# CORACIIFORMES TAG
# REGIONAL COLLECTION PLAN
# Third Edition, December 31, 2008

White-throated Bee-eaters D. Shapiro, copyright Wildlife Conservation Society

**Prepared by the Coraciiformes Taxon Advisory Group**
**Edited by Christine Sheppard**

TAG website address: http://www.coraciiformestag.com/

# Table of Contents

## CORACIIFORMES TAG STEERING COMMITTEE

The Coraciiformes TAG has nine members, elected for staggered three year terms (excepting the chair).

**Chair:**
Christine Sheppard
Curator, Ornithology, Wildlife Conservation Society/Bronx Zoo
2300 Southern Blvd.
Bronx, NY 10460
Phone: 718 220-6882 Fax 718 733 7300 email: csheppard@wcs.org

**Vice Chair:**
Lee Schoen, studbookkeeper Great and Rhino Hornbills
Curator of Birds
Audubon Zoo
PO Box 4327
New Orleans, LA 70118
Phone: 504 861 5124 Fax: 504 866 0819 email: schoen2@juno.com

**Secretary:** (non-voting)
Kevin Graham , PMP coordinator, Blue-crowned Motmot
Department of Ornithology
Disney's Animal Kingdom
PO Box 10000
Lake Buena Vista, FL 32830
Phone: (407) 938-2501 Fax: 407 939 6240 email: kevin.t.graham@disney.com

John Azua
Curator, Ornithology, Denver Zoological Gardens
2300 Steele St.
Denver, CO 80205
Phone: 303 376 4914 Fax: 303 376 4801 email: Jazua@denverzoo.org

Scott Barton
General Curator
Reid Park Zoo
1100 S. Randolph Way
Tucson, AZ 85716
Phone: 520 791 5378 x 11 email Scott.Barton@tucsonaz.gov

Susan Healy
Sacramento Zoo
3930 W. Land Park Dr.
Sacramento, CA 95822
Phone 916 264 5166 Fax: 916 264 5887 email: shealy@cityofsacramento.org

Nicole Kehl, PMP coordinator, Red-billed Hornbill
Lincoln Park Zoo
2001 N. Clark St.
Chicago, IL 60614
Phone: 312 742 2000 Fax: 312 742 2137 email: nkehl@lpzoo.org

Mike Mace
Curator, Ornithology
San Diego Wild Animal Park
15500 San Pasqual Valley Rd.
Escondido, CA 92927
Phone: 760 738 5077 Fax: 760 746 7081 email: mmace@sandiegozoo.org

Mike Macek
Curator, Ornithology, Saint Louis Zoological Park
1 Government Dr.
Saint Louis, MO 63110
Phone: 314 781 0900 x362 Fax: 314 647 7969 email macek@stlzoo.org

Mark Myers
Curator, Ornithology
Woodland Park Zoo
601 N. 59th St.
Seattle, WA 98103
Phone: 206 548 2500 x1309 Fax: 206 548 1536 email Mark.Myers@zoo.org

Paul Schutz, Disney's Animal Kingdom
Department of Ornithology
Disney's Animal Kingdom
PO Box 10000
Lake Buena Vista, FL 32830
Phone: (407) 938-2936 Fax 407 939 6240 email: Paul.J.Schutz@disney.com

**ADVISORS:**

**Nutrition:**

Dr. Ellen Dierenfeld
EDierenfeld@aol.com

**Veterinary**:

Kathryn Gamble
Director of Veterinary Services
Lincoln Park Zoo
2001 N. Clark St.
Chicago, IL 60614
Phone: 312 742 7722 Fax: 312 742 2137 enail: kgamble@lpzoo.org

**ADVISORS**, continued

**Husbandry and Management:**

**Bee-eaters**

Marcia Arland
Assistant Collection Manager
WCS/Bronx Zoo, Department of Ornithology
2300 Southern Blvd.
Bronx, NY 10460
Phone: 718 220 5070 Fax: 718 733 7300 email Marland@wcs.org

Martin Vince
Curator, Ornithology
Riverbanks Zoo & Garden
PO Box 1060
Columbia, SC 29202
Phone: 803 779 8717x 1159 Fax: 803 253 6381 email: mvince@riverbanks.org

**Kingfishers**

Beth Bahner, SSP coordinator Micronesian Kingfisher
Collections Manager
Philadelphia Zoo
3400 West Girard Ave.
Philadelphia, PA 19104
Phone: 215 243 0219 Fax: 215 243 5292 email: Bahner.Beth@phillyzoo.org

**Hornbills:**

**Aceros**

Eric Kowalczyk
Department of Ornithology
Woodland Park Zoo
601 N. 59th. St.
Seattle, WA 98103
Phone: 206 548-2500 (#1408) Fax 206 684 4854 email eric.kowalczyk@zoo.org

**Bucorvus**

Roger Sweeney, PMP coordinator Abyssinian and Southern Ground Hornbill
Curator
Tracy Aviary
589 E 1300 S
Salt Lake City, UT 84105
(801) 596-8500 x114

**Bycanistes**

Cindy Dupree, PMP coordinator, Trumpeter Hornbill
Department of Ornithology
Central Florida Zoo
PO Box 470309
Lake Monroe, FL 32747
Phone: 407 323 4450 Fax: 407 321 0900 email: CindyD@centralfloridazoo.org

**ADVISORS continued**
**Husbandry and Management:**

**Hoopoes**

Kevin Graham , PMP coordinator, Green Woodhoopoe
Department of Ornithology
Disney's Animal Kingdom
PO Box 10000
Lake Buena Vista, FL 32830
Phone: (407) 938-2501 Fax: 407 939 6240 email: kevin.t.graham@disney.com

**Rollers**

Tim Snyder, PMP coordinator, Blue-bellied Roller
Curator of Birds
Brookfield Zoo
3300 Golf Road
Brookfield, IL 60513
Phone 708 688-8400 fax: 708 485 6320 email:t.snyder@czs.org

## Coraciiformes TAG definition and taxonomy:

The Coraciiformes TAG covers all species in the order Coraciiformes. There are excellent exhibit species in this taxon, because many habitually sit on open perching, searching for prey. While there are threatened forms in most of the families in this order, the majority, and the most threatened forms are the large Asian Hornbills. Ironically, these species are the most challenging to breed, possibly requiring an opportunity to choose mates that is difficult to provide in zoos.

### *Taxonomy and General References*

The taxonomy of some families in the Coraciiformes, notably the Bucerotidae (in some schemes called Bucerotiformes), has been the subject of multiple revisions. Volume VI of the series Handbook of Birds of the World (del Hoyo et al.) covers the order Coraciiformes in detail and it is the best general resource, providing a comprehensive review of the existing literature on the order, as well as discussions of taxonomy. The TAG has selected this as our primary reference and Table 1 lists the 201 species there described, with the current IUCN conservation status of each species. Del Hoyo does not list taxonomy to the level of subspecies. Kemp (1995) is a good reference for hornbill subspecies. Other taxonomic references will be found in the Bibliography. Appendix I provides a comparison of several alternate taxonomic schemes. A comprehensive bibliography of the Coraciiformes can be found on the TAG website (`www.coraciiformestag.com`).

### *Families, Genera and Species in the order Coraciiformes:*

del Hoyo, J., Elliott, A. and Sargatal, J. eds, 2001. Handbook of Birds of the World, Volume 6, Mousebirds to Hornbills.

**Momotidae** (Motmots) 10 species, 6 genera

**Todidae** (Todies) 5 species, one genus

**Brachypteraciidae** (Ground Rollers) 6 species, 4 genera

**Leptosomidae** (Cuckoo Rollers) one species

**Coraciidae** (Rollers) 12 species, 2 genera

**Alcedinidae**: (Kingfishers) 87 species, 17 genera

**Meropidae** (Bee-eaters) 24 species, 3 genera

**Upupidae** (Hoopoes) one species

**Phoeniculidae** (Woodhoopoes) 8 species, 2 genera,

**Bucerotidae** (Hornbills) 14 genera, 53 species,

Table 1: Species in the order Coraciiformes (after del Hoyo *et al*., 2001) and their IUCN conservation Status. NT=Near Threatened, LC=Least Concern, V=Vulnerable, E=Endangered, C=Critical

| Family | Genus | species | subspecies | Common name | IUCN status |
|---|---|---|---|---|---|
| Coraciidae | | | | **ROLLERS** | |
| | *Coracias* | *garrulus* | | European Roller | NT |
| | *Coracias* | *abyssinica* | | Abyssinian Roller | LC |
| | *Coracias* | *caudatus* | | Lilac-breasted Roller | LC |
| | *Coracias* | *spatulatus* | | Racket-tailed Roller | LC |
| | *Coracias* | *naevia* | | Purple | LC |
| | *Coracias* | *benghalensis* | | Indian Roller | LC |
| | *Coracias* | *temminckii* | | Purple-winged | LC |
| | *Coracias* | *cyanogaster* | | Blue-bellied Roller | LC |
| | *Eurystomus* | *glaucurus* | | Cinnamon | LC |
| | *Eurystomus* | *gularis* | | Blue-throated Roller | LC |
| | *Eurystomus* | *orientalis* | | Dollar Bird | LC |
| | *Eurystomus* | *azureus* | | Azure Roller | NT |
| | | | | | |
| Brachypteraciidae | *Brachypteracias* | *leptosomus* | | Short-legged Ground Roller | V |
| | *Brachypteracias* | *squamiger* | | Scaly Ground Roller | V |
| | *Atelornis* | *pittoides* | | Pitta-like Ground roller | LC |
| | *Atelornis* | *crossleyi* | | Rufous-headed ground roller | NT |
| | *Uratelornis* | *chimaera* | | Long-tailed Ground Roller | V |
| Leptosomidae | *Leptosomus* | *discolor* | | Cuckoo Roller | LC |
| | | | | | |
| Momotidae | | | | **MOTMOTS** | |
| | *Hylomanes* | *momotula* | | Tody Motmot | LC |
| | *Aspatha* | *gularis* | | Blue-throated Motmot | LC |
| | *Electron* | *platyrhynchum* | | Broad-billed Motmot | LC |
| | *Electron* | *carinatum* | | Keel-billed Motmot | V |
| | *Eumomota* | *superciliosa* | | Turquoise -browed Motmot | LC |
| | *Baryphthengus* | *ruficapillus* | | Rufous-capped Motmot | LC |
| | *Baryphthengus* | *martii* | | Rufous Motmot | LC |
| | *Momotus* | *momota* | | Blue-crowned | LC |
| | *Momotus* | *mexicanus* | | Russet-crowned | LC |
| | *Momotus* | *aequatorialis* | | Highland | LC |
| | | | | | |
| Todidae | | | | **TODIES** | |
| | *Todus* | *multicolor* | | Cuban Tody | LC |
| | *Todus* | *angustirostris* | | Narrow-billed Tody | LC |
| | *Todus* | *mexicanus* | | Puerto Rican Tody | LC |
| | *Todus* | *todus* | | Jamaican Tody | LC |
| | *Todus* | *subulatus* | | Broad-billed | LC |

