle <i>Harpyhaliaetus solitarius</i> 2 subspecies <i>H.s. sheffleri</i> , <i>H.s. solitarius</i>	<b><i>H.s. sheffleri</i></b> - Locally in highlands from W Mexico (Sonoroa) to Panama. <b><i>H.s. solitarius</i></b> - Locally from Colombia (Santa Marta Mts) E to N Venezuela and S through humid Andes to NW Argentina; also occurs in the Guianas	NGT. CITES II. Currently considered near-threatened. Status very poorly known; apparently rare throughout its broad latitudinal range.	Not recommended
Crowned Solitary Eagle <i>Harpyhaliaetus coronatus</i>	E Bolivia (Santa Cruz), W Paraguay and S Brazil (S from Mato Grosso and Goiás) to S Argentina (Mendoza and Río Negro); no definitive records from Uruguay, where probably occurs.	Vulnerable. CITIES II. Very poorly known. Occurs over large area, but at very low densities. Little hard evidence available on populations and trends.	Not recommended

Grey Hawk <i>Buteo nitidus</i> 4 subspecies <i>B.n. plagiatus</i> , <i>B.n. costaricensis</i> , <i>B.n. nitidus</i> , <i>B.n. pallidus</i>	<b><i>B.n. plagiatus</i></b> - SW USA (Texas to New Mexico) to NW Costa Rica. <b><i>B.n. costaricensis</i></b> - SW Costa Rica to N Colombia and W Ecuador. <b><i>B.n. nitidus</i></b> - E Colombia and E Ecuador, E to Venezuela and the Guianas, and S through Amazonian Brazil to N Maranhão. <b><i>B.n. pallidus</i></b> - SC Brazil (Piauí to Rio de Janeiro and Mato Grosso) and E Bolivia, S to Paraguay and NC Argentina (Tucumán and Chaco).	NGT. CITES II.	Phase Out
Red-shouldered Hawk <i>Buteo lineatus</i> 5 subspecies <i>B.l. elegans</i> , <i>B.l. lineatus</i> , <i>B.l. texanus</i> , <i>B.l. alleni</i> , <i>B.l. extimus</i>	<b><i>B.l. elegans</i></b> - S Oregon (NW USA) to N Baja California (Mexico). <b><i>B.l. lineatus</i></b> - E North America, from S Canada to C USA. <b><i>B.l. texanus</i></b> - S Texas (USA) to Veracruz (CE Mexico). <b><i>B.l. alleni</i></b> - SC Texas to South Carolina and N Florida. <b><i>B.l. extimus</i></b> - Florida and Florida Keys.	NGT. CITES II. May have undergone slight overall decline since 1946; thought to be result of alterations and loss of habitat; Christmas Bird Counts show winter populations have declined, except in California.	DERP
Ridgway's Hawk <i>Buteo ridgwayi</i>	Hispaniola and several adjacent islets.	Indeterminate. CITES II. Conflicting evidence; situation might be urgent. Locally common, yet rare over its entire range, which itself is limited to a few islands. Formerly widespread, but shooting and extensive deforestation must have taken substantial toll on population .	Not recommended
Broad-winged Hawk <i>Buteo platypterus</i> 6 subspecies <i>B.p. platypterus</i> , <i>B.p. cubanensis</i> , <i>B.p. brunnescens</i> , <i>B.p. insulicola</i> , <i>B.p. rivierei</i> , <i>B.p. antillarum</i>	<b><i>B.p. platypterus</i></b> - C & S Canada to S USA; winters S to Brazil. <b><i>B.p. cubanensis</i></b> - Cuba. <b><i>B.p. brunnescens</i></b> - Puerto Rico. <b><i>B.p. insulicola</i></b> - Antigua (Lesser Antilles). <b><i>B.p. rivierei</i></b> - Dominica, Martinique and St. Lucia (Lesser Antilles). <b><i>B.p. antillarum</i></b> - St Vincent and Grenada to Tobago.	NGT. CITES II.	DERP

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
White-rumped Hawk <i>Buteo leucorrhous</i>	Apparently disjunct distribution: mountains of Venezuela and Colombia through Ecuador and Peru to NW Bolivia (Cochabamba, La Paz); Paraguay, S Brazil (N to Minas Gerais) and N Argentina (Salta, Tucumán, Chaco and Misiones).	NGT. CITES II. Very little known, and status uncertain	Not recommended
Short-tailed Hawk <i>Buteo brachyurus</i> 2 subspecies <i>B.b. fuliginosus</i> , <i>B.b. brachyurus</i>	<b><i>B.b. fuliginosus</i></b> - S Florida (USA); E Mexico to Panama. <b><i>B.b. brachyurus</i></b> - Colombia S to W Ecuador, E to the Guianas and Brazil, and S through E Peru and E Bolivia (La Paz and Cochabamba) to Paraguay and N Argentina (Jujuy, Tucumán, Misiones).	NGT. CITES II. Nowhere common, e.g. uncommon and thinly spread over Colombia; uncommon to rare in Florida (USA). Occurs over very large range, and is tolerant of disturbed habitat; situation apparently secure.	Not recommended
White-throated Hawk <i>Buteo albigula</i>	Andes, from Venezuela and Colombia S to C Chile and WC Argentina.	NGT. CITES II. Very poorly known. Generally rare and local throughout range, e.g. in Colombia. Preferred altitudinal range relatively less affected by human activities, especially transformation; also shows tolerance of disturbed habitat. Surveys and research required.	Not recommended

Swainson's Hawk <i>Buteo swainsoni</i>	W & C North America from Alaska SE to Minnesota, and S to N Mexico. Winters mostly in South America, especially in N Argentina, S Brazil and Paraguay; also some birds in S & W USA.	NGT. CITES II.	DERP
White-tailed Hawk <i>Buteo albicaudatus</i> 3 subspecies <i>B.a. hyospodius</i> , <i>B.a. colonus</i> , <i>B.a. albicaudatus</i>	<b><i>B.a. hyospodius</i></b> - SC USA (S Texas) and NW Mexico (Sonora) to N Colombia and NW Venezuela. <b><i>B.a. colonus</i></b> - E Colombia E to Surinam (except NW Venezuela), and S to Amazon, E from at least Manaus to Atlantic coast; Aruba, Curaçao, Bonaire and Trinidad. <b><i>B.a. albicaudatus</i></b> - Extreme SE Peru and S Brazil (S from Mato Grosso, Goiás and Bahia) through N & E Bolivia, Paraguay and Uruguay to N & C Argentina (S to Río Negro).	NGT. CITES II.	Phase Out
Galapagos Hawk <i>Buteo galapagoensis</i>	Galapagos Is.	Rare. CITES II. . Formerly on all large islands, and many of smaller islands, but range now greatly reduced and may now have been extirpated from five islands. Seems secure on Santiago and Santa Fe. Might be a species readily responsive to manipulative intervention, should populations reach dangerously low levels.	Not recommended
Red-backed Hawk <i>Buteo polyosoma</i> 2 subspecies <i>B.p. polyosoma</i> , <i>B.p. exsul</i>	<b><i>B.p. polyosoma</i></b> - C Andes of Colombia S through Andes to Patagonia and Tierra del Fuego; also Falkland Is. <b><i>B.p. exsul</i></b> - Alejandro Selkirk I (Más Afuera) in Juan Fernández Is, off SC Chile.	NGT. CITES II. Status poorly known, but in general appears to be relatively secure, and locally common, e.g. EC Ecuador. Apparently declining in Chile.	Phae Out
Puna Hawk <i>Buteo poecilochrous</i>	Andes from S Colombia (C Andes and Cauca) S to N Chile and NW Argentina.	NGT. CITES II.	Not recommended

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Zone-tailed Hawk <i>Buteo albonotatus</i>	Range disjunct or incompletely known: NW & NC Mexico (from Baja California) and adjacent USA, S through Yucatán (not recorded in Belize) and Guatemala (including W highlands) to Panama, including Pearl Is. In South America, distribution incompletely encircles Amazon Basin: W Ecuador; C Peru, near Lima; N Colombia (Sta Marta Mts to Magdalena) E through N & SE Venezuela to the Guianas and Trinidad; N, E & SE Brazil (from Amazon Delta and I de Marajó, S and E through Ceará, Pernambuco, Alagoas and Bahia to Paraná) W through Paraguay to N & E Bolivia (Beni, Santa Cruz).	NGT. CITES II.	Not recommended
Hawai'ian Hawk <i>Buteo solitarius</i>	Endemic to Hawaiian Is; known to breed only on Hawaii I, but vagrants seen on at least three other islands of archipelago.	Rare. CITES II. Currently listed as endangered by government of USA, but recently (1993) proposed for down-listing to threatened. Total population thought to be fairly stable and roughly estimated at 2700 birds, but figure principally from extrapolations of home range sizes of radio-tagged birds. Lack of accurate information on historical and current numbers makes assessment of population trends impossible.	DERP
Red-tailed Hawk <i>Buteo jamaicensis</i> 14 subspecies <i>B.j. alascensis</i> , <i>B.j. harlani</i> , <i>B.j. calurus</i> , <i>B.j. borealis</i> , <i>B.j. kriderii</i> , <i>B.j. fuertesi</i> , <i>B.j. hadropus</i> , <i>B.j. kemsiesi</i> , <i>B.j. costaricensis</i> , <i>B.j. fumosus</i> , <i>B.j. socorroensis</i> , <i>B.j. umbrinus</i> , <i>B.j. solitudinis</i> , <i>B.j. jamaicensis</i>	<i>B.j. alascensis</i> - SE Alaska (USA) and coastal British Columbia (W Canada). <i>B.j. harlani</i> - Interior of Alaska, SW Yukon and N British Columbia. <i>B.j. calurus</i> - W North America W of Great Plains. <i>B.j. borealis</i> - N America E of Great Plains of C USA and Canada. <i>B.j. kriderii</i> - Plains of SC Canada S to Wyoming (NC USA). <i>B.j. fuertesi</i> - Texas (S USA) to N Mexico. <i>B.j. hadropus</i> - Highlands of C Mexico. <i>B.j. kemsiesi</i> - Chiapas (S Mexico) to N Nicaragua. <i>B.j. costaricensis</i> - Costa Rica. <i>B.j. fumosus</i> - Tres Marias Is, off WC Mexico. <i>B.j. socorroensis</i> - Socorro I (Revillagigedo Is), off W Mexico. <i>B.j. umbrinus</i> - Florida (SE USA). <i>B.j. solitudinis</i> - Bahamas and Cuba. <i>B.j. jamaicensis</i> - Jamaica, Puerto Rico and Hispaniola E to N Lesser Antilles.	NGT. CITES II.	DERP
Rufous-tailed Hawk <i>Buteo ventralis</i>	From SC Chile (Ñuble) and SC Argentina (Río Negro) S through Patagonia to Straits of Magellan.	NGT. CITES II. Until recently red-listed in category Insufficiently Known, but currently considered near-threatened. Apparently rare throughout range; status remains poorly known, but species does not appear to be in immediate danger.	Not recommended

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Eurasian Buzzard <i>Buteo buteo</i> 11 subspecies <i>B.b. buteo</i> , <i>B.b. arrigonii</i> , <i>B.b. rothschildi</i> , <i>B.b. insularum</i> , <i>B.b. bannermani</i> , <i>B.b. vulpinus</i> , <i>B.b. menetriesi</i> , <i>B.b. japonicus</i> , <i>B.b. refectus</i> , <i>B.b. toyoshimai</i> , <i>B.b. oshiroi</i> ,	<b><i>B.b. buteo</i></b> - Europe E to Finland, Romania and Turkey; also Madeira; winters in S of range, and irregularly S to Liberia. <b><i>B.b. arrigonii</i></b> - Corsica and Sardinia. <b><i>B.b. rothschildi</i></b> - Azores. <b><i>B.b. insularum</i></b> - Canary Is. <b><i>B.b. bannermani</i></b> - Cape Verde Is. <b><i>B.b. vulpinus</i></b> - N Scandinavia and European Russia E to R Yenisey, and S to N Caucasus and C Asia (Altai, Tien Shan); winters mainly in Africa S of Sahara, and also in S Asia. <b><i>B.b. menetriesi</i></b> - S Crimea and Caucasus S to E Turkey and N Iran. <b><i>B.b. japonicus</i></b> - L Baikal area and Mongolia E through Amurland and Manchuria to Sakhalin, Japan and Kuril Is, and S to Tibet, and possibly NW India; winters in S Asia, from India to Japan. <b><i>B.b. refectus</i></b> - W China and perhaps Himalayas. <b><i>B.b. toyoshimai</i></b> - Izu Is and Bonin Is. <b><i>B.b. oshiroi</i></b> - Daito Is (to E of C Ryukyu Is).	NGT. CITES II.	Not recommended
Mountain Buzzard <i>Buteo oreophilus</i> 2 subspecies <i>B.o. oreophilus</i> , <i>B.o. trizonatus</i>	<b><i>B.o. oreophilus</i></b> - Highlands of Ethiopia S to Tanzania and Malawi. <b><i>B.o. trizonatus</i></b> - S & E South Africa.	NGT. CITES II. Vulnerable due to limited and patchy distribution of habitat, especially to forest cutting.	Not recommended
Madagascar Buzzard <i>Buteo brachypterus</i>	Madagascar.	NGT. CITES II. Only uncommon on deforested central plateau.	Not recommended
Long-legged Buzzard <i>Buteo rufinus</i> 2 subspecies <i>B.r. rufinus</i> , <i>B.r. cirtensis</i>	<b><i>B.r. rufinus</i></b> - SE Europe and Asia Minor E through Iran and Afghanistan to NW Mongolia and S to NW India (Garhwal); winters to NE Africa and N India. <b><i>B.r. cirtensis</i></b> - N Africa, from Mauritania to Egypt; Arabia.	NGT. CITES II. Population sizes and trends little known.	Not recommended
Upland Buzzard <i>Buteo hemilasius</i>	S Siberia and Mongolia E to Manchuria, and S to C China and SE Tibet. Winters in N India (Kashmir to Sikkim), E China and Korea.	NGT. CITES II. Status very poorly known; apparently infrequent or rare throughout most of breeding range and in winter quarters, although locally abundant, e.g. in Tebet. Generally rare, but locally common in extreme S Siberia and Mongolia. Possibly subject to fluctuations related to abundance of rodents.	Not recommended
Ferruginous Hawk <i>Buteo regalis</i>	S Canada from S Alberta to SW Manitoba, S through WC USA to N Texas; winters S to N Mexico.	NGT. CITES II. Local losses and apparent reduction of entire population have led to calls for listing as threatened species; not listed because of insufficient supporting data.	DERP

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Rough-legged Buzzard <i>Buteo lagopus</i> 4 subspecies <i>B.l. lagopus</i> , <i>B.l. menzbieri</i> ,	<b><i>B.l. lagopus</i></b> - N Eurasia, from Scandinavia E to area of R Ob and R Yenisey; winters mainly in C Europe and C Asia. <b><i>B.l. menzbieri</i></b> - NE Asia E of R Ob and R Yenisey; winters S to C Asia, N China and Japan.	NGT. CITES II.	DERP

<i>B.l. kamtschatkensis</i> , <i>B.l. sanctijohannis</i>	<b><i>B.l. kamtschatkensis</i></b> - Kamchatka; presumably winters in EC Asia. <b><i>B.l. sanctijohannis</i></b> - Alaska and N Canada; winters S to C & S USA.		
Red-necked Buzzard <i>Buteo auguralis</i>	Sierra Leone E to Uganda and Ethiopia, and S to N Angola; outside breeding season, occurs in Sahel zone.	NGT. CITES II. Vulnerable to degradation of woodland but uses many secondary habitats and probably benefits from cutting of rain forest.	Not recommended
Augur Buzzard <i>Buteo augur</i>	Ethiopia S to Zimbabwe and W to S Angola and N & C Namibia.	NGT. CITES II. Vulnerable to extensive afforestation of grassland habitat, or to lowered carrying capacity through overgrazing.	DERP
Archer's Buzzard <i>Buteo archeri</i>	Highlands of N Somalia.	NGT. CITES II. Status uncertain. Appears vulnerable, due to small range and possibility of rapid degradation of habitat by cutting of trees and overgrazing. Virtually unstudied; on previous information lumped with related species <i>B. augur</i> and <i>B. rufofuscus</i> .	Not recommended
Jackal Buzzard <i>Buteo rufofuscus</i>	South Africa, S & C Namibia, Lesotho, Swaziland, S Mozambique and S Botswana.	NGT. CITES II.	Phase Out
Guiana Crested Eagle <i>Morphnus guianensis</i>	Guatemala and Honduras through Central America to Colombia and S to Paraguay, extreme NE Argentina (Misiones) and S Brazil; W of Andes, ranges S only to Serranía de Baudó (WC Colombia).	NGT. CITES II. Formerly red-listed in category Rare, but currently considered near threatened. Not immediately threatened, but large size and low population densities make species particularly sensitive to the hunting pressure that accompanies any human incursions into forests.	Not recommended
Harpy Eagle <i>Harpia harpyja</i>	S Mexico (from S Veracruz, Oaxaca and apparently Campeche) through Central America to Colombia, then E through Venezuela to the Guianas and S through E Bolivia and Brazil to extreme NE Argentina (Misiones).	NGT. CITES II. Formerly red-listed in category Rare, but currently considered near threatened. Sparsely distributed throughout extensive range, and generally rare.	PMP
New Guinea Eagle <i>Harpyopsis novaeguineae</i>	New Guinea.	Vulnerable. CITES II. Low population density and apparently low reproductive rate; few detailed observations by ornithologists, and biology poorly known.	Not recommended
Great Philippine Eagle <i>Pithecophaga jefferyi</i>	Larger islands of N & E Philippines, on Luzon, Leyte, Samar and Mindanao.	Endangered. CITES I. Probably less than 200 individuals remain in wild. Throughout range, main factors in population reduction are: loss of forest habitat; shooting for trophies; and capture of eagles for pets.	Not recommended
Indian Black Eagle <i>Ictinaetus malayensis</i> 2 subspecies <i>I.m. perniger</i> , <i>I.m. malayensis</i>	<b><i>I.m. perniger</i></b> - N India and Nepal; also S India (W & E Ghats, Orissa) and Sri Lanka. <b><i>I.m. malayensis</i></b> - Burma, SC & SE China (Yunnan, Fujian) and Taiwan, S through Indochina and Malay Peninsula to Greater Sundas, Sulawesi and Moluccas; possibly also Banggai and Sula Is.	NGT. CITES II. Main threat is loss of forests.	Not recommended

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Lesser Spotted Eagle <i>Aquila pomarina</i> 2 subspecies <i>A.p. pomarina</i> , <i>A.p. hastata</i>	<b><i>A.p. pomarina</i></b> - C, E & SE Europe through Turkey and Caucasus to S Caspian lowlands; E limit not well known. Winters in S Africa and perhaps E Africa. <b><i>A.p. hastata</i></b> - India (mainly N), Bangladesh, and perhaps also N Burma and Pakistan.	NGT. CITES II. Has disappeared from much of former range in W, e.g. W Germany, or become very rare, e.g. E Germany, former Yugoslavia, Greece.	Not recommended
Greater Spotted Eagle	EC Europe E through Russia to S Ussuriland and	NGT. CITES II. Total world population certainly only some few	Not recommended

