

**AZA Piciformes Taxon Advisory Group
Regional Collection Plan
2nd Edition**

2009



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**PICIFORMES TAXON ADVISORY GROUP
REGIONAL COLLECTION PLAN
2009 – 2012**

INTRODUCTION

This Regional Collection Plan (RCP) represents the second edition of the Piciformes Taxon Advisory Group's RCP and considers management of Piciformes species in North American AZA accredited institutions through the end of 2012. The first edition was approved in 2003. This RCP includes a list of taxa recommended for management in AZA zoos and aquariums, the level at which those taxa should be managed, detailed explanations for how those recommendations were developed, and an evaluation of how much space should be dedicated to each recommended taxon.

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TAG MISSION STATEMENT AND GOALS

The mission of the Piciformes Taxon Advisory Group (TAG) is to provide leadership for the captive management of Piciformes in order to maintain healthy and sustainable populations and to support the conservation of relevant species and their habitat.

The TAG will strive to fulfill this mission by pursuing the following goals:

- Publish an AZA approved Regional Collection Plan.
- Promote conservation concerns and conservation action to member institutions.
- Achieve excellence in Piciformes husbandry through the production of Animal Care Manuals: Toucan (in progress), Aracaris/Toucanets, Barbets (in progress), and Woodpeckers.
- Continue to support the Nashville Zoo in its maintenance and development of the Piciformes TAG website: www.nashvillezoo.org/piciformes/piciformes_start.htm
- Facilitate the work of AZA studbook keepers, PMP managers, and SSP coordinators for Piciformes.
- Function as the principle liaison with other regional specialty groups concerned with Piciformes.
- Maintain the Piciformes TAG and Toucan AZA listserves: Piciformes@lists.AZA.org, Toucans@lists.aza.org



PICIFORMES TAG GUIDELINES AND POLICIES

- The TAG encourages all institutions to cooperate fully with all PMP and SSP recommendations.
- The sex of birds in managed programs should be identified as soon as possible to aid in the captive management of the species.
- TAG members interested in conducting captive research on species in this order are encouraged to seek TAG guidance.
- TAG members interested in acquiring birds should follow the AZA acquisition policy. Guidance should be sought from the TAG RCP for species choice and availability.
- All TAG members should refer to the AZA disposition policy when surplus birds need to be placed.
- Exhibits dedicated to the exhibition, education, and reproduction of woodpeckers, Barbets, Aracari, Toucanets, and Toucans are encouraged.

TAG DEFINITION

The taxonomic reference utilized by the Piciformes Taxon Advisory Group is that of BirdLife International. The TAG feels this list is the most accurate and consistent among the resources used to support the TAG's RCP recommendations. This is the same reference utilized by the IUCN 2008 Red List which was used as the source of information regarding conservation status of taxa addressed in this RCP. For details about the BirdLife International list and nomenclature visit:

<http://www.birdlife.org/datazone/species/taxonomy.html>

The TAG is defined by five families, 63 genera and 579 species. However, a vast majority of these species have never been held in captivity, are not likely to be obtained from the wild, and/or possess husbandry requirements that are unknown to aviculture. Since limited space availability demands thoughtful prioritization, several groups have not been addressed in this RCP. These exclusions include: Honeyguides (*Prodotiscus*, *Melignomon*, *Indicato*, *Melichneutes*), Wrynecks (*Jynx*), Piculets (*Picumnus*, *Sasia*, *Nesocittes*), Jacamars (*Galbalcyrrhynchus*, *Brachygalba*, *Jacamaralcyon*, *Galbula*, *Jacamerops*), Puffbirds (*Notharchus*, *Bucco*, *Nystalus*, *Hypnelus*, *Malacoptila*), Nunbirds (*Nonnula*, *Hepaloptila*, *Monasa*).

CONSERVATION STATUS OF TAXA

The IUCN 2008 Red List for Birds was utilized as the exclusive source regarding conservation status of the taxa addressed in this RCP. It is the opinion of the TAG that the IUCN is the most comprehensive inventory of the global conservation status of bird species. The list is produced by the IUCN Species Survival Commission (SSC) “a network of some 7,000 species experts working in almost every country in the world, and data from a number of partner organizations”. Collectively, this network holds what is in the opinion of the TAG probably the most complete scientific knowledge base on the biology and current conservation status of bird species. To access the list visit: www.iucnredlist.org

SPACE SURVEY

The TAG conducted a space survey (Appendix A) during the months of July 2008 – March 2009. The space survey was e-mailed to 229 AZA accredited institutions (and related facilities) of which 113 had Piciformes TAG Institutional Representatives assigned. The survey listed all known TAG species currently held by AZA institutions. The listing of currently held species was derived from a review of ISIS data (June 2008). The survey also included “Additional Species Not Listed”, encouraging respondents to include any taxa that they currently hold or plan to hold but were not included on the survey. The survey asked respondents to include numbers of specimens held currently as well as numbers they plan to hold in the next three years.

The TAG received space survey responses from 145 surveyed institutions (63%) of which 93 (82%) had assigned Piciformes TAG representatives (Appendix B). Requests for information were sent out three times in an effort to achieve AZA’s desired 80% response rate and ample time was given to respond to the simple survey. Thirty-eight of the 84 non-respondents were represented by aquariums and taxa specific facilities that were unlikely to hold Piciformes now or in the future. Nevertheless, current ISIS data (March 2009) for all 84 non-respondents was added to the space survey totals. It should be noted that this data only increased the total number of current Piciformes spaces by 21.

Table 1: PICIFORMES 2009 RCP SPACE SURVEY SUMMARIES

Taxon	Current Spaces	Future Spaces	2003 Program Spaces	2009 Program Spaces
Woodpeckers	50	101	0	0
Barbets	96 (18 or 19% DWA)	252 (46 or 18% DWA)	75-100	180
Aracari/Toucanets	284 (174 or 61% DWA)	597 (450 or 75% DWA)	75	180
Toucans	198 (52 or 26% DWA)	356 (116 or 33% DWA)	225	300

Blue Text identifies the proportion of spaces attributed to the Dallas World Aquarium

The TAG recognizes one space issue presented in Table 1. One AZA accredited institution The Dallas World Aquarium (DWA) currently holds a disproportionate numbers of Barbets (19%), Aracaris/Toucanets (61%) and Toucans (26%). Future spaces are also disproportionately attributed to the Dallas World Aquarium: Barbets (18%), Aracaris/Toucanets (75%) and Toucans (33%). The Tag appreciates the commitment of this member to these taxa. The TAG recognizes that future spaces identified in the survey do not in some circumstances reflect the interests of all surveyed institutions. In response, a conservative approach was taken when interpreting the potential future spaces for Aracaris and Toucanets. In addition, for relevant species, survey results were looked at closely when evaluating species management assessment criteria “demand within AZA” and “institutional commitment”. These species are identified in **Yellow** in the “Piciformes RCP Space Survey Totals” (Appendix C).

SELECTION CRITERION

The primary criteria that were applied to all species for consideration in the Regional Collection Plan were the existence or absence of the species in North American populations.

Two decision trees were utilized to categorize species covered by the TAG. One decision tree was utilized for species/taxon recorded by the space survey as currently present in North American AZA Collections (Appendix D). A separate decision tree was utilized for species/taxa which were not currently in North American AZA Collections but which future interest was expressed in the space survey (Appendix E). Responses to the decision tree questions resulted in: A) The species requiring further evaluation via application of management assessment criteria to determine program level, B) The species being recommended for phase out, C) The species being recommended for phase in, or D) The species not being recommended.

Six WCMC Selection Criteria were utilized in the decision trees. None of these criteria are more important, or carry more weight, than another. Those species which are currently held in North American collections must exhibit at least two of these criteria to be considered for inclusion in the RCP. Those species not currently held in North American collections must exhibit at least three of these criteria to be considered for inclusion in the RCP. Only species that are currently being managed under the auspices of an AZA program were considered to have a “sustainable population/potentially sustainable population”. The six selection criteria utilized are:

1. **Conservation Status of the Taxa:** Conservation status in the wild was assessed using the IUCN 2008 Red List for Birds (www.iucnredlist.org)
2. Taxa of conservation concern were considered a higher priority for AZA programs, with increasing priority given to increasing level of threat.
3. **Availability of Potential Founders:** Do sources exist for potential founders? Outside of availability through other captive populations, this criterion was based on recent (within five years) availability of native Piciformes species via licensed rehabilitation centers, and AZA accredited institution (individual or collaborative) importations from range countries or other regions.
4. **Research Potential:** The captive population has the potential to provide valuable information that may prove useful to maintaining stable wild populations. Husbandry research that benefits current captive populations may also apply to this category. Any husbandry topic identified in the AZA Animal Care Manual template for these taxa is considered an appropriate subject for husbandry research.
5. **Husbandry Expertise:** Consideration is given to the level of expertise available to meet the taxon’s basic biological needs (nutritional, medical, social, etc.) as related to our ability to maintain and propagate them in zoos and aquariums. ISIS data was utilized to identify those genera within the scope of the RCP for which this level of expertise may not exist.
6. **Demonstrated Interest by Zoos/Aquariums:** Species for which a nucleus of zoos and aquariums have expressed interest in maintaining/incorporating the species into their collection plans and/or in developing husbandry expertise are given greater consideration. This information is acquired through space survey institutional responses.