Table 1, continued: Species in the order Coraciiformes (after del Hoyo, 2001) and their IUCN conservation status. NT=Near Threatened, LC=Least Concern, V=Vulnerable, E=Endangered, C=Critical

| | | | | | |
|---|---|---|---|---|---|
| Alcedinidae | | | | **KINGFISHERS** | |
| | *Alcedo* | *hercules* | | Great Blue | NT |
| | *Alcedo* | *atthis* | | River | LC |
| | *Alcedo* | *semitorquata* | | Half-collared | LC |
| | *Alcedo* | *quadribrachys* | | Shining Blue | LC |
| | *Alcedo* | *meninting* | | Blue-eared | LC |
| | *Alcedo* | *azurea* | | Azure | LC |
| | *Alcedo* | *websteri* | | Bismarck | V |
| | *Alcedo* | *cyanopecta* | | Philippine Pectoral | LC |
| | *Alcedo* | *argentata* | | Silvery | V |
| | *Alcedo* | *cristata* | | Malachite | LC |
| | *Alcedo* | *leucogaster* | | White-bellied | LC |
| | *Alcedo* | *coerulescens* | | Caerulean | LC |
| | *Alcedo* | *lepida* | | Variable Dwarf | LC |
| | *Alcedo* | *vintsiodes* | | Madagascar Malachite | LC |
| | *Alcedo* | *euryzona* | | Blue-banded | V |
| | *Ceyx* | *erithacus* | | Oriental Dwarf | LC |
| | *Ceyx* | *melanurus* | | Philippine Dwarf | V |
| | *Ceyx* | *fallax* | | Celebes Dwarf | NT |
| | *Ceyx* | *madagascariensis* | | Madagascar Pygmy | LC |
| | *Ceyx* | *pictus* | | African Pygmy | LC |
| | *Ceyx* | *lecontei* | | African Dwarf | LC |
| | *Lacedo* | *pulchella* | | Banded | LC |
| | *Dacelo* | *novaeguineae* | | Laughing Kookaburra | LC |
| | *Dacelo* | *leachii* | | Blue-winged Kookaburra | LC |
| | *Dacelo* | *tyro* | | Spangled Kookaburra | LC |
| | *Dacelo* | *gaudichaud* | | Rufous-bellied Kookaburra | LC |
| | *Clytoceyx* | *rex* | | Shovel-billed | LC |
| | *Cittura* | *cyanotis* | | Lilac-cheeked | NT |
| | *Pelargopsis* | *amauroptera* | | Brown-winged | LC |
| | *Pelargopsis* | *capensis* | | Stork-billed | LC |
| | *Pelargopsis* | *melanorhyncha* | | Black-billed | LC |
| | *Halcyon* | *coromanda* | | Ruddy Kingfisher | LC |
| | *Halcyon* | *badia* | | Chocolate-backed | LC |
| | *Halcyon* | *smyrnensis* | | White-throated | LC |
| | *Halcyon* | *pileata* | | Black-capped | LC |
| | *Halcyon* | *cyanoventris* | | Java | LC |
| | *Halcyon* | *leucocephala* | | Grey-headed | LC |
| | *Halcyon* | *senegalensis* | | Woodland | LC |
| | *Halcyon* | *senegaloides* | | African Mangrove | LC |
| | *Halcyon* | *malimbica* | | Blue-breasted | LC |
| | *Halcyon* | *albiventris* | | Brown-hooded | LC |
| | *Halcyon* | *chelicuti* | | Striped | LC |
| | *Todiramphus* | *chloris* | | Collared | LC |

Table 1, continued: Species in the order Coraciiformes (after del Hoyo, 2001) and their IUCN conservation status. NT=Near Threatened, LC=Least Concern, V=Vulnerable, E=Endangered, C=Critical, Ex=Extinct in the wild

| Alcedinidae con't. | | | | Kingfishers continued | |
|---|---|---|---|---|---|
| | *Todiramphus* | *cinnamomina* | | Micronesian | LC |
| | | *cinnamomina* | cinnamomina | Guam | Ex |
| | *Todiramphus* | *nigrocyanea* | | Blue-black | LC |
| | *Todiramphus* | *winchelli* | | Rufous-lored | LC |
| | *Todiramphus* | *diops* | | Blue-and-White | LC |
| | *Todiramphus* | *lazuli* | | Lazuli | LC |
| | *Todiramphus* | *macleayii* | | Forest | LC |
| | *Todiramphus* | *albonotatus* | | New Britain | LC |
| | *Todiramphus* | *leucopygius* | | Ultramarine | LC |
| | *Todiramphus* | *farquhari* | | Chestnut-bellied | LC |
| | *Todiramphus* | *pyrrhopygius* | | Red-backed | LC |
| | *Todiramphus* | *funebris* | | Sombre | LC |
| | *Todiramphus* | *chloris* | | Mangrove | LC |
| | *Todiramphus* | *saurophaga* | | Beach | LC |
| | *Todiramphus* | *australasia* | | Cinnamon-banded | LC |
| | *Todiramphus* | *sancta* | | Sacred | LC |
| | *Todiramphus* | *veneratus* | | Tahiti | LC |
| | *Todiramphus* | *tutus* | | Chattering | LC |
| | *Caridonax* | *fulgidus* | | White-rumped | LC |
| | *Syma* | *torotoro* | | Yellow-billed | LC |
| | *Syma* | *megarhyncha* | | Mountain | LC |
| | *Melidora* | *macrorrhina* | | Hook-billed | LC |
| | *Actenoides* | *bougainvillei* | | Moustached | V |
| | *Actenoides* | *concretus* | | Rufous-collared | NT |
| | *Actenoides* | *lindsayi* | | Spotted | LC |
| | *Actenoides* | *hombroni* | | Blue-capped | V |
| | *Actenoides* | *monachus* | | Green-backed | NT |
| | *Actenoides* | *princeps* | | Scaly-breasted | LC |
| | *Tanysiptera* | *hydrocharis* | | Aru Paradise | LC |
| | *Tanysiptera* | *galatea* | | Common Paradise | LC |
| | *Tanysiptera* | *carolinae* | | Numfor Paradise | NT |
| | *Tanysiptera* | *nympha* | | Rufous-breasted Paradise | LC |
| | *Tanysiptera* | *danae* | | Brown-headed Paradise | LC |
| | *Tanysiptera* | *sylvia* | | Buff-breasted | LC |
| | *Tanysiptera* | *ellioti* | | Kofiau Paradise | LC |
| | *Tanysiptera* | *riedelii* | | Biak Paradise | LC |
| | *Megaceryle* | *maxima* | | Giant | LC |
| | *Megaceryle* | *lugubris* | | Crested | LC |
| | *Megaceryle* | *alcyon* | | Belted | LC |
| | *Megaceryle* | *torquata* | | Ringed | LC |
| | *Ceryle* | *rudis* | | Pied | LC |
| | *Chloroceryle* | *amazona* | | Amazon | LC |
| | *Chloroceryle* | *americana* | | Green | LC |
| | *Chloroceryle* | *inda* | | Green-and-Rufous | LC |
| | *Chloroceryle* | *aenea* | | American Pygmy | LC |

Table 1, continued: Species in the order Coraciiformes (after del Hoyo, 2001) and their IUCN conservation status. NT=Near Threatened, LC=Least Concern, V=Vulnerable, E=Endangered, C=Critical

| | | | | | |
|---|---|---|---|---|---|
| Meropidae | | | | **BEE-EATERS** | |
| | *Nyctyornis* | *amictus* | | Red-bearded | LC |
| | *Nyctyornis* | *athertoni* | | Blue-bearded | LC |
| | *Meropogon* | *forsteni* | | Purple-bearded | LC |
| | *Merops* | *gularis* | | Black | LC |
| | *Merops* | *muelleri* | | Blue-headed | LC |
| | *Merops* | *bulocki* | | Red-throated | LC |
| | *Merops* | *bullockoides* | | White-fronted | LC |
| | *Merops* | *pusillus* | | Little | LC |
| | *Merops* | *variegatus* | | Blue-breasted | LC |
| | *Merops* | *oreobates* | | Cinnamon-chested | LC |
| | *Merops* | *hirundinaeus* | | Swallow-tailed | LC |
| | *Merops* | *breweri* | | Black-headed | LC |
| | *Merops* | *revoilii* | | Somali | LC |
| | *Merops* | *albicollis* | | White-throated | LC |
| | *Merops* | *orientalis* | | Little Green | LC |
| | *Merops* | *boehmi* | | Boehm's | LC |
| | *Merops* | *viridis* | | Blue-throated | LC |
| | *Merops* | *persicus* | | Blue-cheeked | LC |
| | *Merops* | *superciliosus* | | Olive | LC |
| | *Merops* | *ornatus* | | Rainbow | LC |
| | *Merops* | *apiaster* | | European | LC |
| | *Merops* | *leschenaulti* | | Bay-headed | LC |
| | *Merops* | *malimbicus* | | Rosy | LC |
| | *Merops* | *nubicus* | | Carmine | LC |
| | | | | | |
| Upupidae | | | | **HOOPOES** | |
| | *Upupa* | *epops* | | Common Hoopoe | LC |
| | | | | | |
| Phoeniculidae | | | | **WOODHOOPOES** | |
| | *Phoeniculus* | *purpureus* | | Green Woodhoopoe | LC |
| | *Phoeniculus* | *castaneiceps* | | Forest | LC |
| | *Phoeniculus* | *bollei* | | White-headed | LC |
| | *Phoeniculus* | *somaliensis* | | Black-billed | LC |
| | *Phoeniculus* | *damarensis* | | Violet | LC |
| | *Rhinopomastus* | *cyanomelas* | | Common Scimitarbill | LC |
| | *Rhinopomastus* | *aterrimus* | | Black Woodhoopoe | LC |
| | *Rhinopomastus* | *minor* | | Abyssinian Scimitarbill | LC |