<i>Aquila clanga</i>	Manchuria ; isolated populations in N Iran and NC India. Winters from S Europe, NE & E Africa and Middle East through N Pakistan to S & E China and Indochina.	thousand birds, but populations very little studied. Very sensitive to habitat alterations, especially drainage of wetlands.	
Tawny Eagle <i>Aquila rapax</i> 3 subspecies <i>A.r. vindhiana</i> , <i>A.r. belisarius</i> , <i>A.r. rapax</i>	<i>A.r. vindhiana</i> - Pakistan, India, and S Nepal ; possibly also Burma. <i>A.r. belisarius</i> - Morocco and Algeria ; S Arabia and tropical Africa S to N Zaire and N Kenya. <i>A.r. rapax</i> - S Kenya and S Zaire S to South Africa and W to Angola and Namibia.	NGT. CITES II. Very uncommon in Nepal, where presumed to be resident. Status in Burma unknown: may be more vagrant; possibly very rare resident.	Phase-out
Steppe Eagle <i>Aquila nipalensis</i> 2 subspecies <i>A.n. orientalis</i> , <i>A.n. nipalensis</i>	<i>A.n. orientalis</i> - SE European Russia E tl L Balkhash and E Kazakhstan, or perhaps to Tien Shan and Altai; winters in Middle East, Arabia and E & S Africa. <i>A.n. nipalensis</i> - Altai and Tibet E to Manchuria; winters in S Asia.	NGT. CITES II. Extirpated from large areas of former range in W; has disappeared from Romania, Moldavia and Ukraine due to habitat alteration, with conversion of steppes into fields, and persecution; also adversely affected by power lines.	Not recommended
Spanish Imperial Eagle <i>Aquila adalberti</i>	C, W & S Spain; formerly more widespread, occurring in Portugal and Morocco.	Endangered. CITES I. One of rarest of all birds of prey. Total population down to c. 150 pairs. Extinct in Morocco, Portugal and many parts of Spain, and now restricted to C, W & S Spain. Major conservation programme in progress in country of origin..	Not recommended
Eastern Imperial Eagle <i>Aquila heliaca</i>	C Europe and Turkey E to Transbaikalia and Mongolia. Winters S to E Africa, Arabia, N India and E China.	Rare. CITES I. Rapid decline in Europe since World War II;. Now very rare or extinct in many areas of SE Europe. Only in Slovakia and Hungary is species well protected and increasing. International working group for species has been formed, and 3 meetings held in Hungary. Conservation Action Plan in preparation.	Not recommended
Wahlberg's Eagle <i>Aquila wahlbergi</i>	Mauritania E t Ethiopia and S to South Africa.	NGT. CITES II. Vulnerable to clearing of woodland; not known to be affected by pesticides, but accidental poisoning may result in local population declines.	Not recommended
Gurney's Eagle <i>Aquila gurneyi</i>	New Guinea, W Papuan Is and Aru Is; also Moluccas, where recorded on Morotai, Halmahera, Ternate, Bacan and Ambon, and recently on Seram.	NGT. CITES II. Apparently presents low population density; seldom encountered by ornithologists; biology unknown. Possibly threatened by deforestation in lowlands.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Golden Eagle <i>Aquila chrysaetos</i> 6 subspecies <i>A.c. homeyeri</i> , <i>A.c. chrysaetos</i> , <i>A.c. daphanea</i> , <i>A.c. japonica</i> , <i>A.c. kamtschatica</i> , <i>A.c. canadensis</i>	<i>A.c. homeyeri</i> - Iberian Peninsula, NW Africa and large Mediterranean islands E through Egypt, Asia Minor and Arabia to Caucasus and Iran. <i>A.c. chrysaetos</i> - NW & C Europe E to W & C Siberia and Altai. <i>A.c. daphanea</i> - Turkestan E to Manchuria, and S to Pakistan, Himalayas and SW China. <i>A.c. japonica</i> - Korea and Japan. <i>A.c. kamtschatica</i> - W & C Siberia and Altai E to	NGT. CITES II. Limiting factors now are food supply and conservation of favourable habitat.	DERP



	Kamchatka. <i>A.c. canadensis</i> - North America, from Alaska S to Durango (WC Mexico), and E to Labrador, Quebec and New York.		
Wedge-tailed Eagle <i>Aquila audax</i> 2 subspecies <i>A.a. audax</i> , <i>A.a. fleayi</i>	<i>A.a. audax</i> - Australia, S New Guinea. <i>A.a. fleayi</i> - Tasmania.	NGT. CITES II. Local declines in S through habitat disturbance in heavily settled and farmed areas, because intolerance to human activity leads to nest abandonment; has benefited elsewhere from thinning of tree cover, introduction of rabbit and provision of abundant carrion.	Not recommended
Verreaux's Eagle <i>Aquila verreauxii</i>	S Chad and W Sudan ; from Israel, Egypt (Sinai) and SE Arabian Peninsula ; Ethiopia to Somalia and thence S, with main range Kenya S to South Africa.	NGT. CITES II. Rugged terrain often last to be modified, but species declines where drought, overgrazing and hunting combine to reduce hyrax prey. Persecuted heavily in some areas of small-stock farming, and eliminated from parts of S Africa. . The most studied eagle in Africa.	Phase-out
Bonelli's Eagle <i>Hieraaetus fasciatus</i> 2 subspecies <i>H.f. fasciatus</i> , <i>H.f. renschi</i>	<i>H.f. fasciatus</i> - NW Africa and Iberian Peninsula E through Mediterranean, SW Asia and Arabia to Afghanistan, Pakistan and India, and on through N Indochina to S China. <i>H.f. renschi</i> - Sumbawa, Timor, Wetar, Luang and probably Flores (Lesser Sunda Is).	NGT. CITES II. In decline in Europe, with some regional stabilization. Almost extinct in former USSR; widely distributed but rare or uncommon in Indian Subcontinent.	Not recommended
African Hawk-eagle <i>Hieraaetus spilogaster</i>	Senegambia E to Ethiopia and Somalia, and S to NE South Africa.	NGT. CITES II. Vulnerable to cutting of woodland, and persecuted in many areas for attacks on poultry. Not known to be affected by pesticides.	Not recommended
Booted Eagle <i>Hieraaetus pennatus</i>	SW Europe and NW Africa through E Europe, Asia Minor and Caucasus to C Asia, NE to Mongolia and L Baikal area, and SE to N India; also Cape Province (S South Africa) and perhaps Namibia. Winters mostly in Africa S of Sahara, and in S Asia, especially India.	NGT. CITES II. Population sizes not well know, and only fairly approximate estimate available; little information on trends, although apparently stable in general. Some negative factors affecting species are habitat degradation, decline in prey species, and human persecution; declining in Ukraine due to deforestation.	Not recommended
Little Eagle <i>Hieraaetus morphnoides</i> 2 subspecies <i>H.m. weiskei</i> , <i>H.m. morphnoides</i>	<i>H.m. weiskei</i> - New Guinea. <i>H.m. morphnoides</i> - Australia.	NGT. CITES II. Possibly affected locally, to minor degree, by extensive habitat clearance or by excessive loss of trees.	Not recommended
Ayres's Hawk-eagle <i>Hieraaetus ayresii</i>	Sierra Leone E to Ethiopia and Somalia, then S to N Namibia, N Botswana and NE South Africa.	NGT. CITES II. Generally considered rare and sparsely distributed; apparently only reasonably common in woodlands of C Africa. Vulnerable to clearing of woodland.	Not recommended
<b>Common Name</b> <b>Scientific Name</b>	<b>Range</b>	<b>Status in Wild (from Handbook to the Birds of the World vol. 2&amp; 5)</b>	<b>TAG Recommendation</b>
Rufous-bellied Eagle <i>Hieraaetus kienerii</i> 2 subspecies <i>H.k. kienerii</i> , <i>H.k. formosus</i>	<i>H.k. kienerii</i> - NE India and Nepal; SW India (W Ghats) and Sri Lanka. <i>H.k. formosus</i> - Burma and Hainan through W, S & EC Indochina and Malay Peninsula to Greater Sundas, Bali, Philippines and Sulawesi.	NGT. CITES II. Widespread, but status variable: rare in Java and Burma; scarce in Nepal; uncommon in Philippines; moderately common in Sulawesi. During recent raptor survey in Java only rarely recorded, invariably in forest fragments. Recently found to be common in forested areas of NE India and SW India (W Ghats). Has undoubtedly suffered as result of extensive deforestation that still continues throughout most of range.	Not recommended
Martial Eagle <i>Polemaetus bellicosus</i>	Senegambia E to Ethiopia and S to South Africa.	NGT. CITES II. Heavily persecuted in some small-stock and free-range poultry farming areas, and extirpated from parts of South Africa, Namibia and Zimbabwe. B	Phase Out
Black-and-white Hawk-eagle <i>Spizastur melanoleucus</i>	E & S Mexico (Veracruz, Oaxaca) through Central America to Colombia, whence S on Pacific slope to W Ecuador, and E through N Venezuela to the Guianas, then S through E & S Brazil to NE Argentina and Paraguay; E Peru (Loreto) and N & E Bolivia (Beni to Santa Cruz).	NGT. CITES II. Currently considered near-threatened. Extensive range, but spotty distribution. Rare in most areas, but relatively common at one forest site in French Guiana, with estimated average density of at least 7 individuals/10,000 ha; rare and very local in Colombia; sparsely distributed throughout Brazil.	Not recommended

		Tolerance of diverse habitat types suggest species should not be too seriously affected by transformation of habitat.	
Long-crested Eagle <i>Lophaetus occipitalis</i>	Senegambia E to Ethiopia and S to N Namibia, N Botswana and E South Africa.	NGT. CITES II. Vulnerable to degradation of woodland and drainage of wetlands, but compensates to some extent by using exotic plantations, small agricultural clearings and other secondary forest habitats.	Not recommended
Cassin's Hawk-eagle <i>Spizaetus africanus</i>	Sierra Leone and Liberia E to W Uganda and E Zaire; also NW Angola.	NGT. CITES II. Recorded infrequently, but probably commoner than supposed, and large tracts of forest habitat still exist in Congo Basin. Vulnerable to deforestation, but uses many secondary habitats; numbers probably reduced in many areas of W Africa.	Not recommended
Changeable Hawk-eagle <i>Spizaetus cirrhatus</i> 6 subspecies <i>S.c. cirrhatus</i> , <i>S.c. ceylanensis</i> , <i>S.c. andamanensis</i> , <i>S.c. Limnaeetus</i> , <i>S.c. vanheurni</i> , <i>S.c. floris</i>	<i>S.c. cirrhatus</i> - India S of Rajasthan and Gangetic Plain. <i>S.c. ceylanensis</i> - Sri Lanka. <i>S.c. andamanensis</i> - Andaman Is. <i>S.c. limnaeetus</i> - N India and Nepal through Burma, W & S Indochina and Malay Peninsula to Greater Sundas and W & SE Philippines (Palawan, Mindoro, Mindanao). <i>S.c. vanheurni</i> - Simeulue I (off W Sumatra). <i>S.c. floris</i> - Mountains of Sumbawa and Flores.	NGT. CITES II. Widespread and apparently common to uncommon throughout extensive range; scarce in Java, due to deforestation.	Not recommended
Mountain Hawk-eagle <i>Spizaetus nipalensis</i> 3 subspecies <i>S.n. orientalis</i> , <i>S.n. nipalensis</i> , <i>S.n. kelaarti</i>	<i>S.n. orientalis</i> - Japan. <i>S.n. nipalensis</i> - Himalayas of India and Nepal E through S China and Hainan to E China and Taiwan, and S to N Indochina and N Malay Peninsula; recently Vietnam.  <i>S.n. kelaarti</i> - SW India (W Ghats) and Sri Lanka.	NGT. CITES II. Uncommon to rare; has undoubtedly suffered as result of extensive deforestation that still continues through most of range.	Not recommended
Blyth's Hawk-eagle <i>Spizaetus alboniger</i>	S Burma (Tenasserim) and S Thailand through Malay Peninsula to Sumatra and off-lying islands; N Borneo.	NGT. CITES II. Generally appears to be uncommon. Long term threat is loss of habitat, with extensive deforestation throughout much of range.	Not recommended
<b>Common Name</b> <b>Scientific Name</b>	<b>Range</b>	<b>Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u>)</b>	<b>TAG Recommendation</b>
Javan Hawk-eagle <i>Spizaetus bartelsi</i>	Java.	Vulnerable. CITES II. One of rarest of all raptors. Chronic loss of forest is major factor in decline of species, along with exponential growth of human population in Java. .	Not recommended
Sulawesi Hawk-eagle <i>Spizaetus lanceolatus</i>	Sulawesi and off-lying islands of Muna and Butung; Baggai Is (Peleng) and Sula Is.	NGT. CITES II. Currently considered near-threatened. Generally uncommon and local; status very poorly known.	Not recommended
Philippine Hawk-eagle <i>Spizaetus philippensis</i>	Philippine Is.	NGT. CITES II. Currently considered near-threatened.. Overall status very poorly known.	Not recommended
Wallace's Hawk-eagle <i>Spizaetus nanus</i> 2 subspecies <i>S.n. nanus</i> , <i>S.n. stresemanni</i>	<i>S.n. nanus</i> - S Burma (Tennaserrim) and S Thailand through Malay Peninsula to Sumatra and Borneo. <i>S.n. stresemanni</i> - Nias I (off W Sumatra).	Rare. CITES II. Uncommon to rare. Increasingly threatened by loss of lowland rain forest throughout range;. Race <i>stresmanni</i> of Nias I currently reckoned to be endangered.	Not recommended
Black Hawk-eagle <i>Spizaetus tyrannus</i> 2 subspecies <i>S.t. serus</i> , <i>S.t. tyrannus</i>	<i>S.t. serus</i> - C Mexico S to Colombia, whence E of Andes to the Guianas, Trinidad and Brazil, and S to Paraguay and NE Argentina; recent records W of Andes in Ecuador and Peru (but not Colombia). <i>S.t.tyrannus</i> - E & S Brazil and extreme NE Argentina (Misiones).	NGT. CITES II. Fairly common in suitable habitat, but not in areas that have been heavily disturbed by agriculture. Declining in Mexico, due to habitat loss caused by cattle ranching, the timber industry and tourism.	Not recommended
Ornate Hawk-eagle <i>Spizaetus ornatus</i> 2 subspecies	<i>S.o. vicarius</i> - SE Mexico through Central America to W Colombia and W Ecuador. <i>S.o. ornatus</i> - E Colombia E to the Guianas and Trinidad,	NGT. CITES II.	DERP

<i>S.o. vicarius, S.o. ornatus</i>	and S through E Ecuador, NE Peru, N & E Bolivia and Brazil to Paraguay and N Argentina (Jujuy to Misiones).		
Crowned Hawk-eagle <i>Stephanoaetus coronatus</i>	Senegambia E to S Kenya and C Ethiopia, and S to Angola, NE Botswana and E South Africa.	NGT. CITES II. Vulnerable to deforestation and overhunting of prey animals, so now rare in many parts of W Africa	DERP
Black-and-chestnut Eagle <i>Oroaetus isidori</i>	Coastal ranges of NW Venezuela (Carabobo) and NE Colombia (Santa Marta Mts), and S on subtropical slopes of Andes from Venezuela (Mérida) through Colombia, Ecuador and Peru to WC Bolivia and NW Argentina.	NGT. CITES II. Currently considered near-threatened. Rare and patchily distributed; status very poorly known.	Not recommended

FAMILY SAGITTARIIDAE (SECRETARYBIRD)

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Secretarybird <i>Sagittarius serpentarius</i>	Senegambia E to Ethiopia and Somalia, and S to South Africa.	NGT. CITES II. Afforestation of grasslands and intensive land use have eliminated habitat, with some compensation where bush has been cleared for grazing or croplands. No total population estimates but over 1000 breeding pairs thought to occur in Transvaal Province of South Africa alone.	PMP

FAMILY FALCONIDAE (FALCONS & CARACARAS)

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Black Caracara <i>Daptrius ater</i>	E Colombia, S Venezuela and the Guianas S through Amazonia to E Peru, NE Bolivia and C Brazil (Maranhão, N Mato Grosso).	NGT. CITES II. Status very poorly known. Extensive range and catholic taste in terms of habitat and feeding habits suggest species relatively secure.	Not recommended
Red-throated Caracara <i>Daptrius americanus</i>	Extreme S Mexico (Chiapas) S to Colombia, S on Pacific slope to W Ecuador, and E of Andes to C Peru, N & E Bolivia and S Brazil (NW Paraná, Mato Grosso and São Paulo).	NGT. CITES II.	Not recommended
Carunculated Caracara <i>Phalcoboenus carunculatus</i>	Andes of Ecuador and SW Colombia.	NGT. CITES II. Probably relatively secure at present, as habitat not under significant pressure; no reports of persecution.	Not recommended
Mountain Caracara <i>Phalcoboenus megalopterus</i>	Andes from N Peru (Piura), through Bolivia to NW Argentina and C Chile (Colchagua).	NGT. CITES II.	Not recommended
White-throated Caracara <i>Phalcoboenus albogularis</i>	S Chile (Ñublé) and S Argentina (S Mendoza) S to Tierra del Fuego.	NGT. CITES II. Habitat not subject to much disturbance, and no persecution reported, so presumably not a species of immediate concern.	Not recommended
Striated Caracara <i>Phalcoboenus australis</i>	Islets off extreme S South Africa.	NGT. CITES II. Currently considered near-threatened. Rare overall.	Not recommended
Crested Caracara <i>Polyborus plancus</i> 4 subspecies <i>P.p. pallidus</i> , <i>P.p. audubonii</i> , <i>P.p. cheriway</i> , <i>P.p. plancus</i>	<i>P.p. pallidus</i> - Tres Marias Is, off W Mexico. <i>P.p. audubonii</i> - S USA (Florida; Texas to Arizona) through Central America to W Panama; Cuba, I of Pines. <i>P.p. cheriway</i> - E Panama through C & E Colombia to the Guianas and S to N Peru and R Amazon; Aruba	NGT. CITES II. Locally persecuted in some farming regions (e.g. in S Chile)	DERP

	(Netherlands Antilles) E to Trinidad. <i>P.p. plancus</i> - C Peru and C Bolivia E to Amazon Delta and S to Tierra del Fuego; Falkland Is.		
Yellow-headed Caracara <i>Milvago chimachima</i> 2 subspecies <i>M.c. cordatus</i> , <i>M.c. chimachima</i>	<i>M.c. cordatus</i> - S Costa Rica and Panama (including Pearl Is) through Colombia to the Guianas and Trinidad and S (E of Andes) to Amazon. <i>M.c. chimachima</i> - E Bolivia and Brazil S of Amazon to Paraguay, N Argentina and Uruguay.	NGT. CITES II.	Not recommended
Chimango Caracara <i>Milvago chimango</i> 2 subspecies <i>M.c. chimango</i> , <i>M.c. temucoensis</i>	<i>M.c. chimango</i> - N & C Chile and N & C Argentina through Paraguay to Uruguay and adjacent Brazil. <i>M.c. temucoensis</i> - S Chile (from near Concepción) and S Argentina (from R Chubut) S to Tierra del Fuego and Cape Horn. Introduced to Easter I (S Pacific).	NGT. CITES II.	Not recommended
Laughing Falcon <i>Herpetotheres cachinnans</i> 2 subspecies <i>H.c. chapmani</i> , <i>H.c. cachinnans</i> , <i>H.c. queribundus</i>	<i>H.c. chapmani</i> - Mexico (S Sonora and San Luis Potosí) S to Honduras. <i>H.c. cachinnans</i> - Nicaragua to Colombia and S to Peru and C Brazil. <i>H.c. queribundus</i> - E Bolivia and E Brazil (S to São Paulo) to Paraguay and N Argentina.	NGT. CITES II.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Barred Forest-falcon <i>Micrastur ruficollis</i> 6 subspecies <i>M.r. guerilla</i> , <i>M.r. interstes</i> , <i>M.r. zonothorax</i> , <i>M.r. concentricus</i> , <i>M.r. ruficollis</i> , <i>M.r. olrogi</i>	<i>M.r. guerilla</i> - S Mexico to Nicaragua. <i>M.r. interstes</i> - Costa Rica and Panama to W Colombia and W Ecuador. <i>M.r. zonothorax</i> - Colombia and Venezuela, in E Andean foothills, S perhaps to Bolivia. <i>M.r. concentricus</i> - S Venezuela, the Guianas and Amazonia. <i>M.r. ruficollis</i> - S of Amazonia in Brazil, Paraguay and NC & NE Argentina. <i>M.r. olrogi</i> - NW Argentina, in subtropical forests.	NGT. CITES II.	Not recommended
Plumbeous Forest-falcon <i>Micrastur plumbeus</i>	SW Colombia (Cauca, Nariño) and NW Ecuador (Esmeraldas).	Vulnerable. CITES II. Suffering from deforestation and degradation of habitat within limited range, both in Colombia and Ecuador	Not recommended
Lined Forest-falcon <i>Micrastur gilvicolis</i>	E Colombia through S Venezuela to the Guianas, and S throughout Amazonia.	NGT. CITES II.	Not recommended
Slaty-backed Forest-falcon <i>Micrastur mirandollei</i>	Costa Rica, Panama and Colombia (including W slope of Andes) through the Guianas and Amazonia to E Brazil (Espírito Santo).	NGT. CITES II. Status very poorly known, perhaps in part because so easily confused with other species. Widely distributed, but everywhere rare. One of rarest forest raptors in French Guiana, with estimated minimum average density of only 4 individuals/10,000 ha of forest.	Not recommended
Collared Forest-falcon <i>Micrastur semitorquatus</i> 2 subspecies <i>M.s. naso</i> , <i>M.s. semitorquatus</i>	<i>M.s. naso</i> - NC Mexico (Sinaloa to Tamaulipas) S through Central America to N & W Colombia and Ecuador. <i>M.s. semitorquatus</i> - E Colombia E to the Guianas, and S through E Peru, N & E Bolivia and Brazil to Paraguay and N Argentina.	NGT. CITES II. Not uncommon over vast range; secretive nature presumably reduces threat from hunters.	Not recommended
Buckley's Forest-falcon <i>Micrastur buckleyi</i>	Amazonian reaches of Ecuador and Peru; single record from SE Colombia; apparent recent record from Brazil (R Juruá,	Insufficiently known. CITES II. Status virtually unknown. Secretive nature of genus and sympatry with very similar	Not recommended