**PICIFORMES 2009 RCP
SELECTION CRITERIA RESULTS
CURRENTLY IN NORTH AMERICAN COLLECTIONS**

Common Name	Scientific Name	Conservation Status	Potential Founders	Research Potential	Husbandry Expertise	Zoo/ Aquarium Interest	Management
Puerto Rican woodpecker	<i>Melanerpes portoricensis</i>	LC	NO	YES	NO	NO	PHASE OUT
Gila woodpecker	<i>Melanerpes uropygialis</i>	LC	YES	YES	NO	NO	APPLY MANAGEMENT ASSESSMENT CRITERIA
Red-breasted sapsucker	<i>Sphyrapicus ruber</i>	LC	YES	YES	NO	NO	APPLY MANAGEMENT ASSESSMENT CRITERIA
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	LC	YES	YES	NO	NO	APPLY MANAGEMENT ASSESSMENT CRITERIA
Downy woodpecker	<i>Picoides pubescens</i>	LC	YES	YES	NO	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Red-cockaded woodpecker	<i>Picoides borealis</i>	LC	YES	YES	NO	NO	APPLY MANAGEMENT ASSESSMENT CRITERIA
Common flicker	<i>Colaptes auratus</i>	LC	YES	YES	NO	NO	APPLY MANAGEMENT ASSESSMENT CRITERIA
Pileated woodpecker	<i>Dryocopus pileatus</i>	LC	YES	YES	NO	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Greater yellow-naped woodpecker	<i>Picus flavinucha</i>	LC	YES	YES	NO	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Golden-backed woodpecker	<i>Dinopium javanense</i>	LC	YES	YES	NO	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	LC	YES	YES	NO	NO	APPLY MANAGEMENT ASSESSMENT CRITERIA
Black-headed woodpecker	<i>Picus erythrogios</i>	LC	NO	YES	NO	NO	PHASE OUT
Fire-tufted barbet	<i>Psilopogon pyrolophus</i>	LC	NO	YES	NO	NO	PHASE OUT
Gaudy red-throated barbet	<i>Megalaima mystacophanos</i>	NT	NO	YES	NO	NO	APPLY MANAGEMENT ASSESSMENT CRITERIA
Black-browed barbet	<i>Megalaima oorti</i>	LC	NO	NO	NO	NO	PHASE OUT

**PICIFORMES 2009 RCP
SELECTION CRITERIA RESULTS
CURRENTLY IN NORTH AMERICAN COLLECTIONS**

Common Name	Scientific Name	Conservation Status	Potential Founders	Research Potential	Husbandry Expertise	Zoo/ Aquarium Interest	Management
Double-toothed barbet	<i>Lybius bidentatus</i>	LC	NO	NO	NO	NO	PHASE OUT
Bearded barbet	<i>Lybius dubius</i>	LC	YES	NO	YES	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Red-and-yellow barbet	<i>Trachyphonus erythrocephalus</i>	LC	YES	NO	YES	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Spot-crowned barbet	<i>Capito maculicoronatus</i>	LC	NO	YES	NO	NO	PHASE OUT
Black-spotted barbet	<i>Capito niger</i>	LC	NO	YES	NO	NO	PHASE OUT
Red-headed barbet	<i>Eubucco bourcierii</i>	LC	NO	YES	NO	NO	PHASE OUT
Prong-billed barbet	<i>Semnomis frantzii</i>	LC	NO	YES	NO	NO	PHASE OUT
Crimson-rumped toucanet	<i>Aulacorhynchus haematopygus</i>	LC	NO	NO	YES	NO	PHASE OUT
Emerald toucanet	<i>Aulacorhynchus prasinus</i>	LC	YES	NO	YES	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Groove-billed toucanet	<i>Aulacorhynchus sulcatus</i>	LC	NO	NO	YES	NO	PHASE OUT
Guianan Toucanet	<i>Selenidera culik</i>	LC	NO	NO	YES	NO	PHASE OUT
Spot-billed Toucanet	<i>Selenidera maculirostris</i>	LC	NO	NO	YES	NO	PHASE OUT
Northwest ivory-bill toucanet	<i>Pteroglossus flavirostris</i>	LC	NO	NO	YES	NO	PHASE OUT
Saffron toucanet	<i>Pteroglossus baillini</i>	NL	NO	NO	YES	NO	PHASE OUT
Blue-banded toucanet	<i>Aulacorhynchus caeruleogularis</i>	LC	NO	NO	YES	NO	PHASE OUT
Chestnut-tipped toucanet	<i>Aulacorhynchus derbianus</i>	LC	NO	NO	YES	NO	PHASE OUT
Black-necked aracari	<i>Pteroglossus aracari</i>	LC	NO	NO	YES	NO	PHASE OUT

**PICIFORMES 2009 RCP
SELECTION CRITERIA RESULTS
CURRENTLY IN NORTH AMERICAN COLLECTIONS**

Common Name	Scientific Name	Conservation Status	Potential Founders	Research Potential	Husbandry Expertise	Zoo/ Aquarium Interest	Management
Curl-crested aracari	<i>Pteroglossus beauharnaesii</i>	LC	YES	NO	YES	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Chestnut-eared aracari	<i>Pteroglossus castanotis</i>	LC	NO	NO	YES	NO	PHASE OUT
Many-banded aracari	<i>Pteroglossus pluricinctus</i>	LC	NO	NO	YES	NO	PHASE OUT
Collared aracari	<i>Pteroglossus torquatus</i>	LC	NO	NO	YES	NO	PHASE OUT
Green aracari	<i>Pteroglossus viridis</i>	LC	NO	NO	YES	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Fiery-billed aracari	<i>Pteroglossus frantzii</i>	LC	NO	NO	YES	NO	PHASE OUT
Ecuadorian collared aracari	<i>Pteroglossus torquatus erythropygius</i>	LC	YES	NO	YES	NO	APPLY MANAGEMENT ASSESSMENT CRITERIA
Chestnut-mandibled toucan	<i>Ramphastos ambiguus</i>	LC	YES	NO	YES	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Red-breasted toucan	<i>Ramphastos dicolorus</i>	LC	NO	NO	YES	NO	PHASE OUT
Keel-billed Toucan	<i>Ramphastos sulfuratus</i>	LC	YES	NO	YES	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Toco toucan	<i>Ramphastos toco</i>	LC	YES	NO	YES	YES	APPLY MANAGEMENT ASSESSMENT CRITERIA
Red-billed toucan	<i>Ramphastos tucanus</i>	LC	NO	NO	YES	NO	PHASE OUT
Channel-billed toucan	<i>Ramphastos vitellinus</i>	LC	NO	NO	YES	NO	PHASE OUT
Swainson's Toucon	<i>Ramphastos swainsonii</i>	LC	NO	NO	YES	NO	PHASE OUT
Plate-billed mountain toucan	<i>Andigena laminostris</i>	NT	NO	YES	NO	NO	PHASE OUT

**PICIFORMES 2009 RCP
SELECTION CRITERIA RESULTS
CURRENTLY NOT IN NORTH AMERICAN COLLECTIONS**

Common Name	Scientific Name	Conservation Status	Potential Founders	Research Potential	Husbandry Expertise	Zoo/Aquarium Interest	Management
Blue-crowned barbet	<i>Megalaima asiatica</i>	LC	YES	NO	YES	NO	NOT RECOMMENDED
D'Arnaud's barbet	<i>Trachyphonus darnaudii</i>	LC	YES	NO	YES	NO	NOT RECOMMENDED
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	NT	YES	YES	NO	NO	PHASE IN: APPLY MANAGEMENT ASSESSMENT CRITERIA
Lettered Aracari	<i>Ptereglossus inscriptus</i>	LC	YES	NO	YES	NO	NOT RECOMMENDED
Gould's toucanet	<i>Selenidera gouldii</i>	LC	YES	NO	YES	NO	NOT RECOMMENDED
Toucan barbet	<i>Semnornis tucanus</i>	NT	YES	YES	NO	NO	PHASE IN: APPLY MANAGEMENT ASSESSMENT CRITERIA



MANAGEMENT ASSESSMENT CRITERIA AND TARGET POPULATIONS

Once it was determined that further evaluation via application of management assessment criteria was required; the following table was used to determine the category of management required. To determine extinction risk (in Zoos and aquariums) with and without management, ZooRisk 3.8 was utilized. Ed Spevak, PMC Adjunct met with the TAG Chair on July 7th and 8th, 2009 to run each species through the software. If data sets were not available for a specific species, data sets from similar taxa were referenced.

Management Assessment Criteria for Recommended Taxa

Criteria	SSP	PMP	No Management (DERP/Phase In)
Availability within AZA	Low	Moderate	Extremes**
Availability outside AZA	Low	Moderate	Extremes**
Extinction Risk Without Management (in Zoos & Aquariums)	Endangered/Threatened	Vulnerable	Extremes**
Extinction Risk with Management (in Zoos & Aquariums)	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

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

Target Population Sizes

Target population sizes were determined by referencing current program species data sets and evaluating genetic and demographic summaries for those species. For new program species, data sets for similar taxa were referenced. Population size scenarios were run in ZooRisk 3.8 to determine if current populations would benefit from larger size. These numbers were then cross referenced with available future spaces indicated for appropriate taxa on the Space Survey Summaries (Table 1).