Table 1, continued: Species in the order Coraciiformes (after del Hoyo, 2001) and their IUCN conservation status. NT=Near Threatened, LC=Least Concern, V=Vulnerable, E=Endangered, C=Critical

| | | | | | |
|---|---|---|---|---|---|
| Bucerotidae | | | | **HORNBILLS** | |
| | *Ceratogymna* | *elata* | | Yellow-casqued | NT |
| | *Ceratogymna* | *atrata* | | Black-casqued | LC |
| | *Bycanistes* | *fistulator* | | Piping | LC |
| | *Bycanistes* | *bucinator* | | Trumpeter | LC |
| | *Bycanistes* | *cylindricus* | | Brown-cheeked | NT |
| | *Bycanistes* | *subcylindricus* | | Grey-cheeked | LC |
| | *Bycanistes* | *brevis* | | Silvery-cheeked | LC |
| | *Anthracoceros* | *coronatus* | | Indian Pied | NT |
| | *Anthracoceros* | *albirostris* | | Oriental Pied | LC |
| | *Anthracoceros* | *malayanus* | | Black | NT |
| | *Anthracoceros* | *montani* | | Sulu | C |
| | *Anthracoceros* | *marchei* | | Palawan | V |
| | *Anorrhinus* | *tickelli* | | Tickell's Brown | NT |
| | *Anorrhinus* | *austeni* | | Austen's Brown | NT |
| | *Anorrhinus* | *galeritus* | | Bushy-crested | LC |
| | *Penelopides* | *panini* | | Visayan Tarictic | E |
| | *Penelopides* | *exarhatus* | | Sulawesi Tarictic | LC |
| | *Penelopides* | *manillae* | | Luzon Tarictic | LC |
| | *Penelopides* | *affinis* | | Mindanao Tarictic | LC |
| | *Penelopides* | *mindorensis* | | Mindoro Tarictic | E |
| | *Berenicornis* | *comatus* | | White-Crowned | NT |
| | *Aceros* | *nipalensis* | | Rufous-necked | V |
| | *Aceros* | *corrugatus* | | Wrinkled | NT |
| | *Aceros* | *leucocephalus* | | Writhed | NT |
| | *Aceros* | *waldeni* | | Rufous-headed | C |
| | *Aceros* | *cassidix* | | Knobbed | LC |
| | *Rhyticeros* | *narcondami* | | Narcondam | V |
| | *Rhyticeros* | *undulatus* | | Wreathed | NL |
| | *Rhyticeros* | *subruficollis* | | Plain-pouched | V |
| | *Rhyticeros* | *everetti* | | Sumba | V |
| | *Rhyticeros* | *plicatus* | | Papuan | NT |
| | *Buceros* | *rhinoceros* | | Rhinoceros | NT |
| | *Buceros* | *bicornis* | | Great | NT |
| | *Rhinoplax* | *vigil* | | Helmeted | NT |
| | *Tockus* | *alboterminatus* | | Crowned | LC |
| | *Tockus* | *bradfieldi* | | Bradfield's | LC |
| | *Tockus* | *fasciatus* | | African Pied | LC |
| | *Tockus* | *hemprichii* | | Hemprich's | LC |
| | *Tockus* | *pallidirostris* | | Pale-billed | LC |
| | *Tockus* | *nasutus* | | African Grey | LC |
| | *Tockus* | *monteiri* | | Monteiro's | LC |
| | *Tockus* | *erythrorynchus* | | Red-billed | LC |
| | *Tockus* | *leucomelas* | | S. Yellow-billed | LC |
| | *Tockus* | *flavirostris* | | E. Yellow-billed | LC |
| | *Tockus* | *deckeni* | | Von der Decken's | LC |

Table 1, continued: Species in the order Coraciiformes (after del Hoyo, 2001) and their IUCN conservation status. NT=Near Threatened, LC=Least Concern, V=Vulnerable, E=Endangered, C=Critical

| | | | | | |
|---|---|---|---|---|---|
| Bucerotidae, con't | | | | Hornbills, continued | |
| | *Tockus* | *hartlaubi* | | Black Dwarf-hornbill | LC |
| | *Tockus* | *camurus* | | Red-billed Dwarf-hornbill | LC |
| | *Tropicranus* | *albocristatus* | | Long-tailed | LC |
| | *Ocyceros* | *griseus* | | Malabar Grey | LC |
| | *Ocyceros* | *gingalensis* | | Sri Lankan Grey | LC |
| | *Ocyceros* | *birostris* | | Indian Grey | LC |
| | *Bucorvus* | *abyssinicus* | | Abyssinian Ground-hornbill | LC |
| | *Bucorvus* | *leadbeateri* | | Southern Ground-hornbill | LC |

**Coraciiformes TAG Mission Statement:**

The Coraciiformes TAG promotes *in situ* conservation of species in the order Coraciiformes and their habitats through participation in and support of field programs, by improving captive management and by using exhibition of birds to influence public opinion to favor conservation activities.

***Coraciiformes TAG Goals***

1. Identify priority exhibit species for long-term display in AZA institutions and develop long-term population management programs for them.

2. Promote and support taxon priorities and population management programs identified in the Regional Collection Plan, for AZA institutions and others. In order to guide institutions that propose to work with Coraciiformes, each species, and in some case sub-species, has been separately considered, using criteria described below. These criteria have been used to identify priority taxa and recommendations for their management in AZA collections. All of the programs recommended in the first edition of the RCP have been created, except two 'phase in'.

3. Minimize the need for importation of wild specimens for captive programs.
Importation of wild birds, whether for display or propagation is costly, difficult and stressful for the birds. It can negatively impact wild populations, by giving them market value, by changing population structure or reducing population numbers. By focusing our efforts on particular taxa and improving our programs, we can reduce the number of birds taken from the wild. This includes using significant importation to found new programs or improve established ones.

4. Improve management and propagation techniques. Replicable and predictable techniques for management and propagation are necessary, to ensure availability of birds for our collections and for applications to conservation in the field.

5. Document successful husbandry protocols, starting with those species in active management programs. Documentation is important, if programs are to progress and build on one another. We will start by documenting priority species, then expand to related species, looking for common techniques and trying to identify species specific differences.

6. Develop communication resources to ensure wide availability of information relating to all aspects of TAG taxa, both *ex situ* and *in situ.* We need to take advantage of new communication technology, while remaining aware that these are not available to all that need the information we wish to disseminate. The TAG has an active listserv, with members from five continents, as well as an excellent website: http://www.coraciiformestag.com/

7. Increase cooperative interaction with zoos in other regions, as well as the private sector. The Coraciiformes comprises taxa from all continents except Antarctica. Zoos in every region are beginning to develop active programs, often for species held in low numbers. By collaborating, we can increase the size of managed groups, pool information and reduce duplication of effort.

8. Identify and support field projects that contribute to conservation of wild hornbill populations.

**Space**

A space survey was done electronically, using Surveymonkey. The survey was sent to all 118 institutions with IRs to the TAG, via the TAG listserv. In addition, the survey was posted to the ASAG listserv, to inform other institutions of the programs they might become involved with. Responses were received from 143 institutions, including 108 of the 118 with institutional representatives to the TAG, for a response rate of 91.5%. The results are shown in table 2. The master data spreadsheet will be available to all program managers.

Table 2: Coraciiformes TAG Space Survey results
Responses from 143 institutions, including
108/118 with Institutional representatives to the TAG (91.5%)
Current population numbers are from studbooks.

| Taxon | Common Name | Current Population | Future Additions | Target Population |
|---|---|---|---|---|
| *Tockus erythrorynchus* | Red-billed Hornbill | 29.29 | 25.22.13 | 40.40 |
| *Bycanistes bucinator* | Trumpeter Hornbill | 17.19.7 | 3.7.1 | 30.30 |
| *Bycanistes brevis (DERP)* | Silvery-cheeked | 13.13.2 | 7.6.2 | na |
| *Aceros corrugatus* | Wrinkled Hornbill | 25.22.2 | 10.13.3 | 35.35 |
| *Aceros undulatus (DERP)* | Wreathed Hornbill | 13.13.0 | 3.3.1 | na |
| *Buceros bicornis* | Great Hornbill | 23.29.0 | 12.12.4 | 50.50 |
| *rhinoceros* | Rhinoceros Hornbill | 24.24.4 | 11.11.6 | 35.35 |
| *Bucorvus abyssinicus* | Abyssinian Ground-hornbill | 38.31.0 | 19.18.7 | 50.50 |
| *leadbeateri* | Southern Ground Hornbill | 49.55.0 | 15.14.16 | 63.63 |
| *Phoeniculus purpureus* | Green Woodhoopoe | 29.32.11 | 27.27.6 | 40.40 |
| *Dacelo novaeguinea* | Laughing Kookaburra | 100.96.7 | 36.34.20 | 100.100 |
| *Todiramphus c. cinnamomina* | Micronesian Kingfisher | 59.37.8 | 12.11.4 | 75.75 |
| *Momotus momota* | Blue-crowned Motmot | 69.68.9 | 33.28.7 | 75.75 |
| *Coracias cyanogaster* | Blue-bellied Roller | 56.54.3 | 25.28.14 | 63.63 |

While available space is important for all bird programs, space limitations for some species in Coraciiformes are generally less significant than lack of techniques for reliable propagation. Most non-hornbill species work well in community aviaries, making space issues fairly flexible. In addition, most of the taxa identified in this plan have distinct space and husbandry requirements and don't compete for space. For this reason, although the TAG was not able to meet as a group with the PMC, we feel that our target population sizes are valid together, as well as individually. The TAG will meet with the PMC before the next RCP. Table 3 lists current ISIS data for all species in the Coraciiformes.