	Acre) has now been withdrawn.	<i>M.semitorquatus</i> render estimates of population levels very difficult.	
Spot-winged Falconet <i>Spiziapteryx circumcinctus</i>	E Bolivia (Santa Cruz) through Paraguay to N & C Argentina (S to Río Negro).	NGT. CITES II. Status virtually unknown; habitat is not amongst most seriously devastated in the region. Single record from Paraguay.	Not recommended
African Pygmy-falcon <i>Polihierax semitorquatus</i>	S Ethiopia, Somalia, NE Uganda and Kenya to NC Tanzania; S Angola and Namibia to NW South Africa.	NGT. CITES II.	PMP
White-rumped Pygmy-falcon <i>Polihierax insignis</i> 3 subspecies <i>P.i. insignis</i> , <i>P.i. cinereiceps</i> , <i>P.i. harmandi</i>	<i>P.i. insignis</i> - W & C Burma, especially in valley of R Irrawaddy. <i>P.i. cinereiceps</i> - S Burma (Tenasserim) and Thailand. <i>P.i. harmandi</i> - S Indochina, in S & C Laos, S Vietnam (S Annam, Cochinchina) and Kampuchea.	NGT. CITES II. Uncommon and local in Thailand.	Not recommended
Collared Falconet <i>Microhierax caerulescens</i> 2 subspecies <i>M.c. caerulescens</i> , <i>M.c.burmanicus</i>	<i>M.c. caerulescens</i> - E Himalayas of India (Kumaon) and Nepal to NE India (N Assam). <i>M.c. burmanicus</i> - Burma E to C & S Indochina.	NGT. CITES II. Tolerance of disturbed habitats, along with fairly varied diet, suggests species in no danger.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Black-thighed Falconet <i>Microhierax fringillarius</i>	S Burma (S Tenasserim) and S Thailand through Peninsular Malaysia to Sumatra, Borneo, Java and Bali.	NGT. CITES II. Tolerance of disturbed habitats, along with fairly varied diet, suggests species in no danger.	Not recommended
White-fronted Falconet <i>Microhierax latifrons</i>	N Borneo, in extreme NE Sawawak and Sabah.	NGT. CITES II. Currently considered near-threatened. Status uncertain,.	Not recommended
Philippine Falconet <i>Microhierax erythrogenys</i> 2 subspecies <i>M.e. erythrogenys</i> , <i>M.e. meridionalis</i>	<i>M.e. erythrogenys</i> - Luzon, Mindoro, Negros and Bohol (Philippines). <i>M.e. meridionalis</i> - Samar, Leyte and Cebu to Mindanao (Philippines).	NGT. CITES II.	Not recommended
Pied Falconet <i>Microhierax melanoleucus</i>	NE India (Assam) E across S China to Zhejiang, and S to N Laos and N & C Vietnam.	NGT. CITES II. Currently considered near-threatened	Not recommended
Lesser Kestrel <i>Falco naumanni</i>	SW Europe and N Africa E through E Europe, Asia Minor and Iran to Mongolia and N China (E to Shandong). Winters in Africa S of Sahara; also and irregularly in parts of S Asia.	Rare. CITES II. Drastic and apparently widespread decline in second half of 20 <sup>th</sup> century	Not recommended
Common Kestrel <i>Falco tinnunculus</i> 11 subspecies <i>F.t. tinnunculus</i> , <i>F.t. interstinctus</i> , <i>F.t. objurgatus</i> , <i>F.t. canariensis</i> , <i>F.t. dacotiae</i> , <i>F.t. neglectus</i> , <i>F.t. alexandri</i> , <i>F.t. rupicolaeformis</i> , <i>F.t. archerii</i> , <i>F.t. rufescens</i> , <i>F.t. rupicolus</i>	<i>F.t. tinnunculus</i> - N Africa, Europe and Middle East E to E Siberia and Soviet Far East. <i>F.t. interstinctus</i> - Tibet E through N Indochina and S & C China to Korea and Japan; winters S to India, Malay Peninsula and Philippines. <i>F.t. objurgatus</i> - S India (W & E Ghats) and Sri Lanka. <i>F.t. canariensis</i> - Madeira and W Canary Is. <i>F.t. dacotiae</i> - E Canary Is. <i>F.t. neglectus</i> - N Cape Verde Is. <i>F.t. alexandri</i> - SE Cape Verde Is. <i>F.t. rupicolaeformis</i> - NE Africa and Arabia. <i>F.t. archerii</i> - Somalia, coastal Kenya and Socotra. <i>F.t. rufescens</i> - W & C Africa, E to Ethiopia and S to S	NGT. CITES II.	Not recommended

	Tanzania and N Angola. <i>F.t. rupicolus</i> - N Angola, S Zaire and S Tanzania S to S South Africa.		
Madagascar Kestrel <i>Falco newtoni</i>	Madagascar and Aldabra Is; perhaps rare vagrant to the Comoro Is.	NGT. CITES II. Possible race <i>aldabranus</i> included on CITES I.	Not recommended
Mauritius Kestrel <i>Falco punctatus</i>	Mauritius I, SW Indian Ocean.	Endangered. CITES I. One of the rarest birds in the world by 1974, when only two pairs remained in the wild, due to cumulative loss of forest habitat, pesticides and depredations of introduced hunters. Captive propagation since, raised population in the wild to at least 50 breeding pairs and over 200 birds by 1993. Was, and may still be, vulnerable to pesticide use.	Not recommended
Seychelles Kestrel <i>Falco araea</i>	Islands of the Seychelles, W Indian Ocean. On Mahé and its satellites (St Anne, Cerf, Longue and probably Thérèse), Silhouette and North. Reintroduced to Praslin; vagrant to La Digue; and historically on Curieuse, Félicité, Marianne and possibly Sisters.	NGT. CITES II.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Spotted Kestrel <i>Falco moluccensis</i> 2 subspecies <i>F.m. moluccensis, F.m. microbalia</i>	<i>F.m. moluccensis</i> - Moluccas, from Morotai and Halmahera S to Buru, Seram and Seram Laut. <i>F.m. microbalia</i> - Sulawesi and surrounding small islands; Java and Lesser Sundas E to Tanimbar Is.	NGT. CITES II.	Not recommended
Australian Kestrel <i>Falco cenchroides</i> 2 subspecies <i>F.c. cenchroides, F.c. baru</i>	<i>F.c. cenchroides</i> - Australia, Tasmania, Lord Howe I, Norfolk I and Christmas I (Indian Ocean). Winters irregularly from Lesser Sundas and Moluccas through Aru Is and S New Guinea; occasionally to New Zealand. <i>F.c. baru</i> - Montane WC New Guinea.	NGT. CITES II.	Not recommended
American Kestrel <i>Falco sparverius</i> 17 subspecies <i>F.s. sparverius, F.s. paulus, F.s. peninsularis, F.s. tropicalis, F.s. nicaraguensis, F.s. sparverioides, F.s. dominicensis, F.s. caribaeorum, F.s. brevipennis, F.s. isabellinus, F.s. ochraceus, F.s. cauae, F.s. aequatorialis, F.s. peruvianus, F.s. fernandensis, F.s. cinnamominus, F.s. cearae</i>	<i>F.s. sparverius</i> - North America, from Alaska to Newfoundland, and S to W Mexico, except SE USA and coastal W Mexico; winters S through C American to Panama. <i>F.s. paulus</i> - South Carolina to Florida, USA. <i>F.s. peninsularis</i> - S Baja California, Sonora and Sinaloa, Mexico. <i>F.s. tropicalis</i> - S Mexico to N Honduras. <i>F.s. nicaraguensis</i> - Lowland pine savannas in Honduras and Nicaragua. <i>F.s. sparverioides</i> - Cuba and I of Pines; Bahamas. <i>F.s. dominicensis</i> - Hispaniola. <i>F.s. caribaeorum</i> - Puerto Rico to Grenada. <i>F.s. brevipennis</i> - Aruba, Curaçao and Bonaire (Netherlands Antilles). <i>F.s. isabellinus</i> - Venezuela to N Brazil. <i>F.s. ochraceus</i> - Mountains of E Colombia and NW Venezuela. <i>F.s. cauae</i> - Mountains of W Colombia. <i>F.s. aequatorialis</i> - Subtropical N Ecuador. <i>F.s. peruvianus</i> - Subtropical SW Ecuador, Peru and N Chile.	NGT. CITES II. No reliable estimates for most of Neotropical range. Decreasing in parts of SE USA, e.g. Florida (with entire population of race <i>paulus</i> ), because of habitat alterations; scarce or decreasing in some other regions of USA, e.g. Texas and Arkansas.	DERP

<p><i>F.s. fernandensis</i> - Robinson Crusoe I (Más a Tierra), in Juan Fernández Is, off WC Chile. <i>F.s. cinnamominus</i> - SE Peru, Chile and Argentina S to Tierra del Fuego. <i>F.s. cearae</i> - Tablelands from NE Brazil S and W to E Bolivia.</p>		
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Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Greater Kestrel <i>Falco rupicoloides</i> 3 subspecies <i>F.r. fieldi</i> , <i>F.r. arthuri</i> , <i>F.r. rupicoloides</i>	<i>F.r. fieldi</i> - N & E Ethiopia, NW Somalia. <i>F.r. arthuri</i> - NE Tanzania, Kenya. <i>F.r. rupicoloides</i> - Namibia, Botswana, SW Zambia and Zimbabwe to South Africa.	NGT. CITES II.	Not recommended
Fox Kestrel <i>Falco alopex</i>	Senegambia E through N Cameroon and Sudan to Red Sea coast of Ethiopia, S to NE Zaire, NW Kenya and NE Uganda.	NGT. CITES II. Little studied and may be vulnerable through limited and localized breeding range on rocky hills, although these eminences are usually less subject to habitat degradation than the surrounding savanna.	Not recommended
Grey Kestrel <i>Falco ardosiaceus</i>	Senegambia E to Ethiopia and S through W Kenya and W Tanzania to Angola, N Zambia, N Namibia and NW Botswana.	NGT. CITES II.	Not recommended
Dickinson's Kestrel <i>Falco dickinsoni</i>	SC Africa, from Angola E through S Zaire to SC Tanzania (including Zanzibar and Pemba), and S to N Namibia, N Botswana and NE South Africa.	NGT. CITES II.	Not recommended
Banded Kestrel <i>Falco zoniventris</i>	Madagascar.	NGT. CITES II. Currently considered near-threatened. Locally common but habitat limited and declining through deforestation. Not more than 1000 pairs predicted as total population, but able to exist in secondary habitats in some areas. .	Not recommended
Red-necked Falcon <i>Falco chicquera</i> 3 subspecies <i>F.c. chicquera</i> , <i>F.c. ruficollis</i> , <i>F.c. horsbrughi</i>	<i>F.c. chicquera</i> - SE Iran E through Pakistan and India to Nepal and Bangladesh. <i>F.c. ruficollis</i> - Senegambia E to Ethiopia and S Somalia, then S to Zambia, Malawi and N Mozambique. <i>F.c. horsbrughi</i> - S of R Zambezi, from Zimbabwe and S Mozambique W to Botswana, Namibia and S Angola, and S to N South Africa.	NGT. CITES II.	Not recommended
Red-footed Falcon <i>Falco vespertinus</i>	E Europe, from Estonia and Hungary, E through NC Asia to extreme NW China and upper R Lena. Winters mainly in SW Africa, from Angola, Namibia and N South Africa through Botswana to Zimbabwe and Zambia.	NGT. CITES II. Marked decline, particularly in S of breeding range, probably due, directly or indirectly, to pesticide use.	Not recommended
Amur Falcon <i>Falco amurensis</i>	Transbaikalia (SE Siberia) and NE Mongolia E to Amurland and S to N & E China and N Korea; has bred in Assam (NE India). Winters in S Africa, mainly from Malawi to Transvaal.	NGT. CITES II. Size of population not known; may be stable; at least locally common, e.g. SE of L Baikal and in Mongolia.	Not recommended
Eleanora's Falcon <i>Falco eleonora</i>	Islands and rocky coasts from Canary Is and NW Morocco E through Mediterranean to Lemnos, N Sporades, Cyclades, Dodecanese, Crete and Cyprus. Winters mainly in Madagascar, but also in E Africa and Mascarene Is.	NGT. CITES II.	Not recommended



Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Sooty Falcon <i>Falco concolor</i>	E Libya through Egypt, Israel and Jordan to coasts of Red Sea and Persian Golf, E to SW Pakistan. Winters in Madagascar, and also in SE Africa.	NGT. CITES II. Numbers possibly stable.	Not recommended
Aplomado Falcon <i>Falco femoralis</i> 3 subspecies <i>F.f. septentrionalis</i> , <i>F.f. femoralis</i> , <i>F.f. pichinchae</i>	<i>F.f. septentrionalis</i> - S USA (Arizona, New Mexico and Texas) S locally through Mexico to Guatemala. <i>F.f. femoralis</i> - Nicaragua and Belize through Panama to Colombia, E to the Guianas, and S through E Bolivia and Brazil to Argentina, extending S to Tierra del Fuego. <i>F.f. pichinchae</i> - Temperate zones of SW Colombia, Ecuador, Peru and W Bolivia S to N Chile and NW Argentina (Tucumán).	NGT. CITES II. Virtually eliminated for poorly understood reasons in S USA and N Mexico;	DERP
Merlin <i>Falco columbarius</i> 9 subspecies <i>F.c. subaesalon</i> , <i>F.c. aesalon</i> , <i>F.c. insignis</i> , <i>F.c. pacificus</i> , <i>F.c. pallidus</i> , <i>F.c. lymani</i> , <i>F.c. suckleyi</i> , <i>F.c. columbarius</i> , <i>F.c. richardsoni</i>	<i>F.c. subaesalon</i> - Iceland. <i>F.c. aesalon</i> - N Eurasia, from Faeroes E to C Siberia. <i>F.c. insignis</i> - Siberia, E of R Yenisey to R Kolyma. <i>F.c. pacificus</i> - Soviet Far E, including Sakhalin I. <i>F.c. pallidus</i> - Steppes of Asia, from near Aral Sea to Altai Mts. <i>F.c. lymani</i> - Mountains of C Asia, in Turkestan, E Russia, NW China and Mongolia. <i>F.c. suckleyi</i> - Pacific coast of North America, from Alaska and British Columbia to N Washington. <i>F.c. columbarius</i> - North America, from Alaska and British Columbia to N Washington. <i>F.c. richardsoni</i> - Great Plains of North America, from C Alberta S to Wyoming.	NGT. CITES II. Status of Asian races not satisfactorily documented. .	DERP
Bat Falcon <i>Falco ruficularis</i> 3 subspecies <i>F.r. petoensis</i> , <i>F.r. ruficularis</i> , <i>F.r. ophryophanes</i>	<i>F.r. petoensis</i> - N Mexico (from Sonora E to Tamaulipas) S through Central America to Colombia, and W of Andes S to Ecuador. <i>F.r. ruficularis</i> - E Colombia E to the Guianas and Trinidad, and S to S Brazil and N Argentina. <i>F.r. ophryophanes</i> - Tableland of C Brazil (Piauí S to Mato Grosso, São Paulo and Paraná) and adjacent Bolivia, Paraguay and N Argentina.	NGT. CITES II.	Not recommended
Orange-breasted Falcon <i>Falco deiroleucus</i>	S Mexico S through Central America to Colombia, E to the Guianas and Trinidad, and E of Andes S through Brazil and Bolivia to Paraguay and N Argentina.	NGT. CITES II. Currently considered near-threatened. Sparse distribution throughout range and apparent sensitivity to deforestation suggest species requires careful attention. . Population of Guatemala and Belize possibly disjunct now from South American populations, and may merit special concern.	Not recommended
Eurasian Hobby <i>Falco subbuteo</i> 2 subspecies <i>F.s. subbuteo</i> , <i>F.s. streichi</i>	<i>F.s. subbuteo</i> - NW Africa and Europe E through C Asia and N China to Kamchatka, Sakhalin and N Japan; winters in C & S Africa and S Asia. <i>F.s. streichi</i> - S & E China, S from Qin Ling Mts (S Shaanxi); possibly also N & E Burma and N Indochina.	NGT. CITES II. Population levels and trends not well known;	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
African Hobby <i>Falco cuvierii</i>	Senegambia E to Ethiopia and S to SE South Africa.	NGT. CITES II.	Not recommended
Oriental Hobby <i>Falco severus</i>	NW India and Nepal E to Yunnan, Guangdong and Hainan (S China), and S through Burma, Thailand and Indochina to Philippines, Java and Sulawesi, whence E through New Guinea to Solomon Is. Himalayan birds winter S to S India and Sri Lanka.	NGT. CITES II.	Not recommended
Australian Hobby <i>Falco longipennis</i> 2 subspecies <i>F.l. hanieli</i> , <i>F.l. longipennis</i>	<i>F.l. hanieli</i> - Lesser Sundas, from Lombok to Timor. <i>F.l. longipennis</i> - Australia and Tasmania; outside breeding season occurs N to New Guinea, New Britain and Moluccas.	NGT. CITES II. Population probably stable; has benefited from introduced prey. Eggshell thickness significantly reduced by DDT use (now ceased); local breeding depression likely in S agricultural areas.	Not recommended
New Zealand Falcon <i>Falco novaeseelandiae</i>	New Zealand, Stewart I, Auckland Is.	NGT. CITES II. Currently considered near-threatened. Population declined through habitat destruction, persecution and effects of DDT, but now stable at c. 3000-4500 breeding pairs.	Not recommended
Brown Falcon <i>Falco berigora</i> 3 subspecies <i>F.b. novaeguineae</i> , <i>F.b. berigora</i> , <i>F.b. occidentalis</i>	<i>F.b. novaeguineae</i> - C & E New Guinea and coastal N Australia. <i>F.b. berigora</i> - E, C & N Australia and Tasmania. <i>F.b. occidentalis</i> - SW & CW Australia.	NGT. CITES II.	Not recommended
Grey Falcon <i>Falco hypoleucos</i>	C & NW Australia	Rare. CITES II. Scarce and possibly declining; breeding zone has contracted to arid zone. Total population estimated at c. 1000 breeding pairs.	Not recommended
Black Falcon <i>Falco subniger</i>	C & E Australia.	NGT. CITES II.	Not recommended
Lanner Falcon <i>Falco biarmicus</i> 5 subspecies <i>F.b. feldeggii</i> , <i>F.b. erlangeri</i> , <i>F.b. tanypterus</i> , <i>F.b. abyssinicus</i> , <i>F.b. biarmicus</i>	<i>F.b. feldeggii</i> - S Italy and Sicily E to Armenia and Azerbaijan, then S to Lebanon. <i>F.b. erlangeri</i> - NW Africa, from Mauritania to Morocco and Tunisia. <i>F.b. tanypterus</i> - NE Africa, including Egypt and N Sudan, to Arabia, Israel and Iraq. <i>F.b. abyssinicus</i> - Senegal and Ghana E to Ethiopia and Somalia, and S to Uganda and N Zaire. <i>F.b. biarmicus</i> - Angola, S Zaire and Kenya S to South Africa.	NGT. CITES II.	DERP
Laggar Falcon <i>Falco jugger</i>	Pakistan E throughout most of India and Nepal to Assam and N Burma; absent from extreme S India. Also occurs locally in S Afghanistan and possibly SE Iran.	NGT. CITES II. Uncommon to rare and local. Population declines noted in Pakistan and W India probably due to reduction of prey available as result of extensive cultivation.	Phase Out
Saker Falcon <i>Falco cherrug</i> 2 subspecies <i>F.c. cherrug</i> , <i>F.c. milvipes</i>	<i>F.c. cherrug</i> - C Europe E through SW Russia, Ukraine and Iran to R Yenisey and foothills of Altai; winters from Europe and NE Africa E to NW India. <i>F.c. milvipes</i> - SE Siberia, N Mongolia and N China S to W & C China; winters from Iran E to Nepal and NW India, Tibet and C China.	NGT. CITES II. Currently considered near-threatened.	DERP