Management Assessment Criteria for Recommended Species
Woodpeckers

CRITERIA	Gila Woodpecker	Red-breasted Sapsucker	Yellow-bellied Sapsucker	Downy Woodpecker	Red-cockaded Woodpecker	Common Flicker
Availability within AZA	Extremes	Extremes	Extremes	Extremes	Extremes	Extremes
Availability outside AZA	Extremes	Extremes	Extremes	Extremes	Extremes	Extremes
Extinction Risk Without Management (in Zoos and Aquariums)	Extremes	Extremes	Extremes	Extremes	Extremes	Extremes
Extinction Risk With Management (in Zoos and Aquariums)	Stable	Stable	Stable	Stable	Stable	Stable
Demand within AZA	Low	Low	Low	Moderate	Low	Low
Institutional Commitment	Low	Low	Low	Low	Low	Low
Ease of Breeding	Extremes	Extremes	Extremes	Extremes	Extremes	Extremes
Extinction Risk (Wild)	Least Concern	Least Concern	Least Concern	Least Concern	Least Concern	Least Concern
Acquisition Cost (Outside AZA)	Low	Low	Low	Low	Low	Low
Program Operating Cost	Low	Low	Low	Low	Low	Low
International Program	No	No	No	No	Low	Low
Link to Conservation of Wild Populations	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect
North American Governmental Conservation Program	No	No	No	No	No	No
Total SSP (S) PMP (P) DERP (D)	SSP=0 PMP=1 DERP=12	SSP=0 PMP=1 DERP=12	SSP=0 PMP=1 DERP=12	SSP=0 PMP=2 DERP=11	SSP=0 PMP=1 DERP=12	SSP=0 PMP=1 DERP=12
TAG Program Recommendation	DERP	DERP	DERP	DERP	DERP	DERP

CRITERIA	Pileated Woodpecker	Greater Yellow-naped Woodpecker	Golden-backed Woodpecker	Red-bellied Woodpecker	Red-headed Woodpecker
Availability within AZA	Extremes	Extremes	Extremes	Extremes	Extremes
Availability outside AZA	Extremes	Moderate	Moderate	Extremes	Extremes
Extinction Risk Without Management (in Zoos and Aquariums)	Extremes	Extremes	Extremes	Extremes	Extremes
Extinction Risk With Management (in Zoos and Aquariums)	Stable	Stable	Stable	Stable	Stable
Demand within AZA	Moderate	Moderate	Moderate	Low	Low
Institutional Commitment	Low	Low	Low	Low	Low
Ease of Breeding	Extremes	Extremes	Extremes	Extremes	Extremes
Extinction Risk (Wild)	Least Concern	Least concern	Least Concern	Least Concern	Endangered/Threatened
Acquisition Cost (Outside AZA)	Low	Moderate	Moderate	Low	Low
Program Operating Cost	Low	Low	Low	Low	Low
International Program	No	No	No	No	No
Link to Conservation of Wild Populations	Indirect	Indirect	Indirect	Indirect	Indirect
North American Governmental Conservation Program	No	No	No	No	No
Total SSP (S) PMP (P) DERP (D)	SSP=0 PMP=2 DERP=11	SSP=0 PMP=4 DERP=9	SSP=0 PMP=4 DERP=9	SSP=0 PMP=1 DERP=12	SSP=1 PMP=1 DERP=11
TAG Program Recommendation	DERP	DERP	DERP	DERP	DERP

Management Assessment Criteria for Recommended Species
Barbets

CRITERIA	Bearded Barbet	Red and Yellow Barbet	Toucan Barbet	Gaudy Red-throated Barbet
Availability within AZA	Moderate	Low	Extremes	Extremes
Availability outside AZA	Moderate	Moderate	Extremes	Extremes
Extinction Risk Without Management (in Zoos and Aquariums)	Endangered	Endangered	Extremes	Extremes
Extinction Risk With Management (in Zoos and Aquariums)	Decreases	Decreases	Stable	Stable
Demand within AZA	High	High	Low	Low
Institutional Commitment	Moderate	Moderate	Low	Low
Ease of Breeding	Moderate	Moderate	Extremes	Moderate
Extinction Risk (Wild)	Least Concern	Least Concern	Endangered/Threatened	Endangered/Threatened
Acquisition Cost (Outside AZA)	Low	Low	Low	Low
Program Operating Cost	Low	Low	Low	Low
International Program	No	No	No	No
Link to Conservation of Wild Populations	Indirect	Indirect	Indirect	Indirect
North American Governmental Conservation Program	No	No	No	No
Total SSP (S) PMP (P) DERP (D)	SSP= 3 PMP=7 DERP=3	SSP=6 PMP=4 DERP=3	SSP=1 PMP=1 DERP=11	SSP=2 PMP=1 DERP=10
TAG Program Recommendation	PMP	PMP	DERP	DERP



Management Assessment Criteria for Recommended Species
Toucanets and Aracaris

CRITERIA	Emerald Toucanet	Curl-crested Aracari	Green Aracari	Ecuadorian Collared Aracari
Availability within AZA	Extremes	Low	Moderate	Low
Availability outside AZA	Moderate	Low	Moderate	Moderate
Extinction Risk Without Management (in Zoos and Aquariums)	Extremes	Endangered	Vulnerable	Endangered
Extinction Risk With Management (in Zoos and Aquariums)	Decreases	Decreases/Stable	Decreases/Stable	Decreases/Stable
Demand within AZA	High	Moderate	High	Low
Institutional Commitment	Moderate	Low	Moderate	Low
Ease of Breeding	Moderate	Moderate	Moderate	Moderate
Extinction Risk (Wild)	Least Concern	Least Concern	Least Concern	Least Concern
Acquisition Cost (Outside AZA)	Moderate	Moderate	Moderate	Moderate
Program Operating Cost	Low	Low	Low	Low
International Program	No	No	No	No
Link to Conservation of Wild Populations	Indirect	Indirect	Indirect	Indirect
North American Governmental Conservation Program	No	No	No	No
Total SSP (S) PMP (P) DERP (D)	SSP=3 PMP=5 DERP=5	SSP=4 PMP=6 DERP=3	SSP=2 PMP=9 DERP=2	SSP=3 PMP=4 DERP=6
TAG Program Recommendation	DERP	PMP	PMP	DERP

Management Assessment Criteria for Recommended Species
Toucans

CRITERIA	Chestnut-mandibled Toucan	Keel-billed Toucan	Toco Toucan
Availability within AZA	Moderate	Moderate	Moderate
Availability outside AZA	Low	Low	Low
Extinction Risk Without Management (in Zoos and Aquariums)	Endangered	Endangered	Endangered
Extinction Risk With Management (in Zoos and Aquariums)	Decreases	Decreases	Decreases
Demand within AZA	Moderate	Moderate	High
Institutional Commitment	High	High	High
Ease of Breeding	Moderate	Moderate	Moderate
Extinction Risk (Wild)	Least Concern	Least Concern	Least Concern
Acquisition Cost (Outside AZA)	High	High	High
Program Operating Cost	Low	Low	Low
International Program	No	No	No
Link to Conservation of Wild Populations	Indirect	Indirect	Indirect
North American Governmental Conservation Program	No	No	No
Total SSP (S) PMP (P) DERP (D)	SSP=6 PMP=4 DERP=3	SSP=6 PMP=4 DERP=3	SSP=7 PMP=3 DERP=3
TAG Program Recommendation	SSP	SSP	SSP

MANAGEMENT CATEGORIES

- **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.