The space survey also asked about interest in TAG 'phase in' species and whether institutions planned any imports of Coraciiform species in the next five years. Fifty-seven institutions indicated an interest in a program for the Common Hoopoe, and twenty in the Pied Kingfisher. Six institutions indicated that they were planning imports, two of Common Hoopoe, one of Lilac-breasted Roller, one of Puerto Rican Todies, one of a species of Ground Hornbill, and one of 'carmine bee-eaters; potentially white-throated kingfishers (smyrnensis), pygmy kingfisher, malachite kingfisher, Niau kingfisher (gertrudae - if captive rearing component becomes necessary).'

**Table 3: North American and Global ISIS population data for species in the Coraciiformes**

| *Genus* | *species* | Common name | AZA PROGRAM | ISIS N America | ISIS global |
|---|---|---|---|---|---|
| | | ROLLERS | | | |
| *Coracias* | *garrulus* | European Roller | No program | 4.4.2 | 16.20.5 |
| *Coracias* | *abyssinica* | Abyssinian Roller | No program | 0.10 | 0.10 |
| *Coracias* | *caudatus* | Lilac-breasted Roller | Phase out | 9.11.13 | 64.35.44 |
| *Coracias* | *spatulatus* | Racket-tailed Roller | No program | 13.11.10 | 13.11.10 |
| *Coracias* | *naevia* | Purple | No program | 0.5 | 7.11 |
| *Coracias* | *benghalensis* | Indian Roller | No program | 4.30 | 8.5.2 |
| *Coracias* | *temminckii* | Purple-winged | No program | | |
| *Coracias* | *cyanogaster* | Blue-bellied Roller | PMP | 53.57.6 | 74.67.20 |
| *Eurystomus* | *glaucurus* | Cinnamon | No program | 0.00 | 2.0.3 |
| *Eurystomus* | *gularis* | Blue-throated Roller | No program | | |
| *Eurystomus* | *orientalis* | Dollar Bird | No program | 6.8.3 | 10.9.3 |
| *Eurystomus* | *azureus* | Azure Roller | No program | | |
| *Brachypteracias* | *leptosomus* | Short-legged Ground Roller | No program | | |
| *Brachypteracias* | *squamiger* | Scaly Ground Roller | No program | | |
| *Atelornis* | *pittoides* | Pitta-like Ground roller | No program | | 1.3.1 |
| *Atelornis* | *crossleyi* | Rufous-headed ground roller | No program | | |
| *Uratelornis* | *chimaera* | Long-tailed Ground Roller | No program | | |
| *Leptosomus* | *discolor* | Cuckoo Roller | No program | | |
| | | MOTMOTS | | | |
| *Hylomanes* | *momotula* | Tody Motmot | No program | | |
| *Aspatha* | *gularis* | Blue-throated Motmot | No program | | |
| *Electron* | *platyrhynchum* | Broad-billed Motmot | No program | | |
| *Electron* | *carinatum* | Keel-billed Motmot | No program | | |

| | | | | | |
|---|---|---|---|---|---|
| *Eumomota* | *superciliosa* | Turquoise -browed Motmot | No program | | |
| *Baryphthengus* | *ruficapillus* | Rufous-capped Motmot | No program | | 0.0.1 |
| *Genus* | *species* | Common name | AZA PROGRAM | ISIS N America | ISIS global |
| *Baryphthengus* | *martii* | Rufous Motmot | No program | | |
| *Momotus* | *momota* | Blue-crowned | PMP | 56.49.20 | 64.64.22 |
| *Momotus* | *mexicanus* | Russet-crowned | No program | | |
| *Momotus* | *aequatorialis* | Highland | No program | | |
| | | TODIES | | | |
| *Todus* | *multicolor* | Cuban Tody | No program | | |
| *Todus* | *angustirostris* | Narrow-billed Tody | No program | | |
| *Todus* | *mexicanus* | Puerto Rican Tody | No program | | |
| *Todus* | *todus* | Jamaican Tody | No program | | |
| *Todus* | *subulatus* | Broad-billed | No program | | |
| | | KINGFISHERS | | | |
| *Alcedo* | *hercules* | Great Blue | No program | | |
| *Alcedo* | *atthis* | River | No program | | 1.1.1 |
| *Alcedo* | *semitorquata* | Half-collared | No program | | |
| *Alcedo* | *quadribrachys* | Shining Blue | No program | | |
| *Alcedo* | *meninting* | Blue-eared | No program | | |
| *Alcedo* | *azurea* | Azure | No program | | |
| *Alcedo* | *websteri* | Bismarck | No program | | |
| *Alcedo* | *cyanopecta* | Philippine Pectoral | No program | | |
| *Alcedo* | *argentata* | Silvery | No program | | |
| *Alcedo* | *cristata* | Malachite | No program | 0.1 | |
| *Alcedo* | *leucogaster* | White-bellied | No program | | |
| *Alcedo* | *coerulescens* | Caerulean | No program | | |
| *Alcedo* | *lepida* | Variable Dwarf | No program | | |
| *Alcedo* | *vintsiodes* | Madagascar Malachite | No program | | |
| *Alcedo* | *euryzona* | Blue-banded | No program | | |
| *Ceyx* | *erithacus* | Oriental Dwarf | No program | 0.00 | 0.0.1 |
| *Ceyx* | *melanurus* | Philippine Dwarf | No program | | |
| *Ceyx* | *fallax* | Celebes Dwarf | No program | | |
| *Ceyx* | *madagascariensis* | Madagascar Pygmy | No program | | |
| *Ceyx* | *pictus* | African Pygmy | No program | | |
| *Ceyx* | *lecontei* | African Dwarf | No program | | |
| *Lacedo* | *pulchella* | Banded | No program | | |
| *Dacelo* | *novaeguineae* | Laughing Kookaburra | PMP | 95.101.8 | 214.171.58 |
| *Dacelo* | *leachii* | Blue-winged Kookaburra | No program | 8.2.1 | 52.44.14 |
| *Dacelo* | *tyro* | Spangled Kookaburra | No program | | |
| *Dacelo* | *gaudichaud* | Rufous-bellied Kookaburra | No program | 0.1/1 | 0.1/1 |
| *Clytoceyx* | *rex* | Shovel-billed | No program | | |
| *Cittura* | *cyanotis* | Lilac-cheeked | No program | | |
| *Pelargopsis* | *amauroptera* | Brown-winged | No program | | |
| *Pelargopsis* | *capensis* | Stork-billed | No program | | |
| *Pelargopsis* | *melanorhyncha* | Black-billed | No program | | |
| *Halcyon* | *coromanda* | Ruddy Kingfisher | No program | | 0.0.3 |

| *Halcyon* | *badia* | Chocolate-backed | No program | | |
|---|---|---|---|---|---|
| *Halcyon* | *smyrnensis* | White-throated | No program | 4.6.2 | 5.6.14 |
| *Halcyon* | *pileata* | Black-capped | No program | 0.00 | 0.0.1 |
| *Genus* | *species* | Common name | AZA PROGRAM | ISIS N America | ISIS global |
| *Halcyon* | *cyanoventris* | Java | No program | | 0.0.2 |
| *Halcyon* | *leucocephala* | Grey-headed | No program | 5.0.2 | 6.0.2 |
| *Halcyon* | *senegalensis* | Woodland | No program | 2.00 | 2.10 |
| *Halcyon* | *senegaloides* | African Mangrove | No program | | |
| *Halcyon* | *malimbica* | Blue-breasted | No program | 14.15.1 | 15.17.6 |
| *Halcyon* | *albiventris* | Brown-hooded | No program | 1.2.3/2 | 1.2.3/2 |
| *Halcyon* | *chelicuti* | Striped | No program | | |
| *Todiramphus* | *chloris* | Collared | No program | 8.80 | 25.28.17 |
| *Todiramphus* | *c. cinnamomina* | Micronesian (Guam) | SSP | 54.39.4 | 54.39.4 |
| *Todiramphus* | *nigrocyanea* | Blue-black | No program | | |
| *Todiramphus* | *winchelli* | Rufous-lored | No program | | |
| *Todiramphus* | *diops* | Blue-and-White | No program | | |
| *Todiramphus* | *lazuli* | Lazuli | No program | | |
| *Todiramphus* | *macleayii* | Forest | No program | | 3.7.3 |
| *Todiramphus* | *albonotatus* | New Britain | No program | | |
| *Todiramphus* | *leucopygius* | Ultramarine | No program | | |
| *Todiramphus* | *farquhari* | Chestnut-bellied | No program | | |
| *Todiramphus* | *pyrrhopygius* | Red-backed | No program | | 2.10 |
| *Todiramphus* | *funebris* | Sombre | No program | | |
| *Todiramphus* | *chloris* | Mangrove | No program | | |
| *Todiramphus* | *saurophaga* | Beach | No program | | |
| *Todiramphus* | *australasia* | Cinnamon-banded | No program | | |
| *Todiramphus* | *sancta* | Sacred | No program | | 13.15.2 |
| *Todiramphus* | *veneratus* | Tahiti | No program | | |
| *Todiramphus* | *tutus* | Chattering | No program | | |
| *Caridonax* | *fulgidus* | White-rumped | No program | | |
| *Syma* | *torotoro* | Yellow-billed | No program | | |
| *Syma* | *megarhyncha* | Mountain | No program | | |
| *Melidora* | *macrorrhina* | Hook-billed | No program | | |
| *Actenoides* | *bougainvillei* | Moustached | No program | | |
| *Actenoides* | *concretus* | Rufous-collared | No program | | |
| *Actenoides* | *lindsayi* | Spotted | No program | | |
| *Actenoides* | *hombroni* | Blue-capped | No program | | |
| *Actenoides* | *monachus* | Green-backed | No program | | |
| *Actenoides* | *princeps* | Scaly-breasted | No program | | |
| *Tanysiptera* | *hydrocharis* | Aru Paradise | No program | | |
| *Tanysiptera* | *galatea* | Common Paradise | No program | | |
| *Tanysiptera* | *carolinae* | Numfor Paradise | No program | | |
| *Tanysiptera* | *nympha* | Rufous-breasted Paradise | No program | | |
| *Tanysiptera* | *danae* | Brown-headed Paradise | No program | | |
| *Tanysiptera* | *sylvia* | Buff-breasted | No program | | |
| *Tanysiptera* | *ellioti* | Kofiau Paradise | No program | | |
| *Tanysiptera* | *riedelii* | Biak Paradise | No program | | |
| *Megaceryle* | *maxima* | Giant | No program | | |