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Gyr Falcon <i>Falco rusticolus</i>	Circumpolar, occupying Arctic regions of Eurasia, North America, Greenland and Iceland; some birds move farther S for winter.	NGT. CITES I. Currently considered near-threatened.	DERP
Prairie Falcon <i>Falco mexicanus</i>	SW Canada through W & WC USA to N Mexico; winters to EC USA and NC Mexico.	NGT. CITES II. Widely used in falconry, with no apparent effect on population.	DERP
Peregrine Falcon <i>Falco peregrinus</i> 19 subspecies <i>F.p. tundrius</i> , <i>F.p. anatum</i> , <i>F.p. pealei</i> , <i>F.p. cassini</i> , <i>F.p. japonensis</i> , <i>F.p. furuittii</i> , <i>F.p. calidus</i> , <i>F.p. peregrinus</i> , <i>F.p. brookei</i> , <i>F.p. babylonicus</i> , <i>F.p. pelegrinoides</i> , <i>F.p. madens</i> , <i>F.p. minor</i> , <i>F.p. radama</i> , <i>F.p. peregrinator</i> , <i>F.p. ernesti</i> , <i>F.p. nesiototes</i> , <i>F.p. macropus</i> , <i>F.p. submelanogenys</i>	<i>F.p. tundrius</i> - Arctic tundra of North America, from Alaska to Greenland. <i>F.p. anatum</i> - North America S of tundra to N Mexico, except NW Pacific Coast. <i>F.p. pealei</i> - Coastal W North America from Washington N to W Alaska, and W through Aleutian and Commander Is ; possibly also coastal Kamchatka and Kuril Is. <i>F.p. cassini</i> - W South America, from Ecuador (locally) S through Bolivia and N Argentina to S Chile, Tierra del Fuego and Falkland Is. <i>F.p. japonensis</i> - NE Siberia S to Kamchatka and Japan (may not be race of coastal Kamchatka). <i>F.p. furuittii</i> - Volcano Is and possibly Bonin Is. <i>F.p. calidus</i> - Tundra of Eurasia, from Lapland E to NE Siberia, roughly to region of R Yana and R Indigirka. <i>F.p. peregrinus</i> - Eurasia S of tundra and N of Pyrenees, Balkans and Himalayas, from British Is E to Amurland and Ussuriland in Russian Far East. <i>F.p. brookei</i> - S France, Spain and coastal N Africa E through Mediterranean to Caucasus. <i>F.p. babylonicus</i> - Asia, from E Iran to Mongolia. <i>F.p. pelegrinoides</i> - Canary Is E through inland N Africa to Iraq, and probably Iran. <i>F.p. madens</i> - Cape Verde Is. <i>F.p. minor</i> - Africa S of Sahara, and N into extreme S Morocco. <i>F.p. radama</i> - Madagascar and Comoro Is. <i>F.p. peregrinator</i> - Pakistan, India and Sri Lanka E to SE China. <i>F.p. ernesti</i> - Indonesia and Philippines E to New Guinea and Bismarck Archipelago. <i>F.p. nesiototes</i> - Vanuatu and New Caledonia (race uncertain) E to Fiji. <i>F.p. macropus</i> - Australia (except SW). <i>F.p. submelanogenys</i> - SW Australia.	NGT. CITES I.	DERP
Taita Falcon <i>Falco fasciinucha</i>	S Ethiopia through Kenya, Uganda, Tanzania, Malawi, E Zambia, SW Mozambique and Zimbabwe to NE South Africa.	NGT. CITES II. Currently considered near-threatened. Extremely localized and easily overlooked throughout most of its wide range, e.g. in Kenya, where not recently recorded from Taita (Teita) Hills, where originally collected.	Not recommended

FAMILY TYTONINAE

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World</u> <u>vol. 2&amp; 5</u> )	TAG Recommendation
Greater Sooty Owl <i>Tyto tenebricosa</i> <i>T.t. arfaki</i> , <i>T.t. tenebricosa</i>	<i>T.t. arfaki</i> – New Guinea and Yapen I. <i>T.t. tenebricosa</i> - SE Australia	NGT. CITES II	Not recommended
Lesser Sooty Owl <i>Tyto multipunctata</i>	NE Queensland, from Cedar Bay S to Paluma and inland to Windsor, Atherton and Evelyn Tablelands	NGT. CITES II. Restricted range species. Currently considered near threatened.	Not recommended
Australian Masked Owl <i>Tyto novaehollandiae</i> <i>T.t. calabyi</i> , <i>T.n. melvillensis</i> , <i>T.n. galei</i> , <i>T.n. kimberli</i> , <i>T.n. novaehollandiae</i> , <i>T.n. castanops</i>	<i>T.t. calabyi</i> – S New Guinea, in S Trans-Fly region, from Merauke area to Tarara and Daru I. <i>T.n. melvillensis</i> – Melville I and Bathurst I. <i>T.n. galei</i> – NE Cape York Penninsula to NE Queensland <i>T.n. kimberli</i> – N Australia <i>T.n. novaehollandiae</i> – SW Western Australia E to Victoria and N to NE to Queensland. <i>T.n. castanops</i> – Tasmania and Marie I	NGT. CITES II	Not recommended
Golden Masked Owl <i>Tyto aurantia</i>	New Britain	Vulnerable. CITES II. Restricted range species. Considered rare with few field records and sightings.	Not recommended
Manua Masked Owl <i>Tyto manusi</i>	Manus I and Admiralty Is.	Vulnerable. CITES II. Restricted range species. No recent records.	Not recommended
Lesser Masked Owl <i>Tyto sorocula</i> <i>T.s. cayelii</i> , <i>T.s. sororcula</i>	<i>T.s. cayelii</i> – Buru, also Seram <i>T.s. sororcula</i> - Tanimbar Is.	NGT. CITES II. Restricted-range species.	Not recommended
Taliabu Masked Owl <i>Tyto nigrobrunnea</i>	Taliabu, in Sula Is.	Vulnerable. CITES II. Restricted range species. Presumed to be scarce.	Not recommended
Minahassa Masked Owl <i>Tyto inexpectata</i>	N & NC Sulawesi	NGT. CITES II. Restricted-range species.	Not recommended
Sulawesi Owl <i>Tyto rosenbergii</i> <i>T.r. rosenbergii</i> , <i>T.r. pelengensis</i>	<i>T.r. rosenbergii</i> – Sulawesi and Sangihe <i>T.r. pelengensis</i> – Banggai Is.	NGT. CITES II. Widespread but generally uncommon in Sulawesi.	Not recommended
Common Barn Owl <i>Tyto alba</i> 26 subspecies including: <i>T.a. alba</i> , <i>T.a. delicatula</i> , <i>T.a. pratincola</i>	North America, Europe, Africa, South America, Australia, Malaysia	NGT. CITES II. Status of many populations uncertain particularly those on islands. Locally common in some areas and species expanding parts of it's range.	DERP
Ashy-faced Owl <i>Tyto glaucops</i> <i>T.g. glaucops</i> , <i>T.g. nigrescens</i> , <i>T.g. insularis</i>	<i>T.g. glaucops</i> – Hispaniola, including Tortue I. <i>T.g. nigrescens</i> – Dominica <i>T.g. insularis</i> – St. Vincent, Bequia, Union, Carriacou and Grenada.	NGT. CITES II. Restricted range species.	Not recommended
Madagascar Red Owl <i>Tyto soumagnei</i>	N & NE Madagascar	Endangered. CITES I.	Not recommended
African Grass Owl <i>Tyto capensis</i>	Cameroon highlands; Congo; N. Angola E to S Uganda and W Kenya, W Tanzania and Zambia to W Mozambique and E South Africa.	NGT. CITES II.	Not recommended
Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World</u> <u>vol. 2&amp; 5</u> )	TAG Recommendation
Eastern Grass Owl <i>Tyto longimembris</i> <i>T.l. longimembris</i> , <i>T.l. chinensis</i> ,	<i>T.l. longimembris</i> – India, S Nepal, Bangladesh, Myanmar, Sulawesi, Tukangbesi, Is. , Flores, Sumba, and N, C & E Australia	NGT. CITES II. Rare to very rare throughout most of range.	Not recommended

<i>T.l. pithecopis</i> , <i>T.l. amuaronota</i> , <i>T.l. baliem</i> , <i>T.l. papuensis</i>	<i>T.l. chinensis</i> – SE China and Vietnam <i>T.l. pithecopis</i> – Taiwan <i>T.l. amuaronota</i> – Philippines <i>T.l. baliem</i> – W New Guinea <i>T.l. papuensis</i> – E. New Guinea		
Oriental Bay Owl <i>Phodilus badius</i> <i>P.b. saturatus</i> , <i>P.b. riplei</i> , <i>P.b. assimilis</i> , <i>P.b. badius</i> , <i>P.b. arixuthus</i> , <i>P.b. parvus</i>	<i>P.b. saturatus</i> – Sikkim & NE India, N & C Myanmar, Thailand E to Vietnam and SE China <i>P.b. riplei</i> – SW India <i>P.b. assimilis</i> – C & S Sri Lanka <i>P.b. badius</i> – Malay Peninsula and Greater Sundas <i>P.b. arixuthus</i> – Natuna Is. <i>P.b. parvus</i> – Belitung I.	NGT. CITES II.	Phase Out
Congo Bay Owl <i>Phodilus prigoginei</i>	Itombe, Massif, extreme E. Zaire.	Vulnerable. CITES II. Restricted-range species. Rare and elusive.	Not recommended

FAMILY STRIGIDAE (TYPICAL OWLS)

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
White-fronted Scops-owl <i>Otus sagittatus</i>	S Myanmar (Tenasserim), S Thailand and Malay Peninsula; possibly Sumatra (status uncertain).	Vulnerable. CITES II. Described as rare or very rare and declining throughout its range, but very poorly known. Extensive lowland deforestation considered greatest threat to survival.	Not recommended
Reddish Scops-owl <i>Otus rufescens</i> 2 subspecies <i>O.r. malayensis</i> , <i>O.r. rufescens</i>	<i>O.r. malayensis</i> - S peninsular Thailand and peninsular Malaysia. <i>O.r. rufescens</i> - Sumatra, Bangka, Java and Borneo	NGT. CITES II. Rare throughout range, and probably declining in most parts, but elusive and little known.	Not recommended
Sandy Scops-owl <i>Otus icterorhynchus</i> 2 subspecies <i>O.i. icterorhynchus</i> , <i>O.i. holerythrus</i>	<i>O.i. icterorhynchus</i> - Liberia, Ivory Coast and Ghana. <i>O.i. holerythrus</i> - S Cameroon, N Congo and N & E Zaire; probably also N Gabon.	NGT. CITES II. Appears to be rare throughout its fragmented range; only 4 known specimens, 2 from each of Ghana and Cameroon. Assessment of status difficult, owing to its poorly documented distribution and biology.	Not recommended
Sokoke Scops-owl <i>Otus ireneae</i>	Sokoke-Arabuku Forest in SE Kenya, and NE Tanzania (lowlands N of E Usambara Mts).	Vulnerable. CITES I. Restricted-range species: present in Tanzania-Malawi Mountains EBA and East African Coastal Forests EBA. Conservation efforts impeded by lack of funding.	Not recommended
Andaman Scops-owl <i>Otus balli</i>	Andaman Is.	NGT. CITES II. Restricted-range species: present in Andaman Islands EBA. Currently considered near-threatened.	Not recommended
Flores Scops-owl <i>Otus alfredi</i>	Flores I, in Lesser Sundas.	NGT. CITES II. Restricted-range species: present in Northern Nusa Tenggara EBA. True status unknown, but almost certainly rare; probably not listed as threatened because true specific status misunderstood.	Not recommended
Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Mountain Scops-owl <i>Otus spilocephalus</i> 8 subspecies <i>O.s. huttoni</i> , <i>O.s. spilocephalus</i> , <i>O.s. latouchi</i> , <i>O.s. hambroeki</i> , <i>O.s. siamensis</i> , <i>O.s. vulpes</i> , <i>O.s. vandewateri</i> , <i>O.s. luciae</i>	<i>O.s. huttoni</i> - N Pakistan E to C Nepal. <i>O.s. spilocephalus</i> - C Nepal E to Arunachal Pradesh and Myanmar. <i>O.s. latouchi</i> - N Thailand and Laos to SE China and Hainan. <i>O.s. hambroeki</i> - Taiwan. <i>O.s. siamensis</i> - S Thailand to S Vietnam. <i>O.s. vulpes</i> - Malay Peninsula.	NGT. CITES II. Fairly adaptable; fact that species will occupy areas of dense regenerating growth at disturbed forest edge should aid its survival.	Not recommended

	<i>O.s. vandewateri</i> - Sumatra. <i>O.s. luciae</i> - Borneo		
Rajah Scops-owl <i>Otus brookii</i> 2 subspecies <i>O.b. solokensis</i> , <i>O.b. brookii</i>	<i>O.b. solokensis</i> - Sumatra. <i>O.b. brookii</i> - Borneo. Specimen collected in E Java (Ijen) assigned to this species, but identity disputed; may belong to another species of <i>Otus</i> .	NGT. CITES II. Restricted range species: present in Bornean Mountains EBA and Sumatra and Peninsular Malaysia EBA. Considered rare; possibly more widespread, but few observations within its known range.	Not recommended
Javan Scops-owl <i>Otus angelinae</i>	W Java.	Vulnerable. CITES II. Restricted range species: present in Java and Bali Forests EBA.	Not recommended
Mentawai Scops-owl <i>Otus mentawi</i>	Mentawai Is (Siberut to S Pagai), off W Sumatra.	NGT. CITES II. Status poorly known; appears to be rare and rather patchily distributed, but possibly locally common.	Not recommended
Indian Scops-owl <i>Otus bakkamoena</i> 5 subspecies <i>O.b. plumipes</i> , <i>O.b. deserticolor</i> , <i>O.b. gangeticus</i> , <i>O.b. Marathae</i> , <i>O.b. bakkamoena</i>	<i>O.b. plumipes</i> - W Himalayas, from N Pakistan E to Nepal border. <i>O.b. deserticolor</i> - S Pakistan; possibly SE Iran; old record from Oman probably erroneous. <i>O.b. gangeticus</i> - NW India to lowland Nepal. <i>O.b. marathae</i> - C India, E to about S West Bengal. <i>O.b. bakkamoena</i> - SW & SE India and Sri Lanka.	NGT. CITES II.	Not recommended
Collared Scops-owl <i>Otus lettia</i> 5 subspecies <i>O.l. erythrocampe</i> , <i>O.l. ussuriensis</i> , <i>O.l. glabripes</i> , <i>O.l. umbratilis</i>	<i>O.l. lettia</i> - E Nepal, E India (West Bengal) and Bangladesh, E to Assam, Myanmar, Thailand (except S peninsula) and Indochina. <i>O.l. erythrocampe</i> - SE China. <i>O.l. ussuriensis</i> - Sakhalin, Ussuriland and NE China. <i>O.l. glabripes</i> - Taiwan. <i>O.l. umbratilis</i> - Hainan I.	NGT. CITES II.	Not recommended
Sunda Scops-owl <i>Otus lempiji</i> 6 subspecies <i>O.l. condorensis</i> , <i>O.l. lempiji</i> , <i>O.l. cnephaeus</i> , <i>O.l. hypnodes</i> , <i>O.l. lemurum</i> , <i>O.l. kangeanus</i>	<i>O.l. condorensis</i> - S peninsular Thailand below Isthmus of Kra. <i>O.l. lempiji</i> - Malay Peninsula (except S), S Sumatra, Bangka, Belitung, Java, Bali, N Natuna Is, Borneo (except N). <i>O.l. cnephaeus</i> - S Malay Peninsula. <i>O.l. hypnodes</i> - N & C Sumatra. <i>O.l. lemurum</i> - N Borneo. <i>O.l. kangeanus</i> - Kangean Is.	NGT. CITES II. Would appear to benefit from conversion of forested land to agricultural uses, enabling possible range expansion.	Not recommended
Japanese Scops-owl <i>Otus semitorques</i> 2 subspecies <i>O.s. semitorques</i> , <i>O.s. pryeri</i>	<i>O.s. semitorques</i> - S Kuril Is (Urup S to Kunashir), and Hokkaido S to Yakushima, including Sado, Tsushima, Goto Is and Yakushima. <i>O.s. pryeri</i> - S Izu Is (Hachijo) and S Ryukyu Is .	NGT. CITES II. Race <i>preyeri</i> poorly known; although reported as abundant in Iriomote, this not substantiated by later observations. No obvious threats, and appears able to live in proximity to man.	Not recommended
<b>Common Name</b> <b>Scientific Name</b>	<b>Range</b>	<b>Status in Wild (from <u>Handbook to the Birds of the World</u> vol. 2&amp; 5)</b>	<b>TAG Recommendation</b>
Palawan Scops-owl <i>Otus fuliginosus</i>	Palawan I, in SW Philippines.	Vulnerable. CITES II. Restricted-range species: present in Palawan EBA. Said to be very rare.	Not recommended
Philippine Scops-owl <i>Otus megalotis</i> 4 subspecies <i>O.m. megalotis</i> , <i>O.m. everetti</i> , <i>O.m. nigrorum</i> , <i>O.m. boholensis</i>	<i>O.m. megalotis</i> - Luzon, Marinduque and Catanduanes. <i>O.m. everetti</i> - Samar, Biliran, Leyte, Mindanao and Basilan. <i>O.m. nigrorum</i> - Negros. <i>O.m. boholensis</i> - Bohol.	NGT. CITES II. Few reliable data. Reports vary from probably endangered to widely distributed (on Mt Isarog), but very little is known about this species.	Not recommended
Wallace's Scops-owl	Sumbawa and Flores, in Lesser Sundas	NGT. CITES II. Restricted-range species. Currently considered	Not recommended

<i>Otus silvicola</i>		near-threatened.	
Mindanao Scops-owl <i>Otus mirus</i>	Mindanao I, in S Philippines.	Vulnerable. CITES II. Restricted-range species	Not recommended
Luzon Scops-owl <i>Otus longicornis</i>	Luzon, in N Philippines.	Vulnerable. CITES II. Restricted-range species.	Not recommended
Mindoro Scops-owl <i>Otus mindorensis</i>	Mindoro, in NC Philippines.	Vulnerable. CITES II. Restricted-range species	Not recommended
Pallid Scops-owl <i>Otus brucei</i> 4 subspecies <i>O.b. brucei</i> , <i>O.b. obsoletus</i> , <i>O.b. semenowi</i> , <i>O.b. exiguus</i>	<i>O.b. brucei</i> - E Aral Sea to Kirgizia and Tadjikistan. <i>O.b. obsoletus</i> - S Turkey, N Syria, N Iraq, Turkmeniya, Uzbekistan and N Afghanistan. <i>O.b. semenowi</i> - S Tadjikistan and W China (E to C Tarim Basin) S to E Afghanistan and N Pakistan. <i>O.b. exiguus</i> - Israel (extinct as breeder), C & E Iraq, S Iran, Oman, S Afghanistan, W Pakistan.	NGT. CITES II. Status not well known. May be reasonably common in much of range, but few data. No known threats.	Not recommended
African Scops-owl <i>Otus senegalensis</i> 5 subspecies <i>O.s. senegalensis</i> , <i>O.s. pamelae</i> , <i>O.s. socotranus</i> , <i>O.s. feae</i> , <i>O.s. nivosus</i>	<i>O.s. senegalensis</i> - From Senegal and Sierra Leone E to NW Ethiopia and Somalia, S (except in SE Kenya) to SE South Africa. <i>O.s. pamelae</i> - S Saudi Arabia. <i>O.s. socotranus</i> - Socotra I. <i>O.s. feae</i> - Annobon I (Pagalu), in S Gulf of Guinea. <i>O.s. nivosus</i> - SE Kenya (lower Tana R to Lali Hills).	NGT. CITES II. Secretive habits make any accurate assessment of numbers difficult.	Not recommended
Eurasian Scops-owl <i>Otus scops</i> 6 subspecies <i>O.s. scops</i> , <i>O.s. pulchellus</i> , <i>O.s. mallorcae</i> , <i>O.s. cycladum</i> , <i>O.s. cyprius</i> , <i>O.s. turanicus</i>	<i>O.s. scops</i> - France, Italy and C Mediterranean islands E to Volga R, S to N Greece, N Turkey and Transcaucasia; intergrades with <i>pulchellus</i> . <i>O.s. pulchellus</i> - Volga R E to L Baikal, S to Altai and Tien Shan. <i>O.s. mallorcae</i> - Iberia, Balearic Is, NW Africa (NC Morocco to Tunisia). <i>O.s. cycladum</i> - S Greece and S Asia Minor, S to C Israel and Jordan. <i>O.s. cyprius</i> - Cyprus.  <i>O.s. turanicus</i> - Iraq and Iran (and perhaps this race SE Turkey) E to NW Pakistan.	NGT. CITES II.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Oriental Scops-owl <i>Otus sunia</i> 7 subspecies <i>O.s. sunia</i> , <i>O.s. rufipennis</i> , <i>O.s. leggei</i> , <i>O.s. modestus</i> , <i>O.s. malayanus</i> , <i>O.s. stictonotus</i> , <i>O.s. japonicus</i>	<i>O.s. sunia</i> - N Pakistan E to Bangladesh, and N India. <i>O.s. rufipennis</i> - S India. <i>O.s. leggei</i> - Sri Lanka. <i>O.s. modestus</i> - Assam (S to Brahmaputra R), Myanmar, N & W Thailand, Indochina; also Andamans and C Nicobars (Camorta). <i>O.s. malayanus</i> - S China (Yunnan E to Guangdong). <i>O.s. stictonotus</i> - SE Siberia, Sakhalin, NE China, N Korea. <i>O.s. japonicus</i> - <b>Japan</b> .	NGT. CITES II. Varies in abundance regionally: scarce and very local in Pakistan, and scarce but more widespread in Sri Lanka, but fairly common in most of Indian Subcontinent; uncommon in Thailand; uncommon in Japan, but said to be commonest strigid in SE Siberia.	Not recommended
Flammulated Owl <i>Otus flammeolus</i>	Breeds from SW Canada (SC British Columbia) S to NW & SW USA and NE, W & C Mexico (and E in highlands to S	NGT. CITES II. Common in North America, but considered sensitive in USA and vulnerable in Canada.	Not recommended