Characteristics of Program and Non-program Management Categories

	SSP	PMP	No Management (DERP/Phase In)
Participation	Full/Mandatory	Voluntary	N/A
MOU	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 Recs.	Yes	Per Program Decision	No
Steering Committee	Optional	No	N/A
AZA PMC Assistance	Yes	Yes	No
SPMAG Assistance	Yes	Yes	Case-by-Case Basis
AZA Regional Studbook	Yes	Yes	No

Table 2: Piciformes TAG 2009 Woodpecker Program Recommendations Summary

Woodpeckers Species and Range	Program Recommendation	Program Role	Target Population	Program Leader
Puerto Rican woodpecker: S.A. <i>Melanerpes portoricensis</i>	Phase Out	Husbandry Research Develop Woodpecker ACM	0	N/A
Gila woodpecker: N.A. <i>Melanerpes uropygialis</i>	DERP	Husbandry Research Develop Woodpecker ACM	6	Joe DeGraauw NA Woodpecker Species Champion Nashville Zoo 615-833-1534 jdegraauw@nashvillezoo.org
Red-headed Woodpecker: N.A. <i>Melanerpes erythrocephalus</i>	DERP	Husbandry Research Develop Woodpecker ACM	4	Joe DeGraauw NA Woodpecker Species Champion Nashville Zoo 615-833-1534 jdegraauw@nashvillezoo.org
Red-breasted sapsucker: N.A. <i>Sphyrapicus ruber</i>	DERP	Husbandry Research Develop Woodpecker ACM	4	Joe DeGraauw NA Woodpecker Species Champion Nashville Zoo 615-833-1534 jdegraauw@nashvillezoo.org
Yellow-bellied sapsucker: N.A. <i>Sphyrapicus varius</i>	DERP	Husbandry Research Develop Woodpecker ACM	4	Joe DeGraauw NA Woodpecker Species Champion Nashville Zoo 615-833-1534 jdegraauw@nashvillezoo.org
Downy woodpecker: N.A. <i>Picoides pubescens</i>	DERP	Husbandry Research Develop Woodpecker ACM	14	Joe DeGraauw NA Woodpecker Species Champion Nashville Zoo 615-833-1534 jdegraauw@nashvillezoo.org
Red-cockaded woodpecker: N.A. <i>Picoides borealis</i>	DERP	Husbandry Research Develop Woodpecker ACM	4	Joe DeGraauw NA Woodpecker Species Champion Nashville Zoo 615-833-1534 jdegraauw@nashvillezoo.org
Common flicker: N.A. <i>Colaptes auratus</i>	DERP	Husbandry Research Develop Woodpecker ACM	10	Joe DeGraauw NA Woodpecker Species Champion Nashville Zoo 615-833-1534 jdegraauw@nashvillezoo.org
Pileated woodpecker: N.A. <i>Dryocopus pileatus</i>	DERP	Husbandry Research Develop Woodpecker ACM	20	Joe DeGraauw NA Woodpecker Species Champion Nashville Zoo 615-833-1534 jdegraauw@nashvillezoo.org
Greater yellow-naped woodpecker <i>Picus flavinucha</i> : Asia	DERP	Husbandry Research Develop Woodpecker ACM	20	N/A
Black-headed Woodpecker: <i>Picus erytrogyois</i> : S.E. Asia	Phase Out	N/A	0	N/A
Golden-backed woodpecker: Asia <i>Dinopium javanense</i>	DERP	Husbandry Research Develop Woodpecker ACM	10	N/A
Red-bellied Woodpecker: N.A. <i>Melanerpes carolinus</i>	DERP	Husbandry Research Develop Woodpecker ACM	4	Joe DeGraauw NA Woodpecker Species Champion Nashville Zoo 615-833-1534 jdegraauw@nashvillezoo.org

Table 3: Piciformes TAG 2009 Barbet Program Recommendations Summary

Barbet Species and Range	Program Recommendation	Program Role	Target Population	Program Leader
Fire-tufted barbet: S.E. Asia <i>Ptilinopus pyrolophus</i>	Phase Out	N/A	0	N/A
Gaudy red-throated barbet: S.E. Asia <i>Megalaima mystacophanos</i>	DERP	Husbandry Research Develop Barbet ACM	20	N/A
Black-browed barbet: S.E. Asia <i>Megalaima oorti</i>	Phase Out	N/A	0	N/A
Blue-crowned barbet: Asia <i>Megalaima asiatica</i>	Not Recommended	N/A	0	N/A
Double-toothed barbet: Africa <i>Lybius bidentatus</i>	Phase Out	N/A	0	N/A
Bearded barbet: Africa <i>Lybius dubius</i>	PMP	Husbandry Research Develop Barbet ACM	100	Anne Tieber PMP Manager & Studbook Keeper Saint Louis Zoo 314-646-4684 Tieber@stlzoo.org
D'Arnaud's barbet: Africa <i>Trachyphonus darnaudii</i>	Not Recommended	N/A	0	N/A
Red-and-yellow barbet: Africa <i>Trachyphonus erythrocephalus</i>	PMP (New Program)	Husbandry Research Develop Barbet ACM	80	Mark O'Berry PMP Manager & Studbook Keeper Disney's Animal Kingdom 407-938-2684 Mark.A.O'Berry@disney.com
Spot-crowned barbet: S. A. <i>Capito maculicoronatus</i>	Phase Out	N/A	0	N/A
Black-spotted barbet: S.A. <i>Capito niger</i>	Phase Out	N/A	0	N/A
Red-headed barbet: S. & C. A. <i>Eubucco bourcierii</i>	Phase Out	N/A	0	N/A
Toucan barbet: S.A. <i>Semnornis tucanus</i>	DERP	Husbandry Research Develop Barbet ACM	20	Daryl Richardson Species Champion The Dallas World Aquarium 214-720-2224 daryl@dwazoo.com



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Table 4: Piciformes TAG 2009 Toucanet/Aracari Program Recommendations Summary

Toucanet/Aracari Species and Range	Program Recommendation	Program Role	Target Population	Program Leader
Crimson-rumped toucanet: S.A. <i>Aulacorhynchus haematopygus</i>	Phase Out	N/A	0	N/A
Emerald toucanet: N., S. & C. A. <i>Aulacorhynchus prasinus</i>	DERP	Husbandry Research and Display	20	N/A
Groove-billed toucanet: S. A. <i>Aulacorhynchus sulcatus</i>	Phase Out	N/A	0	N/A
Blue-banded toucanet: S.A. <i>Aulacorhynchus caeruleogularis</i>	Phase Out	N/A	0	N/A
Chestnut-tipped toucanet: S.A. <i>Aulacorhynchus derbianus</i>	Phase Out	N/A	0	N/A
Guianan Toucanet: S.A. <i>Selenidera culik</i>	Phase Out	N/A	0	N/A
Spot-billed Toucanet: S.A. <i>Selenidera maculirostris</i>	Phase Out	N/A	0	N/A
Gould's toucanet: S.A. <i>Selenidera gouldii</i>	Not Recommended	N/A	0	N/A
Northwest ivory-bill toucanet: S.A. <i>Pteroglossus flavirostris</i>	Phase Out	N/A	0	N/A
Lettered Aracari: S.A. <i>Pteroglossus inscriptus</i>	Not Recommended	N/A	0	N/A
Saffron toucanet: S.A. <i>Pteroglossus baillini</i>	Phase Out	N/A	0	N/A
Black-necked aracari: S.A. <i>Pteroglossus aracari</i>	Phase Out	N/A	0	N/A
Ivory-bill aracari: S.A. <i>Pteroglossus azara</i>	Phase Out	N/A	0	N/A
Curly-crested aracari: S.A. <i>Pteroglossus beauharnaesii</i>	PMP (New Program)	Education, Display and Conservation via a sustainable captive population	80	Daryl Richardson Species Champion The Dallas World Aquarium 214-720-2224 daryl@dwazoo.com
Chestnut-eared aracari: S.A. <i>Pteroglossus castanotis</i>	Phase Out	N/A	0	N/A
Many-banded aracari: S.A. <i>Pteroglossus pluricinctus</i>	Phase Out	N/A	0	N/A
Collared aracari: S.A. <i>Pteroglossus torquatus</i>	Phase Out	N/A	0	N/A
Green aracari: S.A. <i>Pteroglossus viridis</i>	PMP	Education, Display and Conservation via a sustainable captive population	100	Kevin Willis PMP Manager & Studbook Keeper Minnesota Zoo 952-431-9272 Kevin.Willis@State.MN.US
Fiery-billed aracari: C.A. <i>Pteroglossus frantzii</i>	Phase Out	N/A	0	N/A
Ecuadorian collared aracari <i>Pteroglossus torquatus erythropygius</i> : S. & C. A.	DERP	Education and Display	30	Daryl Richardson Species Champion The Dallas World Aquarium 214-720-2224 daryl@dwazoo.com

Table 5: Piciformes TAG 2009 Toucan Program Recommendation Summary

Toucan Species and Range	Program Recommendation	Program Role	Target Population	Program Leader
Chestnut-mandibled toucan: S.A. <i>Ramphastos ambiguus</i>	SSP	Education, Display and Conservation via a sustainable captive population. Develop ACM	100	Matt Schmit Studbook Keeper Houston Zoo 713-533-6801 mschmit@Houstonzoo.org Ken Naugher SSP Coordinator Montgomery Zoo 334-240-4903 knaugher@montgomeryval.gov
Red-breasted toucan: S.A. <i>Ramphastos dicolorus</i>	Phase Out	N/A	0	N/A
Keel-billed Toucan: S.A. <i>Ramphastos sulfuratus</i>	SSP	Education, Display and Conservation via a sustainable captive population. Develop ACM	100	Cyndi Laljer Studbook Keeper SeaWorld San Antonio 210-523-3273 Cyndi.Laljer@SeaWorld.Com Ken Naugher SSP Coordinator Montgomery Zoo 334-240-4903 knaugher@montgomeryval.gov
Toco toucan: S.A. <i>Ramphastos toco</i>	SSP	Education, Display and Conservation via a sustainable captive population. Develop ACM	100	Martin Vince Studbook Keeper Riverbanks Zoo and Garden 803-779-8717 (1159) mvince@riverbanks.org Ken Naugher SSP Coordinator Montgomery Zoo 334-240-4903 knaugher@montgomeryval.gov
Red-billed toucan: S.A. <i>Ramphastos tucanus</i>	Phase Out	N/A	0	N/A
Channel-billed toucan: S.A. <i>Ramphastos vitellinus</i>	Phase Out	N/A	0	N/A
Swainson's Toucan: S.A. <i>Ramphastos swainsonii</i>	Phase Out	N/A	0	N/A
Plate-billed mountain toucan: S..A. <i>Andigena laminostris</i>	Phase Out	N/A	0	N/A