| *Megaceryle* | *lugubris* | Crested | No program | | 0.0.1 |
|---|---|---|---|---|---|
| *Megaceryle* | *alcyon* | Belted | No program | 0.0.1 | |
| *Megaceryle* | *torquata* | Ringed | No program | | |
| *Genus* | *species* | Common name | AZA PROGRAM | ISIS N America | ISIS global |
| *Chloroceryle* | *amazona* | Amazon | No program | | |
| *Chloroceryle* | *americana* | Green | No program | | |
| *Chloroceryle* | *inda* | Green-and-Rufous | No program | | |
| *Chloroceryle* | *aenea* | American Pygmy | No program | | |
| | | BEE-EATERS | | | |
| *Nyctyornis* | *amictus* | Red-bearded | No program | | |
| *Nyctyornis* | *athertoni* | Blue-bearded | No program | | |
| *Meropogon* | *forsteni* | Purple-bearded | No program | | |
| *Merops* | *gularis* | Black | No program | | |
| *Merops* | *muelleri* | Blue-headed | No program | | |
| *Merops* | *bulocki* | Red-throated | No program | 2.1.5 | 2.1.20 |
| *Merops* | *bullockoides* | White-fronted | Research | 18.15.1 | 20.22.98 |
| *Merops* | *pusillus* | Little | No program | 0.0 | 1.0.2/2 |
| *Merops* | *variegatus* | Blue-breasted | No program | | |
| *Merops* | *oreobates* | Cinnamon-chested | No program | | |
| *Merops* | *hirundinaeus* | Swallow-tailed | No program | | |
| *Merops* | *breweri* | Black-headed | No program | | |
| *Merops* | *revoilii* | Somali | No program | | |
| *Merops* | *albicollis* | White-throated | Research | 13.14.1 | 13.14.24 |
| *Merops* | *orientalis* | Little Green | No program | | |
| *Merops* | *boehmi* | Boehm's | No program | | |
| *Merops* | *viridis* | Blue-throated | No program | 0.0 | 0.0.1/1 |
| *Merops* | *persicus* | Blue-cheeked | No program | 0.0 | 0.0.3/1 |
| *Merops* | *superciliosus* | Olive | No program | | |
| *Merops* | *ornatus* | Rainbow | No program | 0.0 | 9.6.2 |
| *Merops* | *apiaster* | European | No program | 0.00 | 21.18.17 |
| *Merops* | *leschenaulti* | Bay-headed | No program | | |
| *Merops* | *malimbicus* | Rosy | No program | | |
| *Merops* | *nubicus* | Carmine | Research | 39.22.6 | 28.17.4 |
| | | HOOPOES | | | |
| *Upupa* | *epops* | Common Hoopoe | Phase In | 0.10 | 12.11.30 |
| | | WOODHOOPOES | | | |
| *Phoeniculus* | *purpureus* | Green Woodhoopoe | PMP | 28.29.16 | 38.37.46 |
| *Phoeniculus* | *castaneiceps* | Forest | No program | | |
| *Phoeniculus* | *bollei* | White-headed | No program | | |
| *Phoeniculus* | *somaliensis* | Black-billed | No program | | |
| *Phoeniculus* | *damarensis* | Violet | No program | | |
| *Rhinopomastus* | *cyanomelas* | Common Scimitarbill | No program | | |
| *Rhinopomastus* | *aterrimus* | Black Woodhoopoe | No program | | |
| *Rhinopomastus* | *minor* | Abyssinian Scimitarbill | No program | | |
| | | HORNBILLS | | | |
| *Ceratogymna* | *elata* | Yellow-casqued | No program | 1.20 | 1.20 |
| *Ceratogymna* | *atrata* | Black-casqued | No program | 5.30 | 17.17 |
| *Bycanistes* | *fistulator* | Piping | No program | 3.30 | 4.80 |

| *Bycanistes* | *bucinator* | Trumpeter | PMP | 20.19.9 | 48.46.17 |
|---|---|---|---|---|---|
| *Bycanistes* | *cylindricus* | Brown-cheeked | No program | 0.10 | 0.10 |
| *Bycanistes* | *subcylindricus* | Grey-cheeked | No program | 1.10 | 5.70 |
| *Genus* | *species* | Common name | AZA PROGRAM | ISIS N America | ISIS global |
| *Bycanistes* | *brevis* | Silvery-cheeked | No program | 13.14.12 | 37.41.7 |
| *Anthracoceros* | *coronatus* | Indian Pied | No program | 0.00 | 2.4.1 |
| *Anthracoceros* | *albirostris* | Oriental Pied | No program | 3.4.2 | 13.24.20 |
| *Anthracoceros* | *malayanus* | Black | No program | 1.10 | 16.17.4 |
| *Anthracoceros* | *montani* | Sulu | No program | | |
| *Anthracoceros* | *marchei* | Palawan | No program | | |
| *Anorrhinus* | *tickelli* | Tickell's Brown | No program | | |
| *Anorrhinus* | *austeni* | Austen's Brown | No program | | |
| *Anorrhinus* | *galeritus* | Bushy-crested | No program | | 1.2.1 |
| *Penelopides* | *panini* | Visayan Tarictic | No program | | 10.9.0 |
| *Penelopides* | *exarhatus* | Sulawesi Tarictic | No program | 5.6.2 | 7.9.2 |
| *Penelopides* | *manillae* | Luzon Tarictic | No program | | |
| *Penelopides* | *affinis* | Mindanao Tarictic | No program | | |
| *Penelopides* | *mindorensis* | Mindoro Tarictic | No program | | |
| *Berenicornis* | *comatus* | White-Crowned | No program | 2.3.1/3 | 3.7.1/5 |
| *Aceros* | *nipalensis* | Rufous-necked | No program | | |
| *Aceros* | *corrugatus* | Wrinkled | PMP | 27.22.0 | 44.38.9 |
| *Aceros* | *leucocephalus* | Writhed | No program | | 3.40 |
| *Aceros* | *waldeni* | Rufous-headed | No program | | |
| *Aceros* | *cassidix* | Knobbed | no program | 9.7.1 | 10.16 |
| *Rhyticeros* | *narcondami* | Narcondam | No program | | |
| *Rhyticeros* | *undulatus* | Wreathed | DERP | 11.11.2 | 36.35.8 |
| *Rhyticeros* | *subruficollis* | Plain-pouched | No program | 2.1.0/2 | 2.1.0/2 |
| *Rhyticeros* | *everetti* | Sumba | No program | | |
| *Rhyticeros* | *plicatus* | Papuan | No program | 4.20 | 35.30.7 |
| *Buceros* | *rhinoceros* | Rhinoceros | SSP | 20.24.4 | 40.49.9 |
| *Buceros* | *bicornis* | Great | SSP | 19.19.2 | 62.58.13 |
| *Rhinoplax* | *vigil* | Helmeted | No program | | |
| *Tockus* | *alboterminatus* | Crowned | No program | 3.30 | 14.11.5 |
| *Tockus* | *bradfieldi* | Bradfield's | No program | | |
| *Tockus* | *fasciatus* | African Pied | No program | 1.0.0 | 1.0.0 |
| *Tockus* | *hemprichii* | Hemprich's | No program | | |
| *Tockus* | *pallidirostris* | Pale-billed | No program | | |
| *Tockus* | *nasutus* | African Grey | No program | 2.20 | 12.12.15 |
| *Tockus* | *monteiri* | Monteiro's | No program | | |
| *Tockus* | *erythrorynchus* | Red-billed | PMP | 25.17.4 | 43.34.17 |
| *Tockus* | *leucomelas* | S. Yellow-billed | No program | 1.20 | 4.6.2 |
| *Tockus* | *flavirostris* | E. Yellow-billed | No program | 14.8.1 | 22.12.1 |
| *Tockus* | *deckeni* | Von der Decken's | No program | 14.12.4 | 49.46.16 |
| *Tockus* | *hartlaubi* | Black Dwarf-hornbill | No program | | |
| *Tockus* | *camurus* | Red-billed Dwarf-hornbill | No program | | |
| *Tropicranus* | *albocristatus* | Long-tailed | No program | 0.0.1 | 0.0.1/1 |
| *Ocyceros* | *griseus* | Malabar Grey | No program | | |
| *Ocyceros* | *gingalensis* | Sri Lankan Grey | No program | | |

| | | | | | |
|---|---|---|---|---|---|
| *Ocyceros* | *birostris* | Indian Grey | No program | | |
| | | | | | |
| *Genus* | *species* | Common name | AZA PROGRAM | ISIS N America | ISIS global |
| *Bucorvus* | *abyssinicus* | Abyssinian Ground-hornbill | PMP | 34.29.1 | 64.66.5 |
| *Bucorvus* | *leadbeateri* | Southern Ground-hornbill | PMP | 36.40.5 | 125.122.11 |

**Criteria Used in Evaluation of Taxa for Management Programs**

Each species, and in one case sub-species, in the order Coraciiformes has been separately considered by the TAG, for each of three Regional Collection Plans. The criteria described below were used to establish program priorities, also described below, for AZA institutions. In some cases, criteria are objective, for example, captive population size. In others, like husbandry, criteria are subjective. The same criterion may apply in different ways to different management programs. For example, a species that is difficult to breed might be a poor selection for an 'exhibit/classroom program,' but that might be the reason for identifying that species for intensive management in an SSP. There are no mathematical formulae that can create a collection plan from these criteria – the brains of the collection planners are essential.