	Puebla, and NE Oaxaca). Winters to C & S Mexico and Guatemala, possibly El Salvador.		
Muluccan Scops-owl <i>Otus magicus</i> 7 subspecies <i>O.m. morotensis</i> , <i>O.m. leucospilus</i> , <i>O.m. obira</i> , <i>O.m. magicus</i> , <i>O.m. bouruensis</i> , <i>O.m. albiventris</i> , <i>O.m. tempestatis</i>	<i>O.m. morotensis</i> - Morotai, Ternate. <i>O.m. leucospilus</i> - Halmahera, Kasiruta, Bacan. <i>O.m. obira</i> - Obi Is. <i>O.m. magicus</i> - Seram, Ambon. <i>O.m. bouruensis</i> - Buru. <i>O.m. albiventris</i> - Lombok, Sumbawa, Flores, Lomblen. <i>O.m. tempestatis</i> - Wetar.	NGT. CITES II. Considered common on Buru and uncommon on Sumbawa; no data on status from rest of range. Forest destruction probably a threat in the long term.	Not recommended
Mantanani Scops-owl <i>Otus mantananensis</i> 4 subspecies <i>O.m. romblonis</i> , <i>O.m. cuyensis</i> , <i>O.m. mantananensis</i> , <i>O.m. sibuensis</i>	<i>O.m. romblonis</i> - Banton, Sibuyan, Romblon, Tablas, Tres Reyes and Semirara, in C Philippines. <i>O.m. cuyensis</i> - S Calamian Is (Dicabaito, Linapacan) and Cuyo I. <i>O.m. mantananensis</i> - Mantanani I, off N Borneo, and islands off S coast of Palawan. <i>O.m. sibuensis</i> - Sibutu and Tumindao, in SW Sulu Is.	NGT. CITES II. Restricted-range species.	Not recommended
Ryukyu Scops-owl <i>Otus elegans</i> 4 subspecies <i>O.e. elegans</i> , <i>O.e. interpositus</i> , <i>O.e. botelensis</i> , <i>O.e. calayensis</i>	<i>O.e. elegans</i> - Throughout Ryukyu Is (Nansei Shotō), S Japan. <i>O.e. interpositus</i> - Daito Is (Minami-daitō-jima). <i>O.e. botelensis</i> - Lanyu I, off SE Taiwan. <i>O.e. calayensis</i> - Batan Is, Sabtang and Calayan, off N Philippines.	NGT. CITES II. Restricted-range species.	Not recommended
Sulawesi Scops-owl <i>Otus manadensis</i> 5 subspecies <i>O.m. siaoensis</i> , <i>O.m. manadensis</i> , <i>O.m. mendeni</i> , <i>O.m. sulaensis</i> , <i>O.m. kalidupae</i>	<i>O.m. siaoensis</i> - Siau I, N of Sulawesi. <i>O.m. manadensis</i> - Sulawesi. <i>O.m. mendeni</i> - Banggai Is (Peleng, perhaps also Labobo). <i>O.m. sulaensis</i> - Sula Is (Taliabu, Seho, Mangole, Sanana). <i>O.m. kalidupae</i> - Tukangbesi Is (Kaledupa).	NGT. CITES II. Two recent searches for <i>siaoensis</i> , known only from the type specimen, unsuccessful, and forest on Siau almost gone; no data on other populations, but all are poorly known and unlikely to be common. Main threat probably forest destruction.	Not recommended
Sangihe Scops-owl <i>Otus collari</i>	Sangihe I, N of Sulawesi.	NGT. CITES II.	Not recommended
Biak Scops-owl <i>Otus beccarii</i>	Biak I, off NW New Guinea (Irian Jaya).	NGT. CITES II. Very poorly known..	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Western Screech Owl <i>Otus kennicottii</i> <i>O.k.kennicotti</i> , <i>O.k.bendirei</i> , <i>O.k.aikeni</i> , <i>O.k.cardonensis</i> , <i>O.k.xantusi</i> , <i>O.k.yumanensis</i> , <i>O.k.suttoni</i> , <i>O.k.vinaceus</i>	Coast from SE Alaska & NW Canada. SW USA, Baja California, Mexico	NGT. CITES II Fairly common to locally common.	DERP
Balsas Screech-owl <i>Otus seductus</i>	SW Mexico, from S Jalisco and Colima to W Guerrero.	NGT. CITES II. Described as fairly common to common, but little information available on status and ecology. Available habitat appears to be decreasing. Currently being considered as candidate for inclusion in Red Data Book.	Not recommended
Pacific Screech-owl <i>Otus cooperi</i> 3 subspecies	<i>O.c. lambi</i> - S Mexico (Pacific slope of Oaxaca). <i>O.c. chiapensis</i> - SE Mexico (Chiapas). <i>O.c. cooperi</i> - Extreme SE Mexico (S Chiapas) to NW Costa	NGT. CITES II. Considered fairly common to common in most of range, but no information on population size.	Not recommended



<i>O.c. lambi</i> , <i>O.c. chiapensis</i> , <i>O.c. cooperi</i>	Rica (Guanacaste).		
Eastern Screech-owl <i>Otus asio</i> 6 subspecies <i>O.a. maxwelliae</i> , <i>O.a. naevius</i> , <i>O.a. asio</i> , <i>O.a. hasbroucki</i> , <i>O.a. floridanus</i> , <i>O.a. mcallii</i>	<i>O.a. maxwelliae</i> - SC Canada and NC USA. <i>O.a. naevius</i> - SE Canada and NE USA (S to North Carolina). <i>O.a. asio</i> - Oklahoma E to South Carolina and Georgia. <i>O.a. hasbroucki</i> - C Oklahoma to Texas. <i>O.a. floridanus</i> - Louisiana to Florida. <i>O.a. mcallii</i> - S Texas to NE Mexico.	NGT. CITES II.	DERP
Whiskered Screech-owl <i>Otus trichopsis</i> 3 subspecies <i>O.t. aspersus</i> , <i>O.t. trichopsis</i> , <i>O.t. mesamericanus</i>	<i>O.t. aspersus</i> - SE Arizona to N Mexico (Sonora and Chihuahua). <i>O.t. trichopsis</i> - Highlands of C Mexico (from about Durango S to Veracruz, Oaxaca and Chiapas). <i>O.t. mesamericanus</i> - SE Mexico (Chiapas) to NC Nicaragua.	NGT. CITES II. Population or trends little known, but clearly dependent on the future of fairly dense montane forest within its range.	Not recommended
Tropical Screech-owl <i>Otus choliba</i> 9 subspecies <i>O.c. luctisomus</i> , <i>O.c. margaritae</i> , <i>O.c. duidae</i> , <i>O.c. crucigerus</i> , <i>O.c. suturutus</i> , <i>O.c. decussatus</i> , <i>O.c. choliba</i> , <i>O.c. wetmorei</i> , <i>O.c. uruguayensis</i>	<i>O.c. luctisomus</i> - Costa Rica to NW Colombia, including Pearl Is. <i>O.c. margaritae</i> - Margarita I, off N Venezuela. <i>O.c. duidae</i> - Duida Mts in S Venezuela. <i>O.c. crucigerus</i> - E Colombia and E Peru across to Venezuela, Trinidad, the Guianas and NE Brazil. <i>O.c. suturutus</i> - Bolivia. <i>O.c. decussatus</i> - C & E Brazil. <i>O.c. choliba</i> - S Brazil (S Mato Grosso, São Paulo) to E Paraguay. <i>O.c. wetmorei</i> - W Paraguay and N Argentina (S to Mendoza, N Buenos Aires and N Río Negro). <i>O.c. uruguayensis</i> - NE Argentina, SE Brazil (Santa Catarina, Rio Grande do Sul) and Uruguay.	NGT. CITES II. Widely distributed and rather common. Little is known, however, about its population levels and ecology.	Not recommended
Koepcke's Screech-owl <i>Otus koepckeae</i>	NW Peru (probably from around Amazonas, and Ancash S to Lima, possibly farther S, to Ayacucho or beyond); apparently also WC Bolivia (to La Paz). Distributional limits very imperfectly known.	NGT. CITES II. Very poorly known; no information on numerical status, ecology or biology. Warrants classification as Data-deficient.	Not recommended
<b>Common Name</b> <b>Scientific Name</b>	<b>Range</b>	<b>Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u>)</b>	<b>TAG Recommendation</b>
Peruvian Screech-owl <i>Otus roboratus</i> 2 subspecies <i>O.r. pacificus</i> , <i>O.r. roboratus</i>	<i>O.r. pacificus</i> - SW Ecuador and extreme NW Peru (S to Lambayeque).  <i>O.r. roboratus</i> - Extreme S Ecuador and NW Peru between W & C Andes (drainage of R Chinchipe and R Marañón).	NGT. CITES II. Can be very common locally, but overall rare and possibly vulnerable; both N and S limits of distribution, however, uncertain.	Not recommended
Bare-shanked Screech-owl <i>Otus clarkii</i>	Costa Rica S to extreme NW Colombia.	NGT. CITES II. Restricted-range species. Considered uncommon; little known about population level.	Not recommended
Bearded Screech-owl <i>Otus barbarus</i>	Highlands of S Mexico (Chiapas) and N Guatemala.	NGT. CITES II. Restricted-range species; present in North Central American Highlands EBA. Currently considered Near-threatened. Considered fairly common but very local. Population level unknown, but possibly decreasing	Not recommended

Rufescent Screech-owl <i>Otus ingens</i> 2 subspecies <i>O.i. venezuelanus</i> , <i>O.i. ingens</i>	<i>O.i. venezuelanus</i> - N Colombia and NW Venezuela. <i>O.i. ingens</i> - Andes from NE Ecuador to WC Bolivia.	NGT. CITES II. Status is uncertain, and species little known; may be rare, unless overlooked.	Not recommended
Columbian Screech-owl <i>Otus columbianus</i>	W slopes of Andes from WC Colombia to NW Ecuador.	NGT. CITES II. Restricted-range species. Currently considered Near-threatened. Status uncertain, and species little known; may be rare. Forest destruction probably a threat, at least locally.	Not recommended
Cinnamon Screech-owl <i>Otus petersoni</i>	Cordillera del Cutucú in SE Ecuador S to La Peca region in NW Peru.	NGT. CITES II. Restricted-range species. Very poorly known, and no information on numbers; described as probably rare. Destruction of forest habitat probably a long-term threat.	Not recommended
Cloudforest Screech-owl <i>Otus marshalli</i>	C & S Peru in Pasco (Cordillera Yanachaga) and Cuzco (Cordillera Vilcabamba).	NGT. CITES II. Restricted-range species: present in Peruvian East Andean Foothills EBA. Poorly known.	Not recommended
Tawn-bellied Screech-owl <i>Otus watsonii</i> 2 subspecies <i>O.w. watsonii</i> , <i>O.w. usta</i>	<i>O.w. watsonii</i> - Lowlands from E Colombia S to NE Peru and E (N of R Amazon) to Surinam and Amazonian Brazil. <i>O.w. usta</i> - e Peru and S Amazonian Brazil S to lowland forest of N Bolivia and N Mato Grosso.	NGT. CITES II. Status uncertain, and species poorly known..	Not recommended
Guatemalan Screech-owl <i>Otus guatemalae</i> 7 subspecies <i>O.g. tomlini</i> , <i>O.g. hastatus</i> , <i>O.g. cassini</i> , <i>O.g. fuscus</i> , <i>O.g. thompsoni</i> , <i>O.g. guatemalae</i> , <i>O.g. dacrysiactus</i>	<i>O.g. tomlini</i> - NW Mexico (S Sonora and SW Chihuahua S to Sinaloa). <i>O.g. hastatus</i> - SW Sinaloa to Oaxaca. <i>O.g. cassini</i> - E Mexico (S Tamaulipas and N Veracruz). <i>O.g. fuscus</i> - Veracruz. <i>O.g. thompsoni</i> - Yucatán Peninsula and Cozumel I. <i>O.g. guatemalae</i> - SE Mexico (S Veracruz and NE Oaxaca) to Honduras. <i>O.g. dacrysiactus</i> - N Nicaragua.	NGT. CITES II. Little information available; appears to be not rare locally. Populations have probably declined as a result of forest destruction. Habitat loss a threat, at least in long term.	Not recommended
Vermiculated Screech-owl <i>Otus vermiculatus</i> 3 subspecies <i>O.v. vermiculatus</i> , <i>O.v. roraimae</i> , <i>O.v. napensis</i>	<i>O.v. vermiculatus</i> - NE Costa Rica to NW Colombia, N Venezuela. <i>O.v. roraimae</i> - S Venezuela and N Brazil (mountain regions of Roraima, Duida and Neblina). <i>O.v. napensis</i> - E Ecuador to Peru, and N Bolivia.	NGT. CITES II. Needs almost solid forest. Very little information; possibly not rare locally. Forest destruction a threat, at least in long term.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Hoy's Screech-owl <i>Otus hoyi</i>	Mountains of S Bolivia (S from Cochabamba) and NW Argentina (S to Tucumán, possibly to Catamarca).	NGT. CITES II. .	Not recommended
Long-tufted Screech-owl <i>Otus sanctaecatarinae</i>	SE Brazil (Paraná, Santa Catarina, Rio Grande do Sul), NE Argentina (Misiones) and Uruguay.	NGT. CITES II. Generally overlooked, especially as a result of confusion with <i>O. atricapillus</i> . Loss of habitat through overgrazing, burning and tree-felling represents greatest threat to species.	Not recommended
Variable Screech-owl <i>Otus atricapillus</i>	SE Brazil (S Bahia and Goiás S to Santa Catarina), SE Paraguay and extreme NE Argentina (N Misiones).	NGT. CITES II. Species should be monitored because of the scale of habitat loss in its range; it seems to require fairly large areas of forest, and may not be able to survive in small remnant forest reserves.	Not recommended
Puerto Rican Screech-owl <i>Otus nudipes</i> 2 subspecies <i>O.n. nudipes</i> , <i>O.n. newtoni</i>	<i>O.n. nudipes</i> - Puerto Rico. <i>O.n. newtoni</i> - Vieques I off E Puerto Rico (1 record, probably extinct), and unconfirmed report from nearby Culebra I; also Virgin Is (St Thomas, St John, Tortola, Virgin Gorda, St Croix, probably Guana I).	NTG. CITES II. Restricted-range species: present in Puerto Rico and the Virgin Islands EBA. Race <i>newtoni</i> extremely rare, possibly extinct.	Not recommended
White-throated Screech-owl	<i>O.a. obscurus</i> - Sierra de Perijá, in NW Venezuela.	NGT. CITES II. Poorly known, but perhaps often overlooked ;	Not recommended

<i>Otus albogularis</i> 6 subspecies <i>O.a. obscurus, O.a. meridensis,</i> <i>O.a. macabrum, O.a. albogularis,</i> <i>O.a. aequatorialis, O.a. remotus</i>	<i>O.a. meridensis</i> - Andes of W Venezuela. <i>O.a. macabrum</i> - C & W Andes from Colombia and Ecuador S to N Peru. <i>O.a. albogularis</i> - E Andes of Colombia and N Ecuador. <i>O.a. aequatorialis</i> - E Ecuador. <i>O.a. remotus</i> - E Andes from Peru S to C Bolivia (Cochabamba).	probably common. Conservation priority considered low to medium.	
Palau Owl <i>Pyrroglaux podarginus</i>	Palau Is (Babelthuap, Koror, Peleliu and Angaur).	NGT. CITES II. Restricted-range species: present in Palau EBA. Current status uncertain.	Not recommended
Cuban Screech-owl <i>Gymnoglaux lawrencii</i> 2 subspecies <i>G.l. exsul, G.l. lawrencii</i>	<i>G.l. exsul</i> - W Cuba and I of Pines. <i>G.l. lawrencii</i> - C & E Cuba.	NGT. CITES II. Considered fairly common or common. Not well known, however, and more information needed on species' ecology and exact status.	Not recommended
Northern White-faced Owl <i>Ptilopsis leucotis</i>	Senegambia E to Somalia, S to N Zaire, N Uganda and C Kenya.	NGT. CITES II. * Genus merged with Otus	DERP
Southern White-faced Owl <i>Ptilopsis granti</i>	SE Gabon, C Congo, S Zaire, S Uganda and SW Kenya, S to S Namibia, N Cape Province and Natal.	NGT. CITES II. * Genus merged with Otus and species split	DERP
Giant Scops-owl <i>Mimizuku gurneyi</i>	S Philippines: Dinagat, Siargao and Mindanao; report of former presence on Marinduque not confirmed.	Endangered. CITES I. Restricted-range species: present in Mindanao and Eastern Visayas EBA. Appears to be rare in most of range, and thought to be a species that occurs at naturally low densities. Rapidly declining as a result of habitat destruction.	Not recommended

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Great Horned Owl <i>Bubo virginianus</i> 12 subspecies <i>B.b. lagophonus, B.v. saturatus,</i> <i>B.v. pacificus, B.v. elachistus,</i> <i>B.v. subarcticus, B.v. pallescens,</i> <i>B.v. heterocnemis, B.v. virginianus,</i> <i>B.v. mayensis, B.v. mesembrinus,</i> <i>B.v. nigrescens, B.v. nacurutu</i>	North, Central and South America	NGT. CITES II. Widespread, but densities low; few population estimates. Population levels closely associated with prey availability:	DERP
Magellanic Horned Owl <i>Bubo magellanicus</i>	From C Peru, W Bolivia and W Argentina, S to Tierra del Fuego and Cape Horn.	NGT. CITES II.	Not recommended
Eurasian Eagle-owl <i>Bubo bubo</i> 14 subspecies <i>B.b. hispanus, B.b. bubo, B.b. ruthenus,</i> <i>B.b. interpositus, B.b. sibiricus,</i> <i>B.b. yenisseeensis, B.b. turcomanus,</i> <i>B.b. omissus, B.b. hemachalana,</i> <i>B.b. nikolskii, B.b. jakutensis,</i> <i>B.b. ussuriensis, B.b. kiautschensis,</i> <i>B.b. swinhoei</i>	<i>B.b. hispanus</i> - Iberian Peninsula; formerly also Atlas Mts in NW Africa (probably extinct). <i>B.b. bubo</i> - Europe from N Spain and Scandinavia E to W Russia (E to about Gor'kiy). <i>B.b. ruthenus</i> - C European Russia E to foothills of Rual Mts, S to lower Volga basin. <i>B.b. interpositus</i> - From Romania and S Ukraine E to Volga delta, S to Middle East (S to C Israel and Jordan) and NW Iran. <i>B.b. sibiricus</i> - From W foothills of Urals E to R Ob, S to W Altai. <i>B.b. yenisseeensis</i> - C Siberia from R Ob to L Baikal, S to Altai and N Mongolia.	NGT. CITES II. Uncommon to scarce or rare throughout range.	PMP