Table 6: PROGRAM STATUS TABLE

Program	Date Program Initiated	Current Program Leader	Date Leadership Assumed	Date of Last Studbook Update	Date of Last PMP Publication	Date of Last Master Plan Publication
Green Aracari PMP	1996	Kevin Willis: Minnesota Zoological Garden	5/5/2005	1/2008 Kevin Willis: Minnesota Zoological Garden	1/2008	NA
Curl Crested Aracari PMP	New 2009 Program	Daryl Richardson The Dallas World Aquarium	Pending WCMC RCP Approval	Pending Daryl Richardson The Dallas World Aquarium		
Barded Barbet PMP	2004	Anne Tieber: Saint Louis Zoo	2004	1/5/2009 Anne Tieber: Saint Louis Zoo	1/5/2009	NA
Red and Yellow Barbet PMP	New 2009 Program	Mark O'Berry: Disney's Animal Kingdom	Pending WCMC RCP Approval	Pending Mark O'Berry: Disney's Animal Kingdom		
Keel-billed Toucan SSP	2003	Ken Naugher: Montgomery Zoo	2003	2007 Cyndi Laljer: SeaWorld	NA	9/23/2008
Chestnut-mandibled Toucan SSP	2003	Ken Naugher: Montgomery Zoo	2003	6/26/2007 Matt Schmit: Houston Zoo	NA	9/23/2008
Toco Toucan SSP	2003	Ken Naugher: Montgomery Zoo	2003	2/2009 Martin Vince: Riverbank's Zoo	NA	6/13/2006



Table 7: Program Recommendations Updates Table

Species	Previous Program Status	Current Program Status	Program Leader Change?	New Program Leader/Species Contact
Bearded barbet <i>Lybius dubius</i>	PMP	PMP	NO	N/A
Red-and-yellow barbet <i>Trachyphonus erythrocephalus</i>	PMP	PMP	YES, Application Attached	Mark O’Berry: See Application PMP Manager & Studbook Keeper Disney’s Animal Kingdom 407-938-2684 Mark.A.O’Berry@disney.com
Curl-crested aracari <i>Pteroglossus beauharnaesii</i>	DERP	PMP	YES Application Attached	Daryl Richardson (See Application) Species Champion The Dallas World Aquarium 214-720-2224 daryl@dwazoo.com
Green aracari <i>Pteroglossus viridis</i>	PMP	PMP	YES	Kevin Willis PMP Manager & Studbook Keeper Minnesota Zoo 952-431-9272 Kevin.Willis@State.MN.US
Spot-billed Toucanet <i>Selenidera maculirostris</i>	PMP	PHASE OUT	N/A	N/A
Chestnut-mandibled toucan <i>Ramphastos ambiguus</i>	SSP	SSP	YES	Matt Schmit Studbook Keeper Houston Zoo 713-533-6801 mschmit@Houstonzoo.org Ken Naugher SSP Coordinator Montgomery Zoo 334-240-4903 knaugher@montgomeryal.gov
Keel-billed Toucan <i>Ramphastos sulfuratus</i>	SSP	SSP	YES	Ken Naugher SSP Coordinator Montgomery Zoo 334-240-4903 knaugher@montgomeryal.gov
Toco toucan <i>Ramphastos toco</i>	SSP	SSP	YES	Martin Vince Studbook Keeper Riverbanks Zoo and Garden 803-779-8717 (1159) mvince@riverbanks.org Ken Naugher SSP Coordinator Montgomery Zoo 334-240-4903 knaugher@montgomeryal.gov

APPENDIX A

2008 PICIFORMES TAG SPACE SURVEY

Institution:	
Respondent:	
Phone:	
Fax:	
E-Mail:	

The PICIFORMES TAG is currently conducting a space survey in preparation for updating its Regional Collection Plan

If your institution is **NOT** currently holding any Piciformes Tag species and has no plans to hold them in the next 3 years; please type **NONE** for Institutional Interest. (Green box below) **A response is requested from all IR's**

INSTITUTIONAL INTEREST :		Your survey is complete. Please return your survey to the contact listed at the bottom of the survey. THANK YOU!
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If your institution currently holds any Piciformes Tag species please complete the following information for your institution:

Common Name	Scientific Name	Sex ratio of specimens currently in collection (e.g., 1.1.2)			Sex ratio of specimens that you plan to have in collection in three years?		
		M	F	U	M	F	U
Puerto Rican woodpecker	<i>Melanerpes portoricensis</i>						
Gila woodpecker	<i>Melanerpes uropygialis</i>						
Red-breasted sapsucker	<i>Sphyrapicus ruber</i>						
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>						
Downy woodpecker	<i>Picoides pubescens</i>						
Red-cockaded woodpecker	<i>Picoides borealis</i>						
Common flicker	<i>Colaptes auratus</i>						
Pileated woodpecker	<i>Dryocopus pileatus</i>						
Red-rumped green woodpecker	<i>Picus erythrogygius</i>						
Greater yellow-naped woodpecker	<i>Picus flavinucha</i>						
Golden-backed woodpecker	<i>Dinopium javanense</i>						
Fire-tufted barbet	<i>Psilopogon pyrolophus</i>						
Blue-crowned barbet	<i>Megalaima asiatica</i>						
Gaudy red-throated barbet	<i>Megalaima mystacophanos</i>						
Black-browed barbet	<i>Megalaima oorti</i>						
Double-toothed barbet	<i>Lybius bidentatus</i>						
Bearded barbet	<i>Lybius dubius</i>						
D'Arnaud's barbet	<i>Trachyphonus darnaudii</i>						
Red-and-yellow barbet	<i>Trachyphonus erythrocephalus</i>						
Spot-crowned barbet	<i>Capito maculicoronatus</i>						
Black-spotted barbet	<i>Capito niger</i>						
Red-headed barbet	<i>Eubucco bourcierii</i>						
Prong-billed barbet	<i>Semnornis frantzii</i>						
Crimson-rumped toucanet	<i>Aulacorhynchus haematopygus</i>						
Emerald toucanet	<i>Aulacorhynchus prasinus</i>						
Groove-billed toucanet	<i>Aulacorhynchus sulcatus</i>						
Black-necked aracari	<i>Pteroglossus aracari</i>						
Ivory-bill aracari	<i>Pteroglossus azara</i>						
Curl-crested aracari	<i>Pteroglossus beauharnaesii</i>						
Chestnut-eared aracari	<i>Pteroglossus castanotis</i>						
Many-banded aracari	<i>Pteroglossus pluricinctus</i>						
Collared aracari	<i>Pteroglossus torquatus</i>						

APPENDIX A

Common Name	Scientific Name	Sex ratio of specimens currently in collection (e.g., 1.1.2)			Sex ratio of specimens that you plan to have in collection in three years?		
Green aracari	<i>Pteroglossus viridis</i>						
Chestnutmandible bicolorbill toucan	<i>Ramphastos ambiguus</i>						
Red-breasted toucan	<i>Ramphastos dicolorus</i>						
Keel-billed toucan	<i>Ramphastos sulfuratus</i>						
Toco toucan	<i>Ramphastos toco</i>						
Red-billed toucan	<i>Ramphastos tucanus</i>						
Channel-billed toucan	<i>Ramphastos vitellinus</i>						
Additional Species not listed							

Thank you for taking the time to complete this survey!
 Please forward your completed survey by July, 1 2008 to:

Eric Jeltos
 1 Governmant Dr.
 Saint Louis, MO 63110

Phone: 314-646-4656
 Fax: 314-647-7969
saruscranestudbook@stlzoo.org

**APPENDIX B
SPACE SURVEY RESPONSES**

INSTITUTION	IR FIRST NAME	IR LAST NAME	IR E-MAIL	II	II E-MAIL	Received completed Survey
Ablene Zoological Gardens	Diane	Longenecker	diane.longenecker@ablienetx.com	Bill Baker	Bill.baker@ablienetx.com	X
Adventure Aquarium				Denise Aster	daster@AdventureAquarium.com	X
African Safari Park				Alberto Paras	pago@africansafari.com.mx	X
African Safari Wildlife Park				Laura Bragg	lrauraswp@aol.com	X
Akron Zoological Park	Jim	Mazinger	jmazinger@akronzoo.org	Douglas Fielarz	dmpiekarz@akronzoo.org	X
Alameda Park Zoo	Randy	McKenney	rmckenney@cabq.gov	Steve Diehl	sdielh@ci.alamogordo.nm.us	X
Albuquerque Biological Park	no response			Tom Silva	tsilva@cabq.gov	X
Alexandria Zoological Park	Paula	Koivig	pkoivig@moodygardens.com	Leslie Whitte	les.whitte@chvfoialex.com	X
Aquarium & Rainforest at Moody Gardens, Inc.				Greg Whitaker	gwhittaker@moodygardens.com	X
Aquarium of the Bay				John Frawley	johnf@aquariumofthebay.com	X
Aquarium of the Pacific				Perry Hampton	phampton@baop.org	X
Arizona-Sonorra Desert Museum	Shawnee	Riplog-Peterson	srplog-peterson@desertmuseum.org	Robert Edison	redison@desertmuseum.org	X
Audubon Aquarium of the Americas				Rich Toth	rtoth@auduboninstitute.org	X
Audubon Center for Research of Endangered Spec				Betsy Dresser	bdresser@auduboninstitute.org	X
Audubon Zoo	Susan	Maddocks	smaddocks@auduboninstitute.org	Rick Dietz	rdietz@AudubonInstitute.org	X
Bermuda Aquarium, Museum and Zoo				Cindy Norton	CNorton@oo.bergen.nj.us	X
Binder Park Zoo				Ian Walker	idwalker@gov.bm	X
Biotope de Montreal	Chantal	Routhier	crouthier@ville.montreal.qc.ca	Jerry Barnett	jbarnett@binderparkzoo.org	X
Birch Aquarium at Scripps Institute of Oceanograph	no response			Michel Delorme	mdelorme@ville.montreal.qc.ca	X
Birmingham Zoo	Tim	Snyder	tsnyder@birminghamzoo.com	Nigelia Hillgarth	nhillgarth@uscd.edu	X
Blank Park Zoo	Kevin	Drees	kdrees@blankparkzoo.org	Bill Foster	wfoster@birminghamzoo.com	X
Boonshoft Museum of Discovery	no response			Kevin Drees	kdrees@blankparkzoo.org	X
Bramble Park Zoo				Mark Mazzei	mmazzei@boonshoftmuseum.org	X
Brandwine Zoo				Dan Miller	dmiller@watertownsd.us	X
BREC's Baton Rouge Zoo				Nancy Falasco	nancy.falasco@state.de.us	X
Brox Zoo	Christine	Sheppard	csheppard@wcs.org	Sam Winslow	swinslow@brzoo.org	X
Brookgreen Gardens				Michelle Smul	msmul@brevardzoo.org	X
Buffalo Zoological Gardens	Gerard	Aquilina	gdaquilina@aol.com	Anne Rockmore	arockmore@wcs.org	X
Busch Gardens Tampa Bay	Michael	Wells	mwells@BuschGardens.com	Andrea DeMuth	ademuth@brookgreen.org	X
Butlinwood Park Zoo				Gerard D. Aquilina	gdaquilina@aol.com	X
Cabrillo Marine Aquarium				Glenn Young	Glenn.Young@BuschGardens.com	X
Caldwell Zoo				Shara Crook-Marti	shara.crook@ci.new-bedford.ma.us	X
Calgary Zoo, Botanical Garden & Prehistoric Park	Cathy	Gavlier	Cathy.G@calgaryzoo.ab.ca	Dr. Kristen Darro	kristen.darro@lacity.org	X
Cameron Park Zoo	Carolyn	Atherton	CarolynA@ci.waco.tx.us	Scott Maddox	smaddox@caldwellzoo.org	X
Cape May County Park Zoo	no response			Dr. Fleishman	zvei@paluch@co.cape-may.nj.us	X
Capron Park Zoo				Herbert Paluch	zvei@paluch@co.cape-may.nj.us	X
Central Florida Zoological Park	Jeff	Sailer	jsailer@wcs.org	Jean Berchimol	JMBENCHIMOL@aol.com	X
Chahinkapa Zoo	no response			Bornie Breitbel	bornieb@centralfloridazoo.org	X
Charles Paddock Zoo				Jeff Sailer	jsailer@wcs.org	X
Chattanooga Zoo at Warner Park				Kathy Diekman	kathydiekman@702com.net	X
Chenaw Wild Animal Park				Alan Baker	abaker@atascadero.org	X
Cheyanne Mountain Zoo	Tracy	Leeds	tleeeds@cmzoo.org	Dardanelle Long	dlongwpz@aol.com	X
Chicago Zoological Society - Brookfield Zoo	Anne	Oiler	anolier@brookfieldzoo.org	Janis Thompson	jthompson@parksatchenaw.org	X
Cincinnati Zoo & Botanical Garden	David	Oehler	david.oehler@cincinnatizoo.org	Stuart Strahl	ststrahl@brookfieldzoo.org	X
Cleveland Metroparks Zoo	Stan	Seares	sws@clevelandmetroparks.com	Dave Jenike	dave.jenike@cincinnatizoo.org	X
Clyde Peeling's Reptiland				Geoff Hall	gsh@ci.vealandmetroparks.com	X
Columbus Zoo and Aquarium	Kelly	Vineyard	kelly.vineyard@columbuszoo.org	Clyde Peeling	clvde@reptiland.com	X
Connecticut's Beardsley Zoo				Don Winsiel	don.winsiel@columbuszoo.org	X
				Don Goff	dgoft@beardsleyzoo.org	X

**APPENDIX B
SPACE SURVEY RESPONSES**

INSTITUTION	IR FIRST NAME	IR LAST NAME	IR E-MAIL	II	II E-MAIL	Received completed Survey
Cosley Zoo	Cassy	Kulilek	keeper2@wheatonparks.org	Susan Wahlgren	swahlgren@wheatonparks.org	X
Coyote Point Museum				Nikki Finch-Morale	Nikki@coyotepointmuseum.org	
Dakota Zoo				Terry Lincoln	director@dakotazoo.org	
Dallas World Aquarium	Cindy	Digesualdo	vetcindy@dkwazoo.com	Daryl Richardson	daryl@dkwazoo.com	X
Dallas Zoo	Sherry	Mossbarger	birdkeeper44@yahoo.com	Chuck Siegel	charles.siegel@dallascityhall.com	X
Denver Zoological Gardens	May Jo	Willis	mwillis@denverzoo.org	Lynn Kramer	lkramer@denverzoo.org	X
Detroit Zoological Park	Tom	Schneider	tschneider@detroitzoo.org	Scott Carter	scarter@detroitzoo.org	X
Dewar Wildlife Trust/Gorilla Haven				C. E. Stewart Dew	cesdewar@gorilla-haven.org	
Dickerson Park Zoo	John	Collette	icollette@dickepsonparkzoo.org	Kesha Schreiber	records@dickepsonparkzoo.org	X
Disney's Animal Kingdom	James	Meleur	James.H.Meleur@disney.com	Joe Christman	joseph.christman@disney.com	X
El Paso Zoo	John	Kiseda	kisedaj@elpasotexas.gov	John Kiseda	kisedaj@elpasotexas.gov	X
Elen Trout Zoo				Gordon Henley	ghenley@elentroutzoo.com	
Elmwood Park Zoo	David	Wood	dwood@elmwoodparkzoo.org	Rafael Suarez	rsuarez@elmwoodparkzoo.org	X
Erie Zoo	Cindy	Kraider	ckraider@eriezoo.org	Cindy Kraider	ckraider@eriezoo.org	X
Fort Wayne Children's Zoo	Dr. Joseph	Smith	vet@kidszoo.org	Mark Weldon	mark@kidszoo.org	X
Fort Worth Zoo	Katy	Unger	Kuniger@fortworthzoo.org	Annabel Ross	records@fortworthzoo.org	X
Fossil Rim Wildlife Center				Kelley Snodgrass	kelleys@fossilrim.org	
Franklin Park Zoo	Fredrick	Beall	fbeall@zoorenwengland.com	Judi Manning	fmanning@zoorenwengland.com	X
Fresno Chaffee Zoo	Andrew	Snyder	asnyder@fresnochaffeezoo.com	Andrew T. Snyder	asnyder@fresnochaffeezoo.com	X
Gladys Porter Zoo				Dr. Patrick M. Burchfield	pburchfield@gpz.org	
Glen Oak Zoo	Dawn	Peterfish	dpeterfish@peorazoo.org	Dawn Peterfish	dpeterfish@peorazoo.org	X
Great Ape Trust of Iowa				Robert W. Shumal	rshumal@greatapetrust.org	
Great Plains Zoo & Delbridge Museum	Jay	Teztloff	jteztloff@gpzoo.org	Elizabeth Whealy	ewhealy@gpzoo.org	X
Greenville Zoo				Jeff Bullock	bullockj@greenvillzoo.com	X
Grizzly & Wolf Discovery Center				John Helne	jhelne@greatgreenville.com	
Happy Hollow Zoo	no response			Gregg Owens	gowens1019@aol.com	X
Have Trunk Will Travel				Kari Johnson	kari@haventrunkwilltravel.com	
Henry Vilas Zoo				Jim Hubbig	hubbig@cco.dane.wi.us	
Henson Robinson Zoo				Talon Thornton	thornton@hensonrobinsonzoo.org	
Honolulu Zoo	Linda	Santos	lsantos@honolulu.gov	Peter Luscomb	pluscobm@honolulu.gov	X
Houston Aquarium, Inc.				Jim Prappas	jprappas@ldry.com	
Houston Zoo, Inc.	Chris	Holmes	chholmes@houstonzoo.org	Tricia Webster	twebster@houstonzoo.org	X
Hutchinson Zoo	Kiley	Buggeln	kileyb@hutchzoo.com	Charlotie Poepper	charlottep@hutchzoo.com	X
Indianapolis Zoo				Deborah Olson	dolson@indyzoo.com	
International Animal Exchange, Inc.	Laura	Bragg	LauraASWP@aol.com	Brian Hunt	lahunt@aol.com	
International Crane Foundation				James Harris	harris@savingcranes.org	
International Exotic Feline Sanctuary				Richard Gilbreth	rgilbreth@aol.com	
Jackson Zoo	Dave	Wetzel	dwetzel@msn.com	Beth Peff	bpeff@jacksonzoo.org	X
Jacksonville Zoo and Gardens	Robin	Lenz	rlenzr@jacksonvillezoo.org	Defti Messinger	messingerd@jacksonvillezoo.org	X
Jenkinson's Aquarium				Cindy Claus	cindy.claus@jenkinsons.com	X
John Ball Zoological Garden	Cheryl	Dykstra	cheryld@serv.net	Norah Fleichall	norah.fleichall@kentcountymt.gov	
John G. Shedd Aquarium	no response			Ken Ramirez	Kramirez@shedd-aquarium.org	
John L. Behler Chelonian Conservation Center	no response			Eric Goode	ericg@jhermanlimerhotel.com	
Kangaroo Conservation Center	no response			Roger Nelson	animals@kangarooconservation.com	
Kansas City Zoo	Liz	Harmon	lizharmon@foztkc.org	Liz Harmon	lizharmon@foztkc.org	X
Knoxville Zoo	Mark	Armstrong	marka@knoxville-zoo.org	Lisa New	lnew@knoxville-zoo.org	X
Lee Richardson Zoo	Kristl	Newland	knewland@garden-city.org	Stephanie Fortner	sfortner@garden-city.org	X
Lehigh Valley Zoo				Tony LaPorte	tlaporte@lvzoo.org	X
Lincoln Children's Zoo	Randy	Scheer	rscheer@lincolnzoo.org	John Chappo	jchappo@lincolnzoo.org	X
Lincoln Park Zoo	Megan	Ross	mross@lpzoo.org	Dr. Robyn Barber	rbarbers@lpzoo.org	X
Lion County Safari	Denise	Urban	kbardee@aol.com	Marsha Abrams	reorads@lioncountysafari.com	X