The first Coraciiformes TAG RCP was approved in 1998 – it was actually the first RCP ever approved. That plan identified 16 species as candidates for AZA programs, including several existing programs. In several cases, multiple species in one genus were identified, with the understanding that further evaluation would probably result in final selection of only one species. The second Coraciiformes RCP was approved in 2002. At that time, all recommended programs had been established, with the exception of the two 'phase in' species and the Indian and Oriental Pied Hornbills (genus Anthrococeros). A review of those hornbill populations proved them to be small and aging, and the TAG voted to eliminate those species from the list of recommended programs. Blue-bellied Rollers had been successfully established as a PMP, replacing the more aggressive Lilac-breasted Roller, now recommended as 'phase out'. In the third RCP, most programs have been reduced to one species per genus. In each case, the species selected had the better genetic base and age structure. More details will be provided in the program narrations.

**Criteria:**

1: Status in the wild: IUCN/BirdLife, CAMP and other ratings
Rare and threatened species are high priority for captive management actions that can support wild populations. This may include creation of a captive population, but might also consist of research in support of *in situ* efforts.

2. Documented captive population size in U.S.: data from studbooks, space surveys and ISIS

3. Documented captive population size outside U.S.: data from studbooks and ISIS

4. Availability: Probability that there are legitimate sources for acquisition of birds in the private sector, non-U.S. zoos, and dealers or by collection of wild specimens.

5. Potential for links with field programs: Species with active or probable field projects will be preferred, if all else is equal.

6. Educational value/ special exhibit value: Species may be important because of appearance, natural history, links with cultural and ethnic groups. A primary function of zoo collections is to stimulate guests to conserve wildlife and it is important to create long term populations of good exhibit taxa.

7. Flagship potential: Species may serve as representatives of entire ecosystems, for Conservation education, legislation, habitat protection

8. Demonstrated interest by zoos and others: In many cases, one of many similar species may have become established in collections through historical accident. These should be retained, unless there is a strong reason for their replacement.

9. Possibility of use as research model: Common species may be valuable as surrogates for developing management and conservation techniques, answering medical and dietary questions and acting as foci for PR, fundraising etc. These actions might eventually justify establishing new captive programs, or might have application to conservation of species in the wild.

10. Funding potential
Some species, because of special circumstances, may be better subjects for fundraising than similar species -- the Micronesian Kingfisher is an example.

**Program definitions**

Because of resource limitations, not all specimens in any given collection will be part of active management programs. Non-program taxa may still be important to exhibition and education functions of zoos, and the category ' exhibit only ' should not be confused with 'phase out', assigned to birds which are taking space needed for an active program. Non-managed species comprise that proportion of every collection for which it is impossible to provide more than good housing, care and support.

**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 IRs.

**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.

**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.

**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.

**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.

**Not Recommended**: Taxon not currently in AZA institutions and that the TAG recommends NOT be brought into AZA collections.

## Decision Tree

Although holding space does not tend to be an issue for taxa in this TAG, the number of endangered, interesting and available Coraciiform taxa far exceeds the limits of space and manpower resources available for managed programs. Different kinds of programs require different levels of resources and activity, however. In order to optimize our ability to achieve the goals set for the TAG, we used the following Decision Tree to assign taxa to program categories. As time inevitably brings change, these assignments may also change over time. The decision tree is diagramed in figure 1. Table 4 shows program designation assessment summaries for all taxa recommended for programs. While there have been some changes since the first RCP, mostly lessened availability of some species, no program designations have changed. Table 5 lists managers and status of each managed program in the Coraciiformes TAG. Table 6 summarizes management recommendations, functions and PMC advisors.

(1). Is species currently kept by AZA institutions?

If yes, go to (2).

If no, category is

a) *'in situ'* if there is currently an *in situ* project or good potential for an effective conservation project or

b) 'phase in' if there is justification and potential to acquire the taxon, or

c) 'not recommended'

(2) Is there an existing program for this species?

If no, go to (3).

If yes, does the current recommendation still make sense in light of current program definitions and the status of the captive population?

a) If yes, recommend continuation;

b) if no, start tree over and revise category.

(3) Is there a nucleus population of at least 10 pairs in AZA institutions, or a solid plan to acquire more birds?

If yes, go to (4).

If no, recommend the species for

a) 'DERP' if dedicated exhibits/programs exist, species is to be used as a model or is of special interest

b) 'phase out', if space is needed for a species with higher priority

(4) Is an AZA program justified by potential for a captive population to contribute to conservation of the wild population, need for population management to maintain a good exhibit species, taxonomic uniqueness, or educational value?

If yes, go to (5).

If no, recommend for

a) 'DERP' if dedicated exhibits/programs exist, species is to be used as a model or is of special interest

b) 'phase out', if space is needed for a species with higher priority

(5) If there is justification for creating a program, use to program designation assessment to assign taxon to

**a)** PMP

**b)** SSP

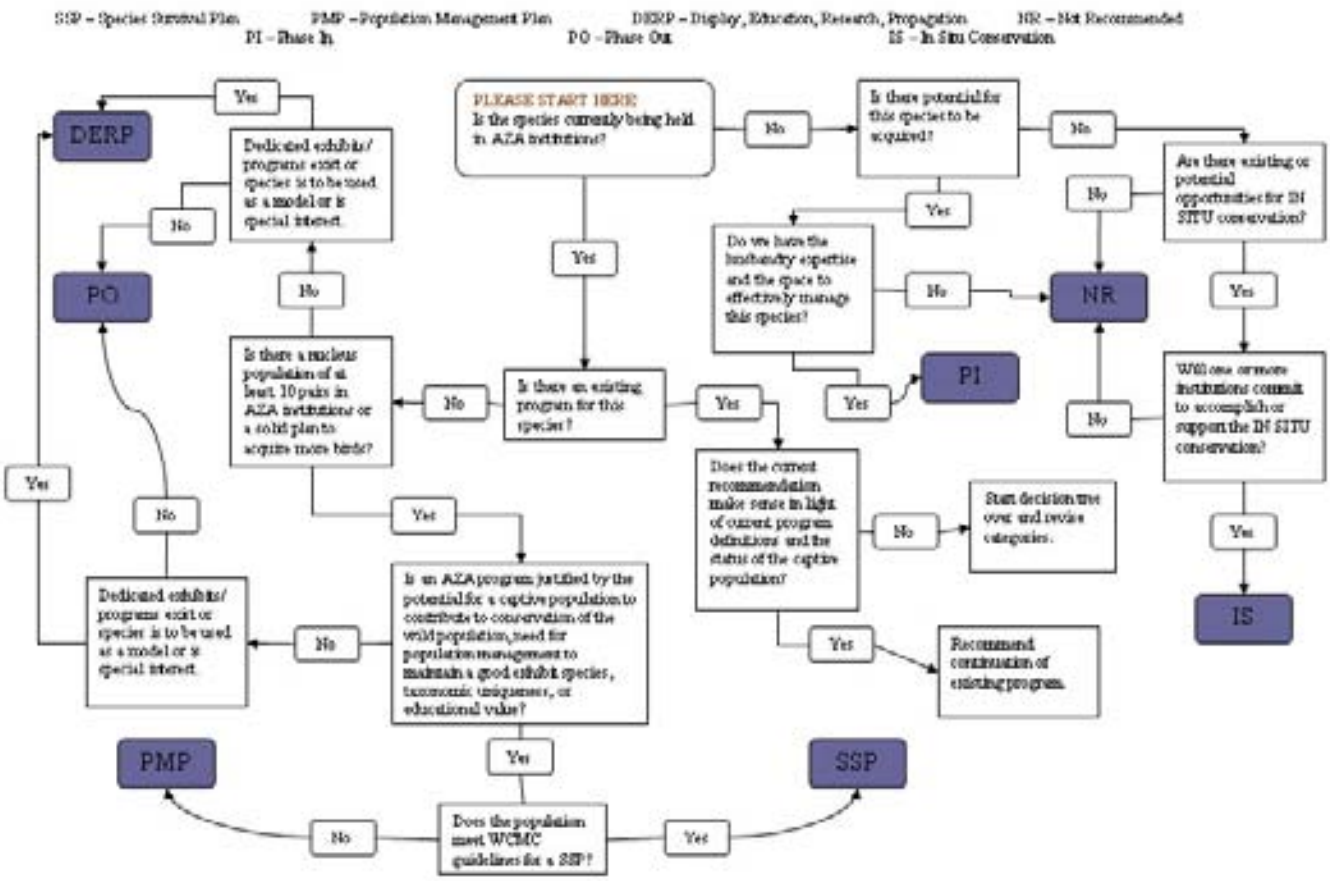


**Figure 1: Coraciiformes TAG decision tree**

## Table 4: Program designation assessment details for Coraciiformes taxa

| | Red-billed hornbill | Trumpeter hornbill | Wrinkled hornbill | Great hornbill | Rhino hornbill |
|---|---|---|---|---|---|
| **Criteria** | | | | | |
| Availability within AZA | low | low | low | low | moderate |
| Availability outside AZA | moderate | low | low | moderate | moderate |
| Extinction risk without management ( AZA) | high | moderate | moderate | high | moderate |
| Extinction risk with management ( AZA) | low | low | low | high | moderate |
| Demand within AZA | moderate | moderate | moderate | low | low |
| Institutional commitment | moderate | moderate | moderate | moderate | moderate |
| Ease of breeding | moderate | moderate | moderate | low | moderate |
| Extinction risk (wild) | LC | LC | LC | NT | NT |
| Acquisition costs (outside AZA) | low+ | high | high | high | high |
| Program operating costs | low | low | low | moderate | moderate |
| International program | no | no | no | yes | yes |
| Link to wild conservation | no | no | indirect | indirect | indirect |
| N American government program | no | no | no | no | no |
| Management recommendation | PMP | PMP | PMP | PMP | SSP |

| **Criteria** | Abyssinian ground hornbill | Southern ground hornbill | Green woodhoopoe | Laughing kookaburra |
|---|---|---|---|---|
| Availability within AZA | low | moderate | low | high |
| Availability outside AZA | low | low | low | high |
| Extinction risk without management ( AZA) | high | moderate | moderate | low |
| Extinction risk with management ( AZA) | low | low | low | low |
| Demand within AZA | moderate | moderate | moderate | moderate |
| Institutional commitment | high | high | moderate | high |
| Ease of breeding | moderate | moderate | high | moderate |
| Extinction risk (wild) | LC | LC | LC | LC |
| Acquisition costs (outside AZA) | high | high | high | low |
| Program operating costs | low | low | low | low |
| International program | no | yes | no | moderate |
| Link to wild conservation | no | indirect | no | indirect |
| N American government program | no | no | no | low |
| Management recommendation | PMP | PMP | PMP | PMP |