<p><b><i>B.b. turcomanus</i></b> - Steppes between lower R Volga and R Ural, E to Transbaikalia, and S to Kazakhstan, extreme NW China (Tarim Basin in NW Xinjiang) and W Mongolia.</p> <p><b><i>B.b. omissus</i></b> - Turkmeniya to W China (Chinese Turkestan).</p> <p><b><i>B.b. hemachalana</i></b> - From Pamirs and N Tien Shan S to Himalayas.</p> <p><b><i>B.b. nikolskii</i></b> - E Iraq and Iran, Afghanistan, and N &amp; W Pakistan.</p> <p><b><i>B.b. jakutensis</i></b> - NE Siberia.</p> <p><b><i>B.b. ussuriensis</i></b> - SE Siberia to NE China, Sakhalin, N Hokkaido and S Kuril Is.</p> <p><b><i>B.b. kiautschensis</i></b> - From W &amp; C China (S to Yunnan and Sichuan) E to Korea.</p> <p><b><i>B.b. swinhoei</i></b> - SE China.</p>		
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Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Rock Eagle-owl <i>Bubo bengalensis</i>	Indian Subcontinent (except Sri Lanka), N to foothills of Himalayas, and W Myanmar.	NGT. CITES II. No details on population levels; generally uncommon, but perhaps more common locally in N and C India. Further studies needed on ecology and biology.	Not recommended
Pharaoh Eagle-owl <i>Bubo ascalaphus</i> 2 subspecies <i>B.a. ascalaphus</i> , <i>B.a. desertorum</i>	<i>B.a. ascalaphus</i> - NW Africa and N Egypt E to W Iraq. <i>B.a. desertorum</i> - Sahara S to Mauretania and Niger, E to Ethiopia, Arabia and S Iraq.	NGT. CITES II. Little information on population levels, but probably not uncommon in most of range.	Not recommended
Cape Eagle-owl <i>Bubo capensis</i> 3 subspecies <i>B.c. dillonii</i> , <i>B.c. mackinderi</i> , <i>B.c. capensis</i>	<i>B.c. dillonii</i> - S Eritrea and Ethiopian Highlands. <i>B.c. mackinderi</i> - From WC Kenya S to Zimbabwe and W Mozambique. <i>B.c. capensis</i> - South Africa and extreme S Namibia.	NGT. CITES II. Generally uncommon to rare, and very local; more common in some places, e.g. Mau Plateau in SW Kenya	Not recommended
Spotted Eagle-owl <i>Bubo africanus</i> 3 subspecies <i>B.a. milesi</i> , <i>B.a. africanus</i> , <i>B.a. tanae</i>	<i>B.a. milesi</i> - SW Arabia, Yemen and Oman. <i>B.a. africanus</i> - Gabon E to Zaire (S of rainforest), S Uganda and C Kenya, S to the Cape. <i>B.a. tanae</i> - R Tana and Lali Hills, in SE Kenya.	NGT. CITES II. Few data on densities.	Not recommended
Greyish Eagle-owl <i>Bubo cinerascens</i>	Senegambia E to Ethiopia and Somalia, S to Cameroon, N Uganda and N Kenya.	NGT. CITES II. Generally rather uncommon through most of range.	Not recommended
Fraser's Eagle-owl <i>Bubo poensis</i>	Liberia E to W Uganda, S through Congo basin to C Zaire and NW Angola; also Bioko (Fernanco P6o).	NGT. CITES II. Biology relatively unknown, and breeding undocumented.	Not recommended
Usambara Eagle-owl <i>Bubo vosseleri</i>	Usambara Mts of NE Tanzania; recently discovered in Uluguru Mts; also possible sighting in Nguru Mts.	Vulnerable. CITES II. Restricted-range species: present in Tanzania-Malawi Mountains EBA.	Not recommended
Forest Eagle-owl <i>Bubo nipalensis</i> 2 subspecies <i>B.m. nipalensis</i> , <i>B.n. blighi</i>	<i>B.n. nipalensis</i> - Himalayas from N Uttar Pradesh E to SW China (Yunnan), S to Cambodia and Vietnam; also S India in Western Ghats and Tamil Nadu. <i>B.n. blighi</i> - Sri Lanka.	NGT. CITES II. Currently considered Near-threatened. Rare and local in Indian Subcontinent, including Sri Lanka; at best uncommon in Thailand; rare to very rare in other parts of range; in Myanmar, reported to be well distributed but much overlooked.	Not recommended
Barred Eagle-owl <i>Bubo sumatranus</i> 2 subspecies <i>B.s. sumatranus</i> , <i>B.s. strepitans</i>	<i>B.s. sumatranus</i> - Extreme S Myanmar and peninsular Thailand S to Sumatra, including Bangka I. <i>B.s. strepitans</i> - Borneo, Java and Bali.	NGT. CITES II. Little information available. Ability to adapt to disturbed forest and to accept second-growth habitats suggested that species is not in any immediate danger.	Not recommended
Shelley's Eagle-owl <i>Bubo shelleyi</i>	Sierra Leone and Liberia E to Ghana, and S Cameroon and N Gabon E to N Zaire.	NGT. CITES II. Rare and very local throughout its range.	Not recommended
Verreaux's Eagle-owl (Milky Eagle Owl) <i>Bubo lacteus</i>	Tropical W Africa patchily from Senegal and C Mali E to Cameroon, and from C Sudan, N Ethiopia and Somalia S to South Africa.	NGT. CITES II.	DERP
Dusky Eagle-owl <i>Bubo coromandus</i> 2 subspecies <i>B.c. coromandus</i> , <i>B.c. klossi</i>	<i>B.c. coromandus</i> - Pakistan, N & C India and S Nepal E to Assam and Bangladesh; apparently this race also in E China. <i>B.c. klossi</i> - W & S Myanmar, W Thailand.	NGT. CITES II.	Not recommended
Akun Eagle-owl <i>Bubo leucostictus</i>	Patchily from Sierra Leone and Liberia E to Nigeria and Cameroon, S to mouth of R Congo, Cabinda and probably NW Angola, and across N Zaire.	NGT. CITES II. Patchy distribution with restricted pattern of occurrence; usually considered uncommon. . More study needed to assess its status, and any possible impacts of logging.	Not recommended

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Philippine Eagle-owl <i>Bubo philippensis</i> 2 subspecies <i>B.p. philippensis</i> , <i>B.p. mindanensis</i>	<i>B.p. philippensis</i> - Luzon and Catanduanes. <i>B.p. mindanensis</i> - Samar, Leyte and Mindanao; recently recorded on Bohol.	Endangered. CITES II. Rare; Rapid population decline due to extensive lowland habitat destruction, and possibly hunting.	Not recommended
Blakiston's Eagle-owl <i>Bubo blakistoni</i> 4 subspecies <i>B.b. piscivorus</i> , <i>B.b. doerriesi</i> , <i>B.b. karafutonis</i> , <i>B.b. blakistoni</i>	<i>B.b. piscivorus</i> - W Manchuria (W of Great Khingan Mts). <i>B.b. doerriesi</i> - SE Siberia and extreme NE China, to Korean border. <i>B.b. karafutonis</i> - Sakhalin I. <i>B.b. blakistoni</i> - Hokkaido and S Kuril Is.	Endangered. CITES II. One of world's rarest owls. Numbers in Russia, including Sakhalin and S Kuril Is, estimated at 300-400 pairs in 1984.	Not recommended
Brown Fish-owl <i>Ketupa zeylonensis</i> 4 subspecies <i>K.z. semenowi</i> , <i>K.z. leschenault</i> , <i>K.z. zeylonensis</i> , <i>K.z. orientalis</i>	<i>K.z. semenowi</i> - S Turkey, Israel (probably extinct) and N Syria to NW India. <i>K.z. leschenault</i> - India (S of Himalayas) E to Myanmar (except NE) and Thailand. <i>K.z. zeylonensis</i> - Sri Lanka. <i>K.z. orientalis</i> - NE Myanmar to SE China (Guangxi, Guangdong), S to Malay Peninsula, Indochina and Hainan I.	NGT. CITES II. Generally uncommon. Rare in W of range: in Middle East, either extinct or on the verge, with last confirmed sighting in mid 1970's, and none located in surveys in mid 1980's	Not recommended
Tawny Fish-owl <i>Ketupa flavipes</i>	Himalays from NW India, Nepal and Bhutan to NE India, E to C China and Taiwan, and S to N Bangladesh, NE Myanmar and S Indochina.	NGT. CITES II. Currently considered Near-threatened. In W, very rare and local to uncommon.	Not recommended
Buffy Fish-owl <i>Ketupa ketupu</i> 4 subspecies <i>K.k. aagaardi</i> , <i>K.k. ketupu</i> , <i>K.k. minor</i> , <i>K.k. pageli</i>	<i>K.k. aagaardi</i> - S Assam to S Thailand and Vietnam. <i>K.k. ketupu</i> - Malay Peninsula, Riau Archipelago, Sumatra, Bangka, Belitung, Java, Bali, and Borneo (except NW). <i>K.k. minor</i> - Nias I, off W Sumatra. <i>K.k. pageli</i> - NW Borneo.	NGT. CITES II. Status poorly known; uncommon in Thailand; locally uncommon to more or less common in Malay Peninsula and SE Asia; common in Borneo.	Not recommended
Snowy Owl <i>Nyctea scandiaca</i>	Breeds from W & N Scandinavia E across N Russia and N Siberia, including Novaya Zemlya, to Chukotski Peninsula, Anadyrland, N Koryakland and Commander Is; then North America in W Aleutians (Attu and Buldir), Hall I in Bering Sea, and from W Alaska E through N Canada to N Labrador, including Banks, Prince Patrick and N Ellesmere Is; also N Greenland. Has bred occasionally in Iceland and N Britain (Shetland Is).	NGT. CITES II. Generally uncommon to scarce. In North America, overall status presumed little changed	PMP
Pel's Fishing-owl <i>Scotopelia peli</i>	Locally from Senegambia E to Benin, and from Nigeria S across Congo Basin and C Africa to Botswana, Mozambique and NE South Africa; also SE Sudan, Ethiopia, S Somalia, Kenya and Tanzania; status in S Mali, Burkina Faso and S Niger unclear.	NGT. CITES II	Not recommended
Rufous Fishing-owl <i>Scotopelia ussheri</i>	Sierra Leone, Liberia, Ivory Coast and Ghana; possibly also Guinea.	Endangered. CITES II. Restricted-range species: present in Upper Guinea Forests EBA. Population unknown.	Not recommended
Vermiculated Fishing-owl <i>Scotopelia bouvieri</i>	Congo Basin in S Cameroon, Gabon, Central African Republic, Congo, Zaire, and extreme NW Angola; possibly SE Nigeria.	NGT. CITES II. Little is known about its biology	Not recommended

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Spotted Wood-owl	<i>S.s. seloputo</i> - S Myanmar and C Thailand S to Sumatra	NGT. CITES II. Reports vary. Possibly overlooked as a result of	Not recommended

<p><i>Strix seloputo</i> 3 subspecies <i>S.s. seloputo</i>, <i>S.s. baweana</i>, <i>S.s. wiepkeni</i></p>	<p>(Jambi) and Java. <i>S.s. baweana</i> - Bawean I, off N Java. <i>S.s. wiepkeni</i> - Calamian Is and Palawan, in W Philippines.</p>	<p>its rather secretive habits, although species seems to occur at naturally low densities.</p>	
<p>Mottled Wood-owl <i>Strix ocellata</i> 3 subspecies <i>S.o. griseescens</i>, <i>S.o. grandis</i>, <i>S.o. ocellata</i></p>	<p><i>S.o. griseescens</i> - From base of Himalayas in Pakistan S to about Rajasthan, and E to Bihar. <i>S.o. grandis</i> - S Gujarat (Saurashtra Peninsula). <i>S.o. ocellata</i> - Peninsular India. Apparently resident also in W Myanmar, but race undetermined.</p>	<p>NGT. CITES II. Uncommon in India; no recent records from Pakistan, were extremely rare or possibly even extinct. Status in Myanmar uncertain; said to have been common in SW (Arakan) before 1950's, but no information since then.</p>	Not recommended
<p>Brown Wood-owl <i>Strix leptogrammica</i> 14 subspecies <i>S.l. newarensis</i>, <i>S.l. ticehursti</i>, <i>S.l. caligata</i>, <i>S.l. laotiana</i>, <i>S.l. indraneae</i>, <i>S.l. ochrogenys</i>, <i>S.l. maingayi</i>, <i>S.l. myrtha</i>, <i>S.l. nyctiphasma</i>, <i>S.l. niasensis</i>, <i>S.l. chaseni</i>, <i>S.l. vaga</i>, <i>S.l. leptogrammica</i>, <i>S.l. bartelsi</i></p>	<p>Malaysia</p>	<p>NGT. CITES II. Uncommon throughout most of range in Indian Subcontinent, and rare and local in Bangladesh; rare in Java, where ongoing clearance of mountain forest represents a major threat; in rest of range appears to be uncommon to rare, and again suffering from forest destruction.</p>	Not recommended
<p>Tawny Owl <i>Strix aluco</i> 11 subspecies <i>S.a. aluco</i>, <i>S.a. siberiae</i>, <i>S.a. sylvatica</i>, <i>S.a. mauritanica</i>, <i>S.a. willkenskii</i>, <i>S.a. sanctinicolai</i>, <i>S.a. harmsi</i>, <i>S.a. biddulphi</i>, <i>S.a. nivicola</i>, <i>S.a. ma</i>, <i>S.a. yamadae</i></p>	<p><i>S.a. aluco</i> - N &amp; E Europe E to W Russia (Ural Mts), S to Alps, Balkans and Black Sea; intergrades with. <i>S.a. siberiae</i> - From Ural Mts to W Siberia. <i>S.a. sylvatica</i> - Britain, France and Iberia; probably this race also from S Italy and Greece E to W &amp; C Turkey and Middle East; intergrades with <i>sanctinicolai</i>. <i>S.a. mauritanica</i> - NW Africa (Morocco to Tunisia). <i>S.a. willkenskii</i> - NE Turkey, Caucasus and NW Iran, E to Turkmeniya. <i>S.a. sanctinicolai</i> - NE Iraq and W Iran. <i>S.a. harmsi</i> - Turkestan. <i>S.a. biddulphi</i> - Pakistan and NW India. <i>S.a. nivicola</i> - Nepal E to SE China, S to N Myanmar and N Indochina. <i>S.a. ma</i> - NE China (Jilin) and Korea. <i>S.a. yamadae</i> - Taiwan.</p>	<p>NGT. CITES II. Thought rather uncommon in China.</p>	DERP

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<p>Hume's Owl <i>Strix butleri</i></p>	<p>E &amp; S Israel, Jordan, Sinai Peninsula and E Egypt (Red Sea mountains), and patchily in Arabian Peninsula (Saudi Arabia, Yemen and Oman); possibly still S Pakistan (Makran Coast), perhaps also S Iran.</p>	<p>NGT. CITES II.</p>	Not recommended
<p>Spotted Owl <i>Strix occidentalis</i> 3 subspecies <i>S.o. caurina</i>, <i>S.o. occidentalis</i>,</p>	<p>North America and Mexico.</p>	<p>NGT. CITES II. Currently considered Near-threatened. Races <i>caurina</i> and <i>lucida</i> listed as threatened under US Endangered Species Act, <i>caurina</i> as endangered in Canada, <i>lucida</i> as threatened in Mexico; <i>occidentalis</i> listed as species of special</p>	DERP

<i>S.o. lucida</i>		concern by state of California.	
Barred Owl <i>Strix varia</i> 4 subspecies <i>S.v. varia</i> , <i>S.v. helveola</i> , <i>S.v. georgica</i> , <i>S.v. sartorii</i>	North America and Mexico	NGT. CITES II. Status uncertain. Dependent on forest, requires at least some old-growth trees for nesting; has probably suffered in E & SE parts of range, where large stands of mature forests have been lumbered.	DERP
Fulvous Owl <i>Strix fulvescens</i>	S Mexico (E Oaxaca and Chiapas), Guatemala, Honduras and El Salvador.	NGT. CITES II. Restricted-range species: present in North Central American Highlands EBA. Little available information on species' ecology, but deforestation likely to have detrimental and possibly severe effect on its population size.	Not recommended
Rusty-barred Owl <i>Strix hylophila</i>	E & S Paraguay, SE Brazil (from Minas Gerais to Rio Grande do Sul) and extreme NE Argentina (Misiones).	NGT. CITES II. Generally rare; locally fairly common, e.g. in NE Argentina (Misiones). Major threat appears to be habitat loss, mainly through logging and burning of forest. Because of the scale of such habitat loss in all parts of its range, species should be carefully monitored.	Not recommended
Rufous-legged Owl <i>Strix rufipes</i> 2 subspecies <i>S.r. rufipes</i> , <i>S.r. sanborni</i>	<i>S.r. rufipes</i> - From Chile and extreme WC Argentina S to Tierra del Fuego.  <i>S.r. sanborni</i> - Chiloe I, off SC Chile.	NGT. CITES II. Status uncertain, owing to rather elusive habits.	Not recommended
Chaco Owl <i>Strix chacoensis</i>	Chaco of S Bolivia (Santa Cruz), W Paraguay and N Argentina (S to Córdoba, San Luis and N La Pampa).	NGT. CITES II. No information on population size	Not recommended
Ural Owl <i>Strix uralensis</i> 8 subspecies <i>S.u. liturata</i> , <i>S.u. uralensis</i> , <i>S.u. macroura</i> , <i>S.u. yenisseeensis</i> , <i>S.u. nikolskii</i> , <i>S.u. japonica</i> , <i>S.u. hondoensis</i> , <i>S.u. fuscescens</i>	<i>S.u. liturata</i> - N Europe and NW Russia (E to about Arkhangel'sk region), S to N Poland, Belarus and middle R Volga. <i>S.u. uralensis</i> - From E European Russia E to Okhotsk coast. <i>S.u. macroura</i> - C & SE Europe (from Carpathian Mts S to Bulgaria, and in W Balkans). <i>S.u. yenisseeensis</i> - C Siberian plateau. <i>S.u. nikolskii</i> - Transbaikalia E to Sakhalin, S to NE China and Korea. <i>S.u. japonica</i> - Hokkaido.  <i>S.u. hondoensis</i> - N & C Honshu. <i>S.u. fuscescens</i> - S Honshu S to Kyushu.	NGT. CITES II.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Sichuan Wood-owl <i>Strix davidi</i>	C China: SE Qinghai and W & C Sichuan.	Vulnerable. CITES II. Restricted-range species: present in West Sichuan Mountains EBA. Apparently rare, but no quantitative data on population. Occurs in Jiuzhaigou Reserve, Sichuan. Threatened by extensive deforestation occurring within its range. Further research urgently required.	Not recommended
Great Grey Owl <i>Strix nebulosa</i> 2 subspecies <i>S.n. nebulosa</i> , <i>S.n. lapponica</i>	<i>S.n. nebulosa</i> - North America, from C Alaska E to SW Quebec, S to EC California, N Idaho and NE Minnesota. <i>S.n. lapponica</i> - Eurasia, from Fenno-Scandia E to W Koryakland, S to Lithuania, N Mongolia, NE China and N Sakhalin.	NGT. CITES II. Populations fluctuate widely, but generally scarce, with food supply likely critical factor regulating numbers.	DERP