**APPENDIX B
SPACE SURVEY RESPONSES**

INSTITUTION	IR FIRST NAME	IR LAST NAME	IR E-MAIL	IL	IL E-MAIL	Received completed Survey
Little Rock Zoo	Holly	Payne	holly.payne@state.nm.us	Mark Straw	mshaww@litterock.org	X
Living Desert Zoo and Gardens State Park	Susie	Kaselle	Skaselle@zoo.lacity.org	Holly Payne	holly.payne@state.nm.us	X
Los Angeles Zoo and Botanical Gardens	Gary	Michael	garymichael@louisvilleky.gov	John Lewis	John.Lewis@lacity.org	X
Louisville Zoological Garden	no response			Steve Wing	stevewing@louisvilleky.gov	X
Lubee Bat Conservancy	Carol	Hesch	chesch@memphiszoo.org	Alyson Walsh	awalsh@lubee.org	X
Memphis Zoo	Erik	Beck	ebeck@meskeparkzoo.com	Charles Brady	cbbrady@memphiszoo.org	X
Mesker Park Zoo and Botanic Garden	Jim	Dunster	jdun@miamidade.gov	Erik Beck	ebeck@meskeparkzoo.com	X
Miami Metrozoo				Steve Conners	scconner@miamidade.gov	X
Mill Mountain Zoo	Alex	Valer	Awaler@milwocny.com	David Orndorf	dorndorf@mmzoo.org	X
Miller Park Zoo	Jimmy	Pichner	Jim.Pichner@State.MN.US	John Tobias	jtobias@citybln.org	X
Milwaukee County Zoological Gardens				Bruce Beehler	BBeehler@milwocny.com	X
Minnesota Zoological Garden	Ken	Naugher	knaugher@montgomeriaval.gov	Kevin Willis	Kevin.Willis@State.MN.US	X
Monte Rey Bay Aquarium				Randy Hamilton	RHamilton@mbyvaq.org	X
Montgomery Zoo				Doug Goode	mwoodard@montgomeriaval.gov	X
Mote Marine Aquarium	no response			Daniel Bebak	danbebak@mote.org	X
Museum of Science				Ioannis Mlaoulis	imlaoulis@mos.org	X
Myakta City Lemur Reserve				Monica Hoffine	lcfmanager@earthlink.net	X
Mystic Aquarium	Jayne	Hardwick	jayne@napleszoo.com	Dr. Tracy Romano	troromano@mysticaquarium.org	X
Naples Zoo	Joe	DeGrauw	ldegrauw@nashvillezoo.org	David Terzloff	david@napleszoo.com	X
Nashville Zoo, Inc.	Steve	Sarro	steve.sarro@aviary.org	Comie Philipp	cphilipp@nashvillezoo.org	X
National Aquarium in Baltimore				Vicky Poole	VPoole@aquaria.org	X
National Aviary				Nicole Begley	nicole.begley@aviary.org	X
New England Aquarium	Ric	Urban	rutban@newportaquarium.com	Billy Spitzer	bspitzer@neaq.org	X
New York Aquarium				David Denardo	ddenardo@wcs.org	X
Newport Aquarium	no response			Eric Rose	erose@newportaquarium.com	X
Niabi Zoo				Thomas Staff	tstaff@niabzoo.com	X
North Carolina Aquarium at Fort Fisher				Donna Moffitt	donna.moffitt@ncmail.net	X
North Carolina Aquarium at Pine Knoll Shores				Brian Dorn	brian.dorn@ncmail.net	X
North Carolina Aquarium on Roanoke Island				Joe Malat	Joe.Malat@ncmail.net	X
North Carolina Zoological Park	Garmen	Murach	bc_zoo_keeper@co.brown.wi.us	Dr. Stephen Miller	stephen.miller@nczoo.org	X
Northwestern Wisconsin (NEW) Zoo				Neil Anderson	Anderson_NS@co.brown.wi.us	X
Northwestern Wisconsin Wildlife Park	Victor	Alm	victor@oaklandzoo.org	Dave Ellis	dave.ellis@nwreok.org	X
Oakland Zoo				Joel Parrott	jdparrott@oaklandzoo.org	X
Ocean Park Corporation	Darcy	Henthorn	DHenthorn@okczoo.com	Suzanne Gendron	suzanne.gendron@oceanpark.com.hk	X
Oklahoma City Zoological Park & Botanical Garden	Bob	Lastovca	birds@omahazoo.com	Brian Aucore	BrianA@okczoo.com	X
Omaha's Henry Doorly Zoo				Stephanie Hueftne	registrar@omahazoo.com	X
Oregon Coast Aquarium				Judy Tuttle	judy.tuttle@aquarium.org	X
Oregon Wildlife Foundation	Shawn	St. Michael	stmichaels@metro.dst.or.us	Nancy Noble	oregonwildlife@earthlink.net	X
Oregon Zoo	Keith	Lovett	kovelt@palmbeachzoo.org	Chris Pfefferkorn	cms.pfefferkorn@oregonzoo.org	X
Palm Beach Zoo at Dreher Park	Aliza	Baltz	baltz.aliza@phillyzoo.org	Keith Lovett	kovelt@palmbeachzoo.org	X
Philadelphia Zoo				Beth Bahner	bahner.beth@phillyzoo.org	X
Phoenix Zoo				Bert Castro	bcastro@thephzoo.com	X
Pittsburg Zoo & PPG Aquarium	Dr. Karen	Goodrowe-Beck	karenq@tacomaparks.com	Henry Kaopzyk	HKaopzyk@pittsburgzoo.org	X
Point Defiance Zoo & Aquarium	Laura	Arraga	larraga@southbendin.gov	John Houck	jhouck@pdza.org	X
Potawatomi Zoo	Tara	Harrison	tarharrison@jingham.org	Terence DeRosa	tderosa@southbendin.gov	X
Prospect Park Zoo	Dominick	Dorsa	ddorsa@wcs.org	Gerry Brady	gbrady@ingham.org	X
Pueblo Zoo	Manilyn	McBimrey	curator@pueblozoo.org	David Bocian	dbocian@wcs.org	X
Queens Zoo				Jonnene McFarlar	director@pueblozoo.org	X
Rachine Zoological Gardens				Scott Silver	ssilver@wcs.org	X
Red River Zoo				Jay Christie	jchristie@racinezoo.org	X
				Paula Grinestad	pgrinestad@redriverzoo.org	X