## Table 4, continued

| Criteria | Micronesian kingfisher | Blue-crowned Motmot | Blue-bellied Roller |
|---|---|---|---|
| Availability within AZA | low | high | high |
| Availability outside AZA | low | moderate | moderate |
| Extinction risk without management ( AZA) | high | moderate | moderate |
| Extinction risk with management ( AZA) | moderate | low | low |
| Demand within AZA | moderate | moderate | moderate |
| Institutional commitment | high | moderate | moderate |
| Ease of breeding | moderate | moderate | moderate |
| Extinction risk (wild) | extinct | LC | LC |
| Acquisition costs (outside AZA) | n/a | high | moderate |
| Program operating costs | moderate | low | low |
| International program | no | no | no |
| Link to wild conservation | direct | no | no |
| N American government program | yes | no | no |
| Management recommendation | SSP | PMP | PMP |

**Table 5: Coraciiformes TAG programs and program status; see page 3 for Program Manager contact information**

| Common Name | Program | date first approved | Program leader | Date leadership assumed | Date latest studbook | Date latest masterplan |
|---|---|---|---|---|---|---|
| Red-billed Hornbill | PMP | Sep-99 | Kehl | July-05 | Jan-08 | Feb-08 |
| Trumpeter Hornbill | PMP | Sep-99 | Dupree | Oct-02 | Nov-07 | Apr-08 |
| Wrinkled Hornbill | PMP | Feb 99 | Kowalczyk | Feb-99 | Dec-08 | Dec-08 |
| Great Hornbill | SSP | June-89 | Myers | May-02 | | Apr-08 |
| | studbook | | Schoen | Jun-03 | Feb-07 | |
| Rhinoceros Hornbill | SSP | | Myers | May-02 | | Apr-08 |
| | studbook | | Schoen | Jun-03 | Feb-08 | |
| Abyssinian Ground-hornbill | PMP | June-89 | Sweeney | Apr-08 | Dec-05 | Jan-06 |
| Southern Ground Hornbill | PMP | June-89 | Sweeney | Apr-08 | Jun-07 | Apr-08 |
| | | | | | | |
| Green Woodhoopoe | PMP | Dec-08 | Graham | Dec-08 | Sep-02 | Feb-06 |
| | | | | | | |
| Laughing Kookaburra | PMP | Sep-90 | Myers | Sep-90 | Dec-08 | Apr-08 |
| Micronesian Kingfisher | SSP | Jan-86 | Bahner | Jun-05 | Dec-06 | Oct-08 |
| | studbook | | | Jan-86 | | |
| Blue-crowned Motmot | PMP | Sep99 | Graham | Sep-99 | Apr-08 | Apr-06 |
| | | | | | | |
| Blue-bellied Roller | PMP | July-99 | Snyder | Jul-99 | Dec-06 | Apr-07 |

## Table 6: Coraciiformes TAG programs, program functions and PMC advisors

Management recommendations

| Common Name | Program | Function | Current Population | Population Target | PMC advisor |
|---|---|---|---|---|---|
| Red-billed Hornbill | PMP | Education | 29.29.0 | 40.40 | Lynch |
| Trumpeter Hornbill | PMP | Education | 17.19.7 | 25.25 | Bier |
| Silvery-cheeked | DERP | Education | 13.13.2 | na | |
| Wrinkled Hornbill | PMP | Education | 25.22.2 | 35.35 | Lynch |
| Wreathed Hornbill | DERP | Education | 13.13.0 | na | |
| Great Hornbill | SSP | Conservation | 23.29.0 | 50.50 | Lynch |
| Rhinoceros Hornbill | SSP | Conservation | 24.24.4 | 35.35 | Lynch |
| Abyssinian Ground-hornbill | PMP | Education | 38.31.0 | 50.50 | Long |
| Southern Ground Hornbill | PMP | Education | 49.55.0 | 63.63 | Long |
| Green Woodhoopoe | PMP | Education | 29.32.11 | 40.40 | Lynch |
| Laughing Kookaburra | PMP | Education | 100.96.7 | 100.100 | Lynch |
| Micronesian Kingfisher | SSP | Conservation | 59.37.8 | 75.75 | Earnhardt |
| Blue-crowned Motmot | PMP | Education | 69.68.9 | 75.75 | Christman |
| Blue-bellied Roller | PMP | Education | 56.54.3 | 63.63 | Lynch |

## Program narratives

Coraciidae (Rollers) 12 species, one program

| *Coracias cyanogaster*, Blue-bellied Roller | PMP | Current Population | Target |
|---|---|---|---|
| | | 56.54.3 | 63.63 |

Program Coordinator: Tim Snyder, Brookfield Zoo
Population targets set in consultation with the PMC.
In 2008, the TAG voted to increase the target population for the Blue-bellied Roller to 126.

Rollers are an extremely popular exhibit group, generally common in the wild. The Lilac Breasted Roller *Coracias caudata,* was the first species approved for an AZA studbook on the basis of its exhibit value alone. However, this bird may be more aggressive than others in its family, established more by historical accident than design. In 1998, at the TAG meeting to produce the RCP, we agreed to investigate the possibility of developing programs for two or more other species, at least one African form and one Asian form. Until then, the Lilac Breasted Roller would be the recommended species, managed as a PMP, to be phased out when new species were established.

Tim Snyder, Lilac Breasted Roller studbookkeeper, investigated the availability of other species and the Blue-bellied Roller was approved as a PMP in 1999 and the Lilac-breasted is being phased out. No Asian rollers have become available.

*Brachypteraciidae*: Ground Rollers -- 6 species, no programs

These poorly known Madagascar endemics are unrepresented in ISIS zoo collections and unlikely to become available. All are rare or vulnerable. No programs recommended.

*Leptosomidae:* Cuckoo Roller -- one species, no programs

Endemic to Madagascar and the Comoro Islands. Not in collections and unlikely to become available. No programs recommended.

Momotidae: Motmots -- 10 species, one program

| Species | Program Category | Current Population | Target Population |
|---|---|---|---|
| *Momotus momota* | PMP | 63.63.9 | 75.75 |

Program Coordinator: Kevin Graham, Disney's Animal Kingdom

The Blue-crowned Motmot studbook is current through 1 September 2008 and was last published on 21 Jan 2008. Another update is slated to be published in March 2009. The PMP was last completed and published on 25 February 2008 and another update will be distributed in March 2009. Both the studbook and the PMP are available on the AZA website. The target population is set based on the most recent contacts with IR's and their expectations for holding capacity. Additional institutions will continue to be brought into the management plan when possible to increase holding capacity and maximum population numbers.

The importations of wild-caught birds from Peru and Venezuela in the late 90's and early 2000's along with improvements in husbandry practices has led to a consistent increase in the population totals in AZA facilities. Through almost a decade of management plans, the mean kinship and inbreeding coefficient of the population as a whole has decreased significantly. At this point, the population is projected to retain 90% of the original gene diversity for a period of 18 years, an increase of 14 years over the original tabulation in the first management plan of 2000. At this time, the population is projected to retain 73% of the original gene diversity over a period of 100 years, still below the goal of 90% for 100 years but a vast improvement over the original projection of 41% from 2000. These numbers are based on the expectation that no new potential founders will be incorporated into the population at any point during the 100 years even though motmots are common and are still being imported on an infrequent basis.

Late in 2008, a group of approximately ten pairs of wild-caught birds were brought into the country from Peru by an importer. Half of these birds were purchased by a private aviculturist and the remaining birds were retained by the importer. The private aviculturist and the importer have expressed a willingness to sell birds to zoos, so efforts are being made to bring as many of these genetically valuable birds into the managed population as possible. Also, initial conversations have begun with John Ellis of London Zoo and Jo Gregson of Paignton Zoo to investigate the possibility of breeding sufficient birds in the AZA pairings to send a medium sized group to EAZA to supplement their small and unbalanced population. Since breeding in U.S. institutions has been purposely restricted in recent years, numbers of birds could potentially be produced that would be sufficient to provide a valuable exportation to the EAZA population.

*Todidae:* Todies -- 5 species, no programs

Todies are delicate animals, seldom maintained in captivity and difficult to obtain. There is no conservation justification for developing programs for Todies at this time.

*Alcedinidae*: Kingfishers 87 species, three programs

| Taxon | Program category | Current Population | Target |
|---|---|---|---|
| *Ceryl rudis* | Phase In | 0.0 | 20.20 |

A review of global ISIS data for Kingfishers shows no Cerylidae in collections, small numbers of one species in the Alcedinidae and several small to medium populations in the genera Dacelo and Halcyon. The most likely explanation for this is that the Dacelonids are predators of small ground animals, easier to transfer to artificial diets than the fish feeding Cerylidae and the insect and fish eating Alcedinidae. The TAG agreed that it would be valuable to develop management protocols for a non-Dacelonid Kingfisher and the Pied Kingfisher (*Ceryl rudis*), a common species with an enormous range, was identified as a potential. Contact was made with the Entebbe Zoo, in Uganda, where Pied Kingfishers nest on the grounds. A keeper from Entebbe visited several US zoos, and Marcia Arland, from the Bronx Zoo, visited Entebbe. The program has stalled because facilities for the program in US zoos could not be identified but the TAG voted to continue to pursue this objective. Contact Chris Sheppard, the TAG chair, if you are interested in participating in this program.

| Species | Program Category | Current Population | Target Population |
|---|---|---|---|
| *Dacelo novaeguinea* | PMP | 100.96.7 | 100.100 |

Program Coordinator Mark Myers, Woodland Park
Population targets set in consultation with the PMC.