African Wood-owl <i>Strix woodfordii</i> 4 subspecies <i>S.w. nuchalis</i> , <i>S.w. umbrina</i> , <i>S.w. nigricantior</i> , <i>S.w. woodfordii</i>	<i>S.W. nuchalis</i> - Senegambia E to S Sudan and Uganda, S to N Angola and Zaire (except S & E), including Bioko I. <i>S.w. umbrina</i> - Ethiopia and SE Sudan. <i>S.w. nigricantior</i> - S Somalia, Kenya, Tanzania, Zanzibar and E Zaire. <i>S.w. woodfordii</i> - S Angola and S Zaire E to SW Tanzania, S to N Botswana and the Cape.	NGT. CITES II	Not recommended
Mottled Owl <i>Strix virgata</i> 7 subspecies <i>S.v. squamulata</i> , <i>S.v. tamaulipensis</i> , <i>S.v. centralis</i> , <i>S.v. virgata</i> , <i>S.v. macconnelli</i> , <i>S.v. superciliaris</i> , <i>S.v. borelliana</i>	Mexico, Central and South America	NGT. CITES II. Rather widespread, and considered fairly common to common in some places.	Phase-out
Black-and-white Owl <i>Strix nigrolineata</i>	C Mexico to NW Venezuela, W Colombia and W Ecuador and extreme NW Peru.	NGT. CITES II. Forest clearance a likely threat; extensive use of pesticides may also affect it.	Not recommended
Black-banded Owl <i>Strix huhula</i> 2 subspecies <i>S.h. huhula</i> , <i>S.h. albomarginata</i>	<i>S.h. huhula</i> - E Colombia, S Venezuela and the Guianas to NE Brazil, S to E Peru, NW Argentina, N Paraguay and E Brazil. <i>S.h. albomarginata</i> - SE Brazil, E Paraguay and NE Argentina (Misiones).	NGT. CITES II. Appears to be scarce throughout entire range	Not recommended
Rufous-banded Owl <i>Strix albitarsis</i>	Andes from N Venezuela S to W & C Bolivia.	NGT. CITES II. Status uncertain; locally fairly common, but few reliable data. Probably adversely affected by cutting of forest habitat.	Not recommended
Maned Owl <i>Jubula lettii</i>	Liberia, Ivory Coast and Ghana; and patchily from S Cameroon and Ngabon to E Zaire.	NGT. CITES II. Very poorly known; status difficult to assess owing to species' secretive and nocturnal habits, and because of scant information on its biology.	Not recommended
Crested Owl <i>Lophotrix cristata</i> 3 subspecies <i>L.c. stricklandi</i> , <i>L.c. wedeli</i> , <i>L.c. cristata</i>	<i>L.c. stricklandi</i> - S Mexico to W Panama and W Colombia. <i>L.c. wedeli</i> - E Panama to NE Colombia and NW Venezuela ; possibly also N Venezuela (1 specimen from Aragua). <i>L.c. cristata</i> - S Venezuela and the Guianas to N Brazil (W Pará), S through Amazonia to N Bolivia and N Mato Grosso, then W to SW Colombia, E Ecuador and E Peru.	NGT. CITES II. Very poorly known	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Spectacled Owl <i>Pulsatrix perspicillata</i> 6 subspecies <i>P.p. saturata</i> , <i>P.p. chapmani</i> , <i>P.p. trinitatis</i> , <i>P.p. perspicillata</i> , <i>P.p. boliviana</i> , <i>P.p. pulsatrix</i>	Mexico, Costa Rica and South America	NGT. CITES II.	PMP
Tawny-browed Owl <i>Pulsatrix koeniswaldiana</i>	E Paraguay, extreme NE Argentina (Misiones), and S Brazil (from Espírito Santo S to Santa Catarina).	NGT. CITES II. Restricted-range species: present in Atlantic Forest Lowlands EBA.	Not recommended
Band-bellied Owl <i>Pulsatrix melanota</i> 2 subspecies <i>P.m. melanota</i> , <i>P.m. philoscia</i>	<i>P.m. melanota</i> - Possibly SE Colombia; E Ecuador, and N Peru to SE Peru. <i>P.m. philoscia</i> - WC Bolivia.	NGT. CITES II. Very poorly known; considered relatively rare, and very few reliable records, although apparent rarity possibly due partly to species' nocturnal habits and seldom penetrated forest habitats	Not recommended

Northern Hawk-owl <i>Surnia ulula</i> 3 subspecies <i>S.u. ulula</i> , <i>S.u. tianschanica</i> , <i>S.u. caparoch</i>	<i>S.u. ulula</i> - N Eurasia E to Kamchatka and Sakhalin, C Siberia S to Tarbagatay. <i>S.u. tianschanica</i> - C Asia and NW & NE China, possibly also N Mongolia. <i>S.u. caparoch</i> - Alaska through Canada to Newfoundland, S to extreme N USA.	NGT. CITES II. Numbers fluctuate markedly with abundance of small rodents.	Not recommended
Eurasian Pygmy-owl <i>Glaucidium passerinum</i> 2 subspecies <i>G.p. passerinum</i> , <i>G.p. orientale</i>	<i>G.p. passerinum</i> - From Scandinavia and mountains of S, C & E Europe E across NW & C Russia and Siberia to Sakhalin and NE China. <i>G.p. orientale</i> - C & E Siberia.	NGT. CITES II	Not recommended
Collared Owlet <i>Glaucidium brodiei</i> 4 subspecies <i>G.b. brodiei</i> , <i>G.b. pardalotum</i> , <i>G.b. peritum</i> , <i>G.b. borneense</i>	<i>G.b. brodiei</i> - From N Pakistan through Himalayas to SE Tibet, N Indochina, S, C & E China (including Hainan), and S to Malaysia. <i>G.b. pardalotum</i> - Taiwan. <i>G.b. peritum</i> - Sumatra. <i>G.b. borneense</i> - Borneo.	NGT. CITES II. Mainly a forest bird, only occasionally observed near human habitation, so presumably vulnerable to effects of habitat destruction.	Not recommended
Pearl-spotted Owlet <i>Glaucidium perlatum</i> 2 subspecies <i>G.p. perlatum</i> , <i>G.p. licua</i>	<i>G.p. perlatum</i> - Senegambia to W Sudan; possibly also Liberia. <i>G.p. licua</i> - E Sudan, Ethiopia and Uganda S to N & E South Africa, Angola and Namibia.	NGT. CITES II.	Not recommended
Northern Pygmy-owl <i>Glaucidium californicum</i> 4 subspecies <i>G.c. grinnelli</i> , <i>G.c. swarthy</i> , <i>G.c. californicum</i> , <i>G.c. pinicola</i>	<i>G.c. grinnelli</i> - SE Alaska through coastal British Columbia S to coastal W USA (Washington, Oregon, California). <i>G.c. swarthy</i> - Vancouver I. <i>G.c. californicum</i> - British Columbia and Alberta to W USA (S to Nevada and California) and NW Mexico (N Sonora, NW Chihuahua). <i>G.c. pinicola</i> - W USA (Idaho and Montana S to Arizona and New Mexico, E to Colorado).	NGT. CITES II.	Not recommended

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Mountain Pygmy-owl <i>Glaucidium gnoma</i>	From SE Arizona S through interior highlands of Mexico (from Chihuahua and Coahuila S to Oaxaca).	NGT. CITES II	Not recommended
Guatemalan Pygmy-owl <i>Glaucidium cobanense</i>	S Mexico (Chiapas), Guatemala and Honduras.	NGT. CITES II. Restricted-range species: present in North Central American highlands EBA. Little known about ecology and population status. Forest destruction a possible threat.	Not recommended
Baja Pygmy-owl <i>Glaucidium hoskinsii</i>	S Baja California (Mexico): Sierra Victoria, probably also Sierra de la Giganta.	NGT. CITES II. Restricted-range species: present in Baja California EBA. Little known about ecology and population status.	Not recommended
Costa Rican Pygmy-owl <i>Glaucidium costaricanum</i>	C Costa Rica to W Panama, possibly to E Panama.	NGT. CITES II. Restricted-range species: present in Costa Rica and Panama highlands EBA. Rare in Panama.	Not recommended
Cloudforest Pygmy-owl <i>Glaucidium nubicola</i>	W slope of Andes in Colombia (Cordillera Central) and Ecuador.	NGT. CITES II. Species little known, and no data on population level. Continuing forest destruction and degradation a major threat.	Not recommended
Andean Pygmy-owl <i>Glaucidium jardinii</i>	From N Colombia and W Venezuela S through Ecuador to C Peru.	NGT. CITES II. Needs at least patchy forest, but little information available; probably vulnerable to forest destruction.	Not recommended
Yungas Pygmy-owl <i>Glaucidium bolivianum</i>	E slope of Andes in SE Peru, WC Bolivia and NW Argentina.	NGT. CITES II.	Not recommended

Colima Pygmy-owl <i>Glaucidium palmarum</i> 3 subspecies <i>G.p. oberholseri</i> , <i>G.p. palmarum</i> , <i>G.p. griscomi</i>	<i>G.p. oberholseri</i> - S Sonora to S Sinaloa (NW Mexico). <i>G.p. palmarum</i> - Nayarit to Oaxaca (C Mexico). <i>G.p. griscomi</i> - SW Morelos and NE Guerrero (C Mexico).	NGT. CITES II.	Not recommended
Tamaulipas Pygmy-owl <i>Glaucidium sanchezi</i>	NE Mexico (S Tamaulipas, SE San Luis Potosí and extreme N Hidalgo).	NGT. CITES II. Restricted-range species: present in Southern Sierra Madre Oriental EBA.	Not recommended
Central American Pygmy-owl <i>Glaucidium griseiceps</i> 3 subspecies <i>G.g. occultum</i> , <i>G.g. griseiceps</i> , <i>G.g. rarum</i>	<i>G.g. occultum</i> - S Mexico (SE Veracruz, N Oaxaca and Chiapas). <i>G.g. griseiceps</i> - Guatemala, Belize and Honduras. <i>G.g. rarum</i> - Costa Rica and Panama.	NGT. CITES II. Generally little known	Not recommended
Subtropical Pygmy-owl <i>Glaucidium parkeri</i>	E slope of Andes in Ecuador and Peru; possibly N to SW Colombia, possibly also extending farther S into N Bolivia.	NGT. CITES II. Considered uncommon	Not recommended
Amazonian Pygmy-owl <i>Glaucidium hardyi</i>	From SE Venezuela (Bolívar) E through the Guianas to N Brazil (Pará), and S to SE Peru, N & E Bolivia and S Mato Grosso.	NGT. CITES II. Generally considered uncommon, but may well be overlooked as it lives high up in forest; often kept as pet by native tribes. Vulnerable to forest destruction throughout range.	Not recommended
Least Pygmy-owl <i>Glaucidium minutissimum</i>	E Paraguay, S & E Brazil and possibly NE Argentina (Misiones).	NGT. CITES II. Possibly rare, though sometimes adopted as pet by native people; perhaps escapes attention because of less accessible, more forested habitat. Habitat destruction probably represents a serious threat.	Not recommended

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Ferruginous Pygmy-owl <i>Glaucidium brasilianum</i> 12 subspecies <i>G.b. cactorum</i> , <i>G.b. saturatum</i> , <i>G.b. ridgwayi</i> , <i>G.b. medianum</i> , <i>G.b. margaritae</i> , <i>G.b. phalaenoids</i> , <i>G.b. duidae</i> , <i>G.b. olivaceum</i> , <i>G.b. ucayalae</i> , <i>G.b. brasilianum</i> , <i>G.b. pallens</i> , <i>G.b. stranecki</i>	North America, South America, Trinidad, Mexico	NGT. CITES II. In USA, has declined drastically during 20 <sup>th</sup> century	DERP
Tucuman Pygmy-owl <i>Glaucidium tucumanum</i>	NW Argentina from Salta and Tucumán to at least Córdoba.	NGT. CITES II. Status uncertain, but probably not uncommon locally. Habitat destruction the main threat.	Not recommended
Peruvian Pygmy-owl <i>Glaucidium peruanum</i>	W Ecuador (Manabí) S through W Peru to N Chile; also E of Andes in extreme SE Ecuador (Zamora-Chinchipe) and Marañón drainage of Peru.	NGT. CITES II.	Not recommended
Austral Pygmy-owl <i>Glaucidium nanum</i>	Breeds S Chile and S Argentina S to Tierra del Fuego, some wintering farther N in Chile and Argentina.	NGT. CITES II.	Not recommended
Cuban Pygmy-owl <i>Glaucidium siju</i> 2 subspecies <i>G.s. siju</i> , <i>G.s. vittatum</i>	<i>G.s. siju</i> - Cuba. <i>G.s. vittatum</i> - I of Pines.	NGT. CITES II.	Not recommended
Red-chested Owlet <i>Glaucidium tephronotum</i>	<i>G.t. tephronotum</i> - Liberia, Ivory Coast and Ghana. <i>G.t. pycrafti</i> - Cameroon.	NGT. CITES II. Rare and hard to locate.	Not recommended

4 subspecies <i>G.t. tephronotum</i> , <i>G.t. pycrafti</i> , <i>G.t. medje</i> , <i>G.t. elgonense</i>	<i>G.t. medje</i> - Congo Basin, E Zaire and SW Uganda. <i>G.t. elgonense</i> - E Uganda and W Kenya.		
Sjostedt's Owllet <i>Glaucidium sjostedti</i>	Cameroon, Gabon, N Congo, S Central African Republic and NW & C Zaire.	NGT. CITES II. Uncommon in most of range	Not recommended
Asian Barred Owllet <i>Glaucidium cuculoides</i> 8 subspecies <i>G.c. cuculoides</i> , <i>G.c. austerum</i> , <i>G.c. rufescens</i> , <i>G.c. bruegeli</i> , <i>G.c. delacouri</i> , <i>G.c. deignani</i> , <i>G.c. whitelyi</i> , <i>G.c. persimile</i>	<i>G.c. cuculoides</i> - Himalayas from NE Pakistan and Kashmir E to W Sikkim. <i>G.c. austerum</i> - E Sikkim, Bhutan, NE Assam and NW Myanmar. <i>G.c. rufescens</i> - NE India, Bangladesh and N Myanmar. <i>G.c. bruegeli</i> - S Myanmar and S Thailand. <i>G.c. delacouri</i> - N Indochina. <i>G.c. deignani</i> - SE Thailand and S Indochina. <i>G.c. whitelyi</i> - W, C & SE China and NE Vietnam. <i>G.c. persimile</i> - Hainan.	NGT. CITES II.	Not recommended
Javan Owllet <i>Glaucidium castanopterum</i>	Java and Bali.	NGT. CITES II. Little information available; ecology and tolerance of human activities may be similar to those of <i>G. cuculoides</i> ; detailed information much desired. Habitat loss probably main threat.	Not recommended
Jungle Owllet <i>Glaucidium radiatum</i> 2 subspecies <i>G.r. radiatum</i> , <i>G.r. malabaricum</i>	<i>G.r. radiatum</i> - Himalayas from Himachal Pradesh E to Bhutan, Bangladesh and possibly W Myanmar, and S through India; also Sri Lanka. <i>G.r. malabaricum</i> - SW India.	NGT. CITES II. Status poorly known. Common in Sri Lanka, but suffering under deforestation	Not recommended

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Chestnut-backed Owllet <i>Glaucidium castanonotum</i>	Sri Lanka.	NGT. CITES II. Restricted-range species: present in Sri Lanka EBA. Currently considered Near-threatened.	Not recommended
African Barred Owllet <i>Glaucidium capense</i> 3 subspecies <i>G.c. scheffleri</i> , <i>G.c. ngamiense</i> , <i>G.c. capense</i>	<i>G.c. scheffleri</i> - Extreme S Somalia and E Kenya to NE Tanzania. <i>G.c. ngamiense</i> - C Tanzania and SE Zaire across to S Angola, S to N Namibia, N Botswana, E Transvaal and SC Mozambique; also Mafia I. <i>G.c. capense</i> - From S Mozambique S to E Cape.	NGT. CITES II. Threatened by habitat destruction, bush clearance for agriculture occurring at alarming rate; especially dangerous to survival since ecology and exact habitat affinities so poorly understood.	Not recommended
Chestnut Owllet <i>Glaucidium castaneum</i> 2 subspecies <i>G.c. etchecopari</i> , <i>G.c. castaneum</i>	<i>G.c. etchecopari</i> - Patchily in Liberia and Ivory Coast. <i>G.c. castaneum</i> - NE Zaire (Semliki Valley) and SW Uganda (Bwamba Forest).	NGT. CITES II. Status of nominate race uncertain. W African population isolated; considered uncommon to locally not uncommon in Liberia, and widespread and common in Ivory Coast; likely to occur in Ghana, requires investigation.	Not recommended
Albertine Owllet <i>Glaucidium albertinum</i>	Albertine Rift in E Zaire and N Rwanda.	Vulnerable. CITES II. Restricted-range species Surviving numbers not known, but small number of specimens collected from an area well explored by ornithologists suggests that it is rare.	Not recommended
Long-whiskered Owllet <i>Xenoglaux loweryi</i>	N Peru (Río Mayo valley, NW San Martín).	NGT. CITES II. Restricted-range species: present in Andean Ridge-top Forests EBA. Currently considered Near-threatened.	Not recommended
Elf Owl <i>Micrathene whitneyi</i> 4 subspecies <i>M.w. whitneyi</i> , <i>M.w. idonea</i> , <i>M.w. sanfordi</i> , <i>M.w. graysoni</i>	<i>M.w. whitneyi</i> - Breeds SW USA (extreme S Nevada, SE California, C Arizona, SW New Mexico and SW Texas) S to NW Mexico (Sonora). <i>M.w. idonea</i> - S Texas S to C Mexico (S to Puebla, W to Guanajuato).	NGT. CITES II. Almost extirpated in California, where classed as endangered by California Department of Fish and Game; however, species not included on federal or state lists of endangered and threatened species, nor under review for such listing .	DERP

	<i>M.w. sanfordi</i> - S Baja California and parts of Mexican mainland. <i>M.w. graysoni</i> - Revillagigedo Is (Socorro I).		
Spotted Owl <i>Athene brama</i> 4 subspecies <i>A.b. albida</i> , <i>A.b. indica</i> , <i>A.b. brama</i> , <i>A.b. pulchra</i>	<i>A.b. albida</i> - S Iran and S Pakistan; possibly also S Afghanistan. <i>A.b. indica</i> - N & C Indian Subcontinent. <i>A.b. brama</i> - S India. <i>A.b. pulchra</i> - Myanmar, Thailand (except S half of peninsula), S Laos, Cambodia and S Vietnam.	NGT. CITES II. Common over most of range, though rare in S Vietnam.	Not recommended
Forest Owllet <i>Athene blewitti</i>	WC & EC India: plains and low foothills of Akrani Range (W end of Satpura Mts) near Tapi (Tapti) R in NW Maharashtra (formerly W Khandesh), and probably in E Madhya Pradesh and W Orissa (no records in 20 <sup>th</sup> century from last two).	Critically Endangered. CITES I.	Not recommended
<b>Common Name</b> <b>Scientific Name</b>	<b>Range</b>	<b>Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u>)</b>	<b>TAG Recommendation</b>
Little Owl <i>Athene noctua</i> 13 subspecies <i>A.n. vidalii</i> , <i>A.n. noctua</i> , <i>A.n. indigena</i> , <i>A.n. glaux</i> , <i>A.n. saharae</i> , <i>A.n. spilogastra</i> , <i>A.n. somaliensis</i> , <i>A.n. lilith</i> , <i>A.n. bactriana</i> , <i>A.n. orientalis</i> , <i>A.n. impasta</i> , <i>A.n. ludlowi</i> , <i>A.n. plumipes</i>	<i>A.n. vidalii</i> - W & N Europe (S Baltic S to Iberia, including Balearic Is) E to NW Russia. <i>A.n. noctua</i> - C Europe (from about S Germany) S to Sardinia and Sicily, E to Romania. <i>A.n. indigena</i> - Albania, SE Yugoslavia, S & E Romania, S Ukraine, S Russia, Caucasus and SW Siberia, S to Crete, Turkey (except SE) and Middle East (S to Haifa). <i>A.n. glaux</i> - N Africa, and coastal Israel S from Haifa. <i>A.n. saharae</i> - N & C Sahara (S to Mauritania, Mali, Niger, Chad and Sudan), E discontinuously into Arabian Peninsula. <i>A.n. spilogastra</i> - E Sudan, N Ethiopia. <i>A.n. somaliensis</i> - E Ethiopia, Somalia. <i>A.n. lilith</i> - Cyprus, and inland Middle Est from SE Turkey S to S Sinai. <i>A.n. bactriana</i> - From SE Azerbaijan, E Iraq, Iran and Afghanistan E through C Asia to L Balkhash. <i>A.n. orientalis</i> - Extreme NW China and adjacent Siberia. <i>A.n. impasta</i> - Kokonor, W Gansu. <i>A.n. ludlowi</i> - SC China and S & E Tibet, S to N Himalayas. <i>A.n. plumipes</i> - NE China, Mongolia and Ussuriland. Introduced ( <i>vidalii</i> ), just outside natural range, to Britain; also introduced ( <i>vidalii</i> ) to New Zealand.	NGT. CITES II. Population fluctuates, especially in N of range, where marked decreases recorded after severe winters.	Not recommended
Burrowing Owl <i>Athene cunicularia</i> 19 subspecies <i>A.c. hypugaea</i> , <i>A.c. rostrata</i> , <i>A.c. floridana</i> , <i>A.c. troglodytes</i> , <i>A.c. arubensis</i> , <i>A.c. brachyptera</i> , <i>A.c. apurensis</i> , <i>A.c. minor</i> , <i>A.c. carrikeri</i> , <i>A.c. tolimae</i> , <i>A.c. pichincae</i> ,	North America, Venezuela, Colombia, Ecuador, Bolivia, Argentina, Brazil, Peru, Cuba, Bahamas	NGT. CITES II. Listed as endangered in Minnesota and Iowa, and species of special concern in Washington, Oregon, California, Montana, Idaho, Wyoming, Utah, North and South Dakota, Oklahoma and Florida; designated as endangered in British Columbia and Manitoba, and threatened in Alberta and Saskatchewan	PMP