The North American Kookaburra population was founded in 1895 and relied on importation of wild specimens until captive breeding became common in the 1960's. The population has grown steadily since then. This program was established in 1990.

Birds of unknown parentage in favor of birds bred in the PMP will take several years. This species is popular because of its 'laughing' calls.

| Species | Program Category | Current Population | Target Population |
|---|---|---|---|
| *Halcyon c. cinnamomina* | SSP | 59.37.8 | see text below |

Coordinator: Beth Bahner Philadelphia Zoo
Population targets set in consultation with the PMC.

The Guam Micronesian kingfisher first arrived in mainland zoos in 1984 as part of the Guam Bird Rescue Project, initiated in 1983 to assist Guam with devastating losses to its avifauna as a result of predation by the introduced brown tree snake. Beth Bahner established the studbook in 1986 and in 1988, Larry Shelton was appointed Species Coordinator. Beth Bahner assumed the position of Species Coordinator in 1990. The population has faced numerous challenges, most significant being high mortality in parent-reared chicks and young adult birds. Starting with a base of 29 wild caught birds, 17 of which are founders, the population grew steadily to a high of 65 birds in 1991 before experiencing a major crash. For the past 10 years the population has maintained a perverse balance between hatches and deaths, preventing significant growth. In 2001, the population again reached 65 but high mortality in 2002 caused the population to drop below 60 again. There are currently 104 birds. Three males were sent to Guam DAWR in 2003 and females in 2008. The intent of this program is to produce enough birds to sustain a reintroduction program on Guam. With that goal in mind, no realistic target population has been established.

Meropidae: Bee-eaters 24 species, no programs

Until recently, Bee-eaters have been uncommon in collections; as aerial insectivores, they are difficult to accustom to a captive diet. In the last 20 years, however, their numbers have increased and zoos, both in the US and in Europe, have begun to solve the problems inherent in their management. As brightly colored, colonial birds with open habits, their potential for exhibit/education is high, although no forms are endangered. Three species, *Merops nubicus* (Carmine), *M. albicollis* (White-throated) and *M. bulloc*koides (White-fronted) are most common in AZA zoos. The White-throated Bee-eater could soon be considered for a PMP. At this point, the emphasis is on learning Bee-eater aviculture. Because the family is of special interest, Marcia Arland, Bronx Zoo, and Martin Vince, Riverbanks Zoo, have agreed to identify and disseminate information as it develops. Information is also posted on the TAG website.

*Upupidae:* Common Hoopoe One species, one program

| Taxon | Program category |
|---|---|
| *Upupa epops* | Phase in |

The Common Hoopoe is an extremely desirable exhibit bird, now in low numbers in U.S. collections. Because of high interest and space available for at least 100 birds, it was designated for a proposed new program in the first edition of the RCP. A group of birds was scheduled to arrive in fall of 2003 but this fell through because of logistical and health problems of the exporter. The TAG continues to pursue this program. Contact Martin Vince for more information.

*Phoeniculidae*: Woodhoopoes and Scimitar-bills: 8 species, one program

| Taxon | Program category | Existing Population | Target Population |
|---|---|---|---|
| *Phoeniculus purpureus* | PMP | 29.32.11 | 40.40 |

Program Manager: Kevin Graham, Disney's Animal Kingdom

Population targets set in consultation with the PMC

The Green Woodhoopoe, *Phoeniculus purpureus*, is a good exhibit species with an interesting natural history. It is not rare, but management is important due to excessive inbreeding, because of low founder numbers. Because the birds are hole nesters, with an extreme curiosity in their surroundings, escape occurrence is a significant concern to the population. Roughly 8-10% of the historical captive population has escaped from zoological institutions, showing a need for greater care in choosing or building enclosures.

Over the past two decades, population annual growth rates attributed to captive hatches have varied from year to year but the population has exhibited an overall trend of increase despite a marked decrease in the population in the late 80s and early 90s. Since 1999 institutions have maintained the highest living captive population, staying at about 50 birds. Of these, most are offspring from a very small number of breeders. Captive Green Woodhoopoes have lived to their late-teens. They have not been observed to reproduce beyond the ages of ten and seven years for males and females respectively, thus exhibiting a relatively long period of reproductive senescence.

The program was without a manager for about four years, and the new coordinator has just been approved.

*Bucerotidae:* Hornbills 53 species, six programs

Among the Coraciiformes, the Hornbills are most commonly found in collections and include the most rare and endangered forms. In some taxonomies, they are considered a separate order. Their unusual nesting habits and the fact that many species are large and spectacular have made them of special interest. However, they do not breed reliably and have small clutch sizes. Developing techniques for improving reproduction and husbandry is a high priority. In the past, the TAG has supported attendance by range country field researchers at the International Hornbill Conference in South Africa in 2006 and will provide similar support for the International Hornbill Conference in Singapore in 2009. In addition, TAG institutions, especially Woodland Park and San Diego, have supported field conservation in Thailand, through the 'Adopt a Hornbill Nest' program. Unfortunately, although we now have a large collection of Buceros tail feathers, we no longer have a partner in either Malaysia or Indonesia to distribute them to Dyak tribes. We continue to look for one, however.

| Taxon | Program category | Current Population | Target Population |
|---|---|---|---|
| *Aceros corrugatus* | PMP | 2.22.0 | 35.35 |
| *Aceros undulatus* | DERP | 13.13.0 | na |

Program Manager: Eric Kowalczyk, Woodland Park
Population targets set in consultation with the PMC

Wrinkled Hornbill photo by Dennis Dow

The original charge for this program was to evaluate AZA populations of *Aceros corrugatus, Aceros cassidix* and *Rhyticeros undulatus,* determine how many species we could realistically work with and make recommendations for program categories. Space limitations restrict the program to one species. *Aceros corrugatus,* the Wrinkled Hornbill. The population of *Aceros undulatus* is small and competes with *A. corrugatus.* Some institutions continue to breed this species and some to display both Aceros species.

| Taxon | Program category | Current population | Target population |
|---|---|---|---|
| *Buceros bicornis* | SSP | 23.29 | 50.50 |
| | (may be recommended as PMP) | | |
| *Buceros rhinoceros* | SSP | 24.24.4 | 35.35 |

Program Managers: Mark Myers, Woodland Park, SSP coordinator;
Lee Schoen, Houston, studbookkeeper.
Populations targets set in consultation with the PMC.

Mark Myers took over as program chair in 2002. Lee Schoen became studbookkeeper in early 2003. Developing reliable avicultural techniques is a priority, as well as supporting programs in the field. Recent work has provided information on mating behavior, nutrition and physiology. However, breeding remains sporadic and increasing the rate of reproduction is a primary goal. The population of *Buceros bicornis*, especially, comprises aging animals with little reproduction and increasing mortality. In contrast, several new, young pairs of *B rhinoceros* are expected to begin breeding soon. Coordination with EAZA programs will be important for long term maintenance of these populations.

| Taxon | Program category | Current Population | Target Population |
|---|---|---|---|
| *Tocus erythrorynchus* | PMP | 29.29 | 40.40 |

Program Manager: Nicole Kehl, Lincoln Park Zoo
Population targets set in consultation with the PMC
There is interest in this species, but reproduction has been slow. The presence of new birds in the private sector may pose a good chance of revitalizing the population. The program manager is focusing on ensuring that husbandry practices are distributed to all institutions in the PMP.

| Taxon | Program category | Current population. | Target |
|---|---|---|---|
| *Bucorvus ledbeateri* | PMP | 49.55 | 63.63 |
| *Bucorvus abyssinicus* | PMP | 38.31.0 | 50.50 |

Program Manager: Roger Sweeney

Both species of Ground Hornbills are good exhibit birds and work on wild biology, captive husbandry and release are taking place in South Africa. Roger Sweeney has recently been approved as program manager. Challenges with these species are genetically important birds in education programs, birds exhibited in hoof-stock yards without facilities for breeding, and some elderly, yet unrepresented founders.

| Taxon | Program category | Current population | Target |
|---|---|---|---|
| *Bycanistes bucinator* | PMP | 17.19.7 | 30.30 |
| *Bycanistes brevis* | DERP | 13.13.2 | n/a |

Program Manager, Cindy Dupree, Central Florida Zoo
Originally both the Silvery-cheeked Hornbill and Trumpeter Hornbill were being considered for the PMP. After researching and consultation with the PMC the Trumpeter Hornbill was the best candidate and was chosen for the PMP in 2008. It was concluded that the population of Silvery-cheeked Hornbills was likely to phase itself out, unless new birds become available. The population is small, with little reproduction. However, this is an attractive species and the TAG will maintain the program as a DERP, while the option of acquiring new birds is pursued.

## REFERENCES

De Schauensee, Rodolphe Meyer, 1970. A Guide to the Birds of South America. Livingston Publishing Co., Wynnewood, PA, for The Academy of Natural Sciences of Philadelphia.

del Hoyo, J., Elliott, A. and Sargatal, J. eds, 2001 Handbook of Birds of the World, vol. 6, Mousebirds to Hornbills. Lynx Editions, Barcelona

Fry, C. Hilary, Kathie Fry and Alan Harris, 1992. Kingfishers, Bee-eaters and Rollers. Princeton University Press, Princeton, NJ.

Fry, C. Hilary, Stuart Keith and Emil K Urban, 1988. The Birds of Africa, volume III. Academic Press, NY.

Kemp, Alan, 1995. The Hornbills. Oxford University Press, New York.

Langrand, Olivier, 1990. Guide to the Birds of Madagascar. Yale University Press, New Haven.