<i>A.c. punensis</i> , <i>A.c. intermedia</i> , <i>A.c. nanodes</i> , <i>A.c. juniensis</i> , <i>A.c. boliviana</i> , <i>A.c. grallaria</i> , <i>A.c. partridgei</i> , <i>A.c. cunicularia</i>			
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Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Boreal Owl <i>Aegolius funereus</i> 6 subspecies <i>A.f. funereus</i> , <i>A.f. caucasicus</i> , <i>A.f. pallens</i> , <i>A.f. magnus</i> , <i>A.f. beickianus</i> , <i>A.f. richardsoni</i>	<i>A.f. funereus</i> - Europe from N Scandinavia S to Pyrenees and then E to Urals, excluding Caucasus. <i>A.f. caucasicus</i> - Caucasus; possibly this race or nominate in N Turkey. <i>A.f. pallens</i> - W Siberia, Tien Shan, and S Siberia E through NE China (Heilongjiang) to Russian Far East (including Sakhalin). <i>A.f. magnus</i> - NE Siberia, from Kolyma to Kamchatka. <i>A.f. beickianus</i> - NW India (Lahul) and W China (Qinghai). <i>A.f. richardsoni</i> - North America (from C Alaska S to W USA, and E through Canada to Labrador).	NGT. CITES II.	Not recommended
Northern Saw-whet Owl <i>Aegolius acadicus</i> 2 subspecies <i>A.a. acadicus</i> , <i>A.a. brooksi</i>	<i>A.a. acadicus</i> - From S Alaska S to S USA, E to SE Canada and N Florida; also highlands of Mexico from NE Sonora to C Michoacán, E in C highlands to Puebla, Hidalgo and C Oaxaca, with isolated population in SE Coahuila, SW Nuevo León and N San Luis Potosí. <i>A.a. brooksi</i> - Queen Charlotte Is (British Columbia).	NGT. CITES II. World population conservatively estimated at 100,000-300,000 individuals. No data on trends, but probably declining slowly as habitat lost	DERP
Unspotted Saw-whet Owl <i>Aegolius ridgwayi</i> 3 subspecies <i>A.r. tacanensis</i> , <i>A.r. rostratus</i> , <i>A.r. ridgwayi</i>	<i>A.r. tacanensis</i> - S Mexico (Chiapas). <i>A.r. rostratus</i> - Guatemala; Honduras and El Salvador (presumed this race). <i>A.r. ridgwayi</i> - Costa Rica and W Panama.	NGT. CITES II. Currently considered Near-threatened. Generally considered uncommon	Not recommended
Buff-fronted Owl <i>Aegolius harrisi</i> 3 subspecies <i>A.h. harrisi</i> , <i>A.h. iheringi</i> , <i>A.h. dabbenei</i>	<i>A.h. harrisi</i> - Andes from NW Venezuela S to NC Peru. <i>A.h. iheringi</i> - E Bolivia, Paraguay, C & E Brazil (Ceará to Rio Grande do Sul), S to NE Argentina and NE Uruguay. <i>A.h. dabbenei</i> - NW Argentina (Tucumán, Salta and Jujuy); also (possibly this race) W Bolivia.	NGT. CITES II. Currently considered Near-threatened. Considered generally rare throughout range, but very few data. Placed on preliminary “Blue List” in Colombia, where population believed to be declining	Not recommended
Rufous Owl <i>Ninox rufa</i> 4 subspecies <i>N.r. humeralis</i> , <i>N.r. rufa</i> , <i>N.r. meesi</i> , <i>N.r. queenslandica</i>	<i>N.r. humeralis</i> - New Guinea, including Aru and Waigeo Is. <i>N.r. rufa</i> - NE Western Australia (Kimberleys) and N Northern Territory (Arnhem Land). <i>N.r. meesi</i> - Coastal and subcoastal Cape York, S in Queensland to about R Endeavour and R Mitchell. <i>N.r. queenslandica</i> - Coastal and subcoastal Queensland from R Endeavour S to lower R Burdekin and perhaps Rockhampton.	NGT. CITES II. Subspecies <i>queenslandica</i> given as rare in Australian national listing and vulnerable in Queensland state listing, c. 1000 pairs estimated; <i>meesi</i> as rare in Queensland. Uncommon to rare and sparsely distributed in New Guinea; some pressure from traditional hunting. In Australia, adversely affected by forest clearance and, perhaps, by increasing numbers of hot first late in dry season.	Not recommended
Powerful Owl	Coastal and subcoastal SE Queensland (S from R Dawson),	Vulnerable. CITES II. Listed as rare or vulnerable in Australian	Not recommended

<i>Ninox strenua</i>	E New South Wales and SE Victoria to extreme SE South Australia.	national listing and by 3 main states in which it occurs (Queensland, New South Wales and Victoria)	
Sumba Boobook <i>Ninox rudolfi</i>	Sumba I, in C Lesser Sundas.	Vulnerable. CITES II. Restricted-range species: present in Sumba EBA. Poorly known	Not recommended
<b>Common Name</b> <b>Scientific Name</b>	<b>Range</b>	<b>Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u>)</b>	<b>TAG Recommendation</b>
Barking Owl <i>Ninox connivens</i> 4 subspecies <i>N.c. rufostrigata</i> , <i>N.c. assimilis</i> , <i>N.c. peninsularis</i> , <i>N.c. connivens</i>	<i>N.c. rufostrigata</i> - N Moluccas (Morotai, Halmahera, Bacan, Obi). <i>N.c. assimilia</i> - C & E New Guinea W to Merauke and R Sepik, including Manam I and Karkar I. <i>N.c. peninsularis</i> - Coastal and subcoastal NW, N & NE Australia S to R Endeavour in Queensland, and islands in SW Torres Strait. <i>N.c. connivens</i> - Coastal and subcoastal SW Australia, southern gulfs, and E & SE Australia (S from foot of Cape York Peninsula).	NGT. CITES II. In SE Australia evidence of decline in population, and concern because much habitat continues to be lost and degraded by clearing and overgrazing. Listed as vulnerable in New South Wales and Victoria.	Not recommended
Southern Boobook <i>Ninox boobook</i> 10 subspecies <i>N.b. rotiensis</i> , <i>N.b. fusca</i> , <i>N.b. plesseni</i> , <i>N.b. moae</i> , <i>N.b. cinnamomina</i> , <i>N.b. remigialis</i> , <i>N.b. pusilla</i> , <i>N.b. ocellata</i> , <i>N.b. lurida</i> , <i>N.b. boobook</i>	<i>N.b. rotiensis</i> - Roti. <i>N.b. fusca</i> - Timor. <i>N.b. plesseni</i> - Alor. <i>N.b. moae</i> - Romang, Leti and Moa. <i>N.b. cinnamomina</i> - Babar. <i>N.b. remigialis</i> - Kai Is. <i>N.b. pusilla</i> - S New Guinea. <i>N.b. ocellata</i> - Australia W of Great Dividing Range; rarely, islands in Torres Strait; also Sawu (W of Timor). <i>N.b. lurida</i> - NE Queensland between Cooktown and Paluma. <i>N.b. boobook</i> - Coastal and subcoastal E Australia, S from S Queensland.	NGT. CITES II	Not recommended
Morepork <i>Ninox novaeseelandiae</i> 3 subspecies <i>N.n. leucopsis</i> , <i>N.n. undulata</i> , <i>N.n. novaeseelandiae</i>	<i>N.n. leucopsis</i> - Tasmania and Bass Strait islands. <i>N.n. undulata</i> - Norfolk I. <i>N.n. novaeseelandiae</i> - New Zealand, including most offshore islands.	NGT. CITES II. Race <i>undulata</i> endangered on Norfolk I mainly through clearing and selective logging. Race <i>albaria</i> extinct on Lord Howe I since 1950's, this due to clearing of forest and introduced species. Race <i>undulata</i> CITES I.	Not recommended
Brown Hawk-owl <i>Ninox scutulata</i> 11 subspecies <i>N.s. ussuriensis</i> , <i>N.s. japonica</i> , <i>N.s. lugubris</i> , <i>N.s. hirsuta</i> , <i>N.s. obscura</i> , <i>N.s. burmanica</i> , <i>N.s. palawanensis</i> , <i>N.s. randi</i> , <i>N.s. scutulata</i> , <i>N.s. javanensis</i> , <i>N.s. boreensis</i>	<i>N.s. ussuriensis</i> - SE Siberia, SE Manchuria and N Korea. <i>N.s. japonica</i> - E China, C & S Korea, Japan and Taiwan. <i>N.s. lugubris</i> - N & C India to W Assam. <i>N.s. hirsuta</i> - S India and Sri Lanka. <i>N.s. obscura</i> - Andaman and Nicobar Is. <i>N.s. burmanica</i> - E Assam to S China, S to N Malay Peninsula, Thailand and Indochina. <i>N.s. palawanensis</i> - Palawan. <i>N.s. randi</i> - Philippines (Luzon, Marinduque, Mindoro, Negros, Cebu, Siquijor, Mindanao, Basilan). <i>N.s. scutulata</i> - S Malay Peninsula, Riau Archipelago, Sumatra and Bangka. <i>N.s. javanensis</i> - W Java. <i>N.s. borneensis</i> - Borneo and N Natuna Is.	NGT. CITES II.	Not recommended

Andaman Hawk-owl <i>Ninox affinis</i>	Andaman Is (South Andaman) and Nicobar Is (Great Nicobar, Camorta, Trinkat, Car Nicobar).	NGT. CITES II. Restricted-range species: present in Andaman Islands EBA and Nicobar Islands EBA. Currently considered Near-threatened.	Not recommended
<b>Common Name</b> <b>Scientific Name</b>	<b>Range</b>	<b>Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u>)</b>	<b>TAG Recommendation</b>
White-browed Hawk-owl <i>Ninox supercilialis</i>	NE, SW & S Madagascar.	NGT. CITES II.	Not recommended
Philippine Hawk-owl <i>Ninox philippensis</i> 7 subspecies <i>N.p. philippensis</i> , <i>N.p. mindorensis</i> , <i>N.p. spilonota</i> , <i>N.p. proxima</i> , <i>N.p. centralis</i> , <i>N.p. spilocephala</i> , <i>N.p. reyi</i>	<i>N.p. philippensis</i> - Luzon, Polillo, Marinduque, Catanduanes, Samar, Leyte, Buad, and perhaps Biliran. <i>N.p. mindorensis</i> - Mindoro. <i>N.p. spilonata</i> - Sibuyan, Tablas, Cebu and Camiguin Sur. <i>N.p. proxima</i> - Masbate, Ticao. <i>N.p. centralis</i> - Panay, Guimaras, Negros, Bohol, Siquijor. <i>N.p. spilocephala</i> - Basilan, Mindanao, Dinagat, Siargao. <i>N.p. rey</i> - Sulu Archipelago.	NGT. CITES II. Race <i>spilonota</i> and <i>reyi</i> , inhabiting small islands, highly threatened by habitat destruction, with local extinctions very likely, e.g. on Cebu and Tablas.	Not recommended
Ochre-bellied Hawk-owl <i>Ninox ochracea</i>	Sulawesi and Butung.	NGT. CITES II. Restricted-range species: present in Sulawesi EBA. Little known and status uncertain. Fairly widespread, but apparently not recorded from S Sulawesi.	Not recommended
Moluccan Hawk-owl <i>Ninox squamipila</i> 4 subspecies <i>N.s. hypogramma</i> , <i>N.s. hantu</i> , <i>N.s. squamipila</i> , <i>N.s. forbesi</i>	<i>N.s. hypogramma</i> - Halmahera, Ternate and Bacan group. <i>N.s. hantu</i> - Buru. <i>N.s. squamipila</i> - Seram. <i>N.s. forbesi</i> - Tanimbar Is.	NGT. CITES II. Restricted-range species	Not recommended
Christmas Hawk-owl <i>Ninox natalis</i>	Christmas I (Indian Ocean).	NGT. CITES I. Widespread but confined to small, isolated Christmas I, where the only strigid; population estimated at c. 560 pairs in 1997. Listed as vulnerable in Australian national list. Probably declined by 25% since settlement and clearance of a quarter of forest during phosphate mining; much of island now protected in National Park, and mining has ceased.	Not recommended
Jungle Hawk-owl <i>Ninox theomacha</i> 4 subspecies <i>N.t. hoedtii</i> , <i>N.t. theomacha</i> , <i>N.t. goldii</i> , <i>N.t. rosseliana</i>	<i>N.t. hoedtii</i> - Waigeo and Misool Is. <i>N.t. theomacha</i> - New Guinea. <i>N.t. goldii</i> - D'Entrecasteaux Archipelago (Goodenough, Fergusson, Normanby). <i>N.t. rosseliana</i> - Louisiade Archipelago (Tagula, Rossel).	NGT. CITES II.	Not recommended
Manus Hawk-owl <i>Ninox meeki</i>	Manus I (Admiralty Is).	NGT. CITES II. Restricted-range species: present in Admiralty Islands EBA.	Not recommended
Speckled Hawk-owl <i>Ninox punctulata</i>	Sulawesi, including Kabaena, Muna and Butung Is.	NGT. CITES II. Widespread, but generally uncommon.	Not recommended
Bismarck Hawk-owl <i>Ninox variegata</i>	New Britain, New Ireland and New Hanover, in Bismarck Archipelago.	NGT. CITES II. Restricted-range species: present in New Britain and New Ireland EBA.	Not recommended
New Britain Hawk-owl <i>Ninox odiosa</i>	New Britain, in Bismarck Archipelago.	NGT. CITES II. Restricted-range species: present in New Britain and New Ireland EBA	Not recommended
Solomon Hawk-owl <i>Ninox jacquinoti</i> 7 subspecies <i>N.j. eichhorni</i> , <i>N.j. jacquinoti</i> , <i>N.j. granti</i> , <i>N.j. mono</i> , <i>N.j. floridae</i> , <i>N.j. malaitae</i> , <i>N.j. roseoaxillaris</i>	<i>N.j. eichhorni</i> - Buka, Bougainville and Choiseul. <i>N.j. jacquinoti</i> - Ysabel and St George. <i>N.j. granti</i> - Guadalcanal. <i>N.j. mono</i> - Mono I. <i>N.j. floridae</i> - Florida I. <i>N.j. malaitae</i> - Malaita I. <i>N.j. roseoaxillaris</i> - Bauro and San Cristobal.	NGT. CITES II. Restricted-range species: present in Solomon Group EBA.	Not recommended



Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Papuan Hawk-owl <i>Uroglaux dimorpha</i>	Irian Jaya and Papua New Guinea, including Yapen I; probably occurs throughout New Guinea, but known only from NW & SE.	NGT. CITES II. Data-deficient. Sparsely distributed throughout range, and rarely seen; appears to be rare.	Not recommended
Laughing Owl <i>Sceloglaux albifacies</i>	Formerly occurred in mainly S half of North Island in areas of lower rainfall, in South Island E of Southern Alps but well into mountains, and on Stewart I.	Almost certainly Extinct. CITES II.	Not recommended
Jamaican Owl <i>Pseudoscops grammicus</i>	Jamaica.	NGT. CITES II. Restricted-range species Extensive cutting of forest has probably reduced its range and numbers; advisable to monitor status while island's forest areas continue to be destroyed.	Not recommended
Striped Owl <i>Asio clamator</i> 4 subspecies <i>A.c. forbesi</i> , <i>A.c. clamator</i> , <i>A.c. oberi</i> , <i>A.c. midas</i>	<i>A.c. forbesi</i> - S Mexico to Panama. <i>A.c. clamator</i> - Colombia and Venezuela S to E Peru and C & NE Brazil. <i>A.c. oberi</i> - Tobago and NE Trinidad. <i>A.c. midas</i> - E Bolivia and S Brazil S to N Argentina and Uruguay.	NGT. CITES II. Status generally poorly known, and little information on ecology and biology. Race <i>oberi</i> little known, may even be extinct.	Not recommended
Stygian Owl <i>Asio stygius</i> 6 subspecies <i>A.s. lambi</i> , <i>A.s. robustus</i> , <i>A.s. siguapa</i> , <i>A.s. noctipetens</i> , <i>A.s. stygius</i> , <i>A.s. barberoi</i>	<i>A.s. lambi</i> - W Mexican highlands (SW Chihuahua to Jalisco). <i>A.s. robustus</i> - From S Mexico (Guerrero and Veracruz) discontinuously to NW Venezuela, Colombia and Ecuador. <i>A.s. siguapa</i> - Cuba and I of Pines. <i>A.s. noctipetens</i> - Hispaniola and Ile de Gonâve. <i>A.s. stygius</i> - From N Brazil S to E Bolivia, NE Argentina and SE Brazil. <i>A.s. barberoi</i> - Paraguay and N Argentina.	NGT. CITES II. Considered generally rare or patchily distributed. Distribution incompletely documented. Data on life history needed to develop conservation strategies.	Not recommended
Northern Long-eared Owl <i>Asio otus</i> 4 subspecies <i>A.o. otus</i> , <i>A.o. canariensis</i> , <i>A.o. tuftsi</i> , <i>A.o. wilsonianus</i>	<i>A.o. otus</i> - Eurasia, from British Is and Iberia E to Sea of Okhotsk, S to Mediterranean islands, Middle East, N Pakistan (has bred) and Japan, with isolated population in EC China; also Azores, and NW Africa (Morocco to NW Tunisia). <i>A.o. canariensis</i> - Canary Is. <i>A.o. tuftsi</i> - W Canada (S Yukon, S British Columbia E to Saskatchewan) S to Mexico (NW Baja California, Nuevo Leon) and S USA (W Texas). <i>A.o. wilsonianus</i> - From SC & SE Canada (Manitoba E to Nova Scotia) S in USA to N Oklahoma and Virginia.	NGT. CITES II.	DERP
African Long-eared Owl <i>Asio abyssinicus</i> 2 subspecies <i>A.a. abyssinicus</i> , <i>A.a. graueri</i>	<i>A.a. abyssinicus</i> - Highlands of Ethiopia and Eritrea. <i>A.a. graueri</i> - Ruwenzori and Mitumba Mts in E Zaire/W Uganda, and Mt Kenya.	NGT. CITES II. Scarce to rather rare throughout range. Race <i>graueri</i> rare on Mt Kenya; known from only 1 specimen, but sighted in 1975 and 1992.	Not recommended
Madagascar Long-eared Owl <i>Asio madagascariensis</i>	Madagascar.	NGT. CITES II. Status difficult to assess because of secretive and nocturnal lifestyle; may be overlooked. May be threatened by deforestation, which is extensive in Madagascar.	Not recommended

Common Name Scientific Name	Range	Status in Wild (from <u>Handbook to the Birds of the World vol. 2&amp; 5</u> )	TAG Recommendation
Short-eared Owl	<i>A.f. flammeus</i> - Breeds Iceland, British Is, and locally	NGT. CITES II.	DERP

<p><i>Asio flammeus</i> 10 subspecies <i>A.f. flammeus</i>, <i>A.f. ponapensis</i>, <i>A.f. sandwichensis</i>, <i>A.f. domingensis</i>, <i>A.f. portoricensis</i>, <i>A.f. pallidicaudus</i>, <i>A.f. bogotensis</i>, <i>A.f. galapagoensis</i>, <i>A.f. suinda</i>, <i>A.f. sanfordi</i></p>	<p>through Europe and Asia E to Kamchatka and Commander Is, S to Spain, Caucasus, NE Mongolia and NE China; also North America from W &amp; N Alaska through Canada and S to C USA. <b><i>A.f. ponapensis</i></b> - Pohnpei I, in E Caroline Is. <b><i>A.f. sandwichensis</i></b> - Hawaiian Is. <b><i>A.f. domingensis</i></b> - Hispaniola; also (possibly this race) Cuba. <b><i>A.f. portoricensis</i></b> - Puerto Rico. <b><i>A.f. pallidicaudus</i></b> - N Venezuela, Guyana. <b><i>A.f. bogotensis</i></b> - Colombia, Ecuador, NW Peru. <b><i>A.f. galapagoensis</i></b> - Galapagos Is. <b><i>A.f. suinda</i></b> - S Peru, WC Bolivia, Paraguay and SE Brazil S to Tierra del Fuego. <b><i>A.f. sanfordi</i></b> - Falkland Is.</p>		
<p>Marsh Owl <i>Asio capensis</i> 3 subspecies <i>A.c. tingitanus</i>, <i>A.c. capensis</i>, <i>A.c. hova</i></p>	<p><b><i>A.c. tingitanus</i></b> - NW Morocco. <b><i>A.c. capensis</i></b> - Isolated areas in W Africa, from Senegal to Chad and Cameroon; also from Sudan and Ethiopian Highlands, and from S Congo, S to the Cape. <b><i>A.c. hova</i></b> - Madagascar.</p>	NGT. CITES II.	Not recommended
<p>Fearful Owl <i>Nesasio solomonensis</i></p>	Solomon Is, on Bougainville, Choiseul and Santa Isabel.	Vulnerable. CITES II. Restricted-range species: present in Solomon Group EBA.	Not recommended