**APPENDIX B
SPACE SURVEY RESPONSES**

INSTITUTION	IR FIRST NAME	IR LAST NAME	IR E-MAIL	II	II E-MAIL	Received completed Survey
Ried Park Zoo	Scott	Barton	scott.barton@ucsonaz.gov	Scott Barton	scott.barton@ucsonaz.gov	X
Ripley's Aquarium				Joe Choromanski	jchoromanski@ripleys.com	
Ripley's Aquarium of the Smokies				Ed Diebold	eddiebold@riverbanks.org	X
Riverbanks Zoo & Botanical Garden	Martin	Vince	mvince@riverbanks.org	Joe Clawson	iclawson@scotstbluff.org	X
Riverside Zoo	Brent	Nelson	brentnelson@gmail.com	Tim French	tfrench@rwpzoo.org	X
Roger Williams Park Zoo	Pat	Sharkey	psnarkey@wpzoo.org	Sandy Walker	sandy@rollinghillswildlife.com	X
Rolling Hills Wildlife Adventure	Sandy	Walker	sandy@rollinghillswildlife.com	Dana Gilstad	grnzoo@ndak.net	X
Roosevelt Park Zoo				Ted Fox	henryfox@ongov.net	
Rosemond Gifford Zoo at Burnet Park	Ted	Fox	henryfox@ongov.net	Jim Schormmeler	jschormmeler@cityofsacramento.org	X
Sacramento Zoo	Susan	Healy	shealy@cityofsacramento.org	Peter Lang	safarwest@safarwest.com	
Safari West	no response			Jack Gisham	gisham@stlzoo.org	X
Saint Louis Zoo	Michael	Macek	maccek@stlzoo.org	Ann Konopik	akonopik@ci.salisbury.md.us	X
Salisbury Zoo	Ann	Konopik	akonopik@ci.salisbury.md.us	J. Steve WicKuske	micusker@sazoo-aq.org	X
San Antonio Zoological Gardens & Aquarium	Josef	San Miguel	curbirds@sazoo-aq.org	Bob Wiese	BWiese@sandiegozoo.org	X
San Diego Zoo	Dave	Rimlinger	drrimlinger@sandiegozoo.org	Bob Wiese	BWiese@sandiegozoo.org	X
San Diego Zoo's Wild Animal Park	Michael	Mace	mmace@sandiegozoo.org	Bob Jenkins	bobj@sfzoo.org	X
San Francisco Zoological Gardens				Ron Glazier	rglazier@ci.santa-ana.ca.us	X
San Francisco Zoological Gardens	Ethan	Fisher	efisher@ci.santa-ana.ca.us	Nancy McToldridge	nmcToldridge@sbzoo.org	X
Santa Barbara Zoological Gardens	Peter	Buchholz	pbuchholz@sbzoo.org	Kathy Russell	kathy.russell@sfcc.edu	X
Santa Fe Community College Teaching Zoo				Mike Borders	mike@decparks.com	X
Sea Life Park by Dolphin Discovery				Renato Lenzi	rlenzi@dolphindiscovery.com	X
Seattle Aquarium				C.J. Casson	CJ.Casson@Seattle.Gov	X
SeaWorld San Antonio	no response			Dave Force	dave.force@seaworld.com	X
SeaWorld Orlando				Sherry Branch		X
SeaWorld San Diego	Wendy	Turner	wendy.turner@SeaWorld.com	Michael Scarpuzzi	michael.scarpuzz@seaworld.com	X
Sedgwick County Zoo	Joe	Barkowski	jbarkski@aol.com	Jim Marlett	jmarlett@scz.org	X
Semeca Park Zoo	David	Hamilton	dhamilton@monroecounty.gov	David Hamilton	dhamilton@monroecounty.gov	X
Sequoia Park Zoo	Gretchen	Ziegler	gziegler@ci.eureka.ca.gov	Gretchen Ziegler	gziegler@ci.eureka.ca.gov	X
Shark Reef at Mandalay Bay				Brian Robison	brobison@mrgmail.com	
Six Flags Discovery Kingdom	Kristin	Wasson	kWasson@sfb.com	Kristin Wasson	kWasson@sfb.com	X
Smithsonian National Zoological Park	Dan	Boritt	boritt@si.edu	Don Moore	moored@si.edu	X
South Carolina Aquarium				Jason Critchton	jcritchton@scsaquarium.org	
Squam Lakes Natural Science Center	no response			Iain MacLeod	iain.macleod@nhnature.org	X
St. Augustine Alligator Farm	Amranda	Whitaker	amwhitaker@alligatorfarm.com	John Brueggen	JohnBrueggen@aol.com	X
St. Paul's Como Zoo	no response			Joanne Kelly	joanne.kelly@ci.sipaul.mn.us	X
Staten Island Zoo	no response			John Callabiano	szoocded@aol.com	
Steve Martin's Natural Encounters, Inc.	Kevin	O'Brien	k.obrien@naturalencounters.com	Rob Bules	r.bules@naturalencounters.com	X
Sunset Zoological Park	Mark	Ryan	ryan@ci.mantattan.kz.us	Scott Schomemaker	stroemmaker@ci.mantattan.kz.us	X
Tampa's Lowry Park Zoo	Greg	Stoppelmoor	greg.stoppelmoor@lowryparkzoo.com	Lex Salisbury	lex.salisbury@lowryparkzoo.com	X
Tauphus Park Zoo	Bill	Gersonde	bgersonde@idahofallszoo.org	Bill Gersonde	bgersonde@idahofallszoo.org	X
Tennessee Aquarium				Dave Collins	dec@tennis.org	X
Texas State Aquarium				Sarah Paige	spaige@txstateaq.org	
Texas Zoo	Anqi	Killough	animalcare@texaszoo.org	Doug Hotle	dhotle@texaszoo.org	
The Butterfly House	no response			Joseph Norton	joe.norton@mobot.org	
The David Taylor Zoo of Emporia				Steve Treblicock	streblicock@emporia.tws	X
The Florida Aquarium				Thomas Stork	stork@flaquarium.org	
The Good Zoo at Oglebay				Joe Greathouse	igreathouse@oglebay-resort.com	
The Living Desert	Kerianne	Mills	kmills@livingdesert.org	Peter Siminski	psiminski@livingdesert.org	
The Living Seas				Jane Davis	Jane.Davis@disney.com	
The Maryland Zoo in Baltimore	Mike	McClure	mike.mcclure@marylandzoo.org	Don Hutchinson	don.hutchinson@marylandzoo.org	X

**APPENDIX B
SPACE SURVEY RESPONSES**

INSTITUTION	IR FIRST NAME	IR LAST NAME	IR E-MAIL	IL	IL E-MAIL	Received completed Survey
The Wilds	no response					
Toledo Zoo	Robert	Webster	robert.webster@toledozoo.org	Evan Blumer	ebumer@thewilds.org	X
Topeka Zoo				Ron Fricke	ron.fricke@toledozoo.org	
Toronto Zoo	William	Rapley	wrapley@torontozoo.ca	Michael Coker	mcoker@topeka.org	
Tracy Aviary	Rodger	Sweeney	RodgerS@Tracyaviary.org	William Rapley	wrapley@torontozoo.ca	X
Trevor Zoo						X
Tulsa Zoo and Living Museum	Diane	Fell	DianeFell@ci.tulsa.ok.us	Jonathan Meigs	jntrez@aol.com	X
Turtle Back Zoo	Maggie	Liquori	coffeefrog@yahoo.com	Gary Lunsford	garylunsford@ci.tulsa.ok.us	X
Univ. of Nebraska				Maggie Liquori	coffeefrog@worldnet.att.net	
Utah's Hogle Zoo	Jane	Larson	jlarson@hoglezoo.org	Jeffrey French	jfrench@mail.unomaha.edu	
Virginia Aquarium & Marine Science Center				Kimberly Davidso	kdavidson@hoglezoo.org	
Virginia Zoological Park	Tammy	Williams	tamara.williams@norfolk.gov	Dennis Thoney	Dennis.Thoney@vanaqua.org	X
Walter D. Stone Memorial Zoo	Friederck	Beall	fbeall@zoonewendland.com	Mark Swindle	MSwindle@VirginiaAquarium.com	
Western North Carolina Nature Center	no response			Louise Hill	louise.hill@norfolk.gov	
White Oak Conservation Center				Judi Manning	jmanning@zoonewendland.com	
Wildf Carid Survival and Research Center				Bob Fay	bfay@ashwillenc.gov	
Wildlife Safari	Dan	Brands	curator@wildlifesafari.net	Susan Lyndaker	slindsey_wccc@onemain.com	X
Wildlife World Zoo, Inc.	Jack	Ewert	jackewert@wildlifeworld.com	Dan Van Slyke	executive@director@wildlifesafari.net	
Woodland Park Zoo	Mark	Myers	mark.myers@zoo.org	Mickey Olsson	mickeyolsson@wildlifeworld.com	
Zoo Atlanta				Deborah B. Jense	deborah.jensen@zoo.org	X
Zoo de Granby	Julie	Séguin	jseguin@zooodegranby.com	Lori Perkins	lperkins@zooatlanta.org	X
Zoo Montana				Steve Burns	sburns@cityofboise.org	X
ZOOAMERICA North American Wildlife Park				Dr. Julie Séguin	jseguin@zooodegranby.com	X
				Travis Goebel	tgoebel@zooomontana.org	X
				Dale Snyder	dsnyder@hershenva.com	X

Need 90 IR responses for 80% return

APPENDIX C
SPACE SURVEY TOTALS

Piciformes RCP Space Survey Totals
2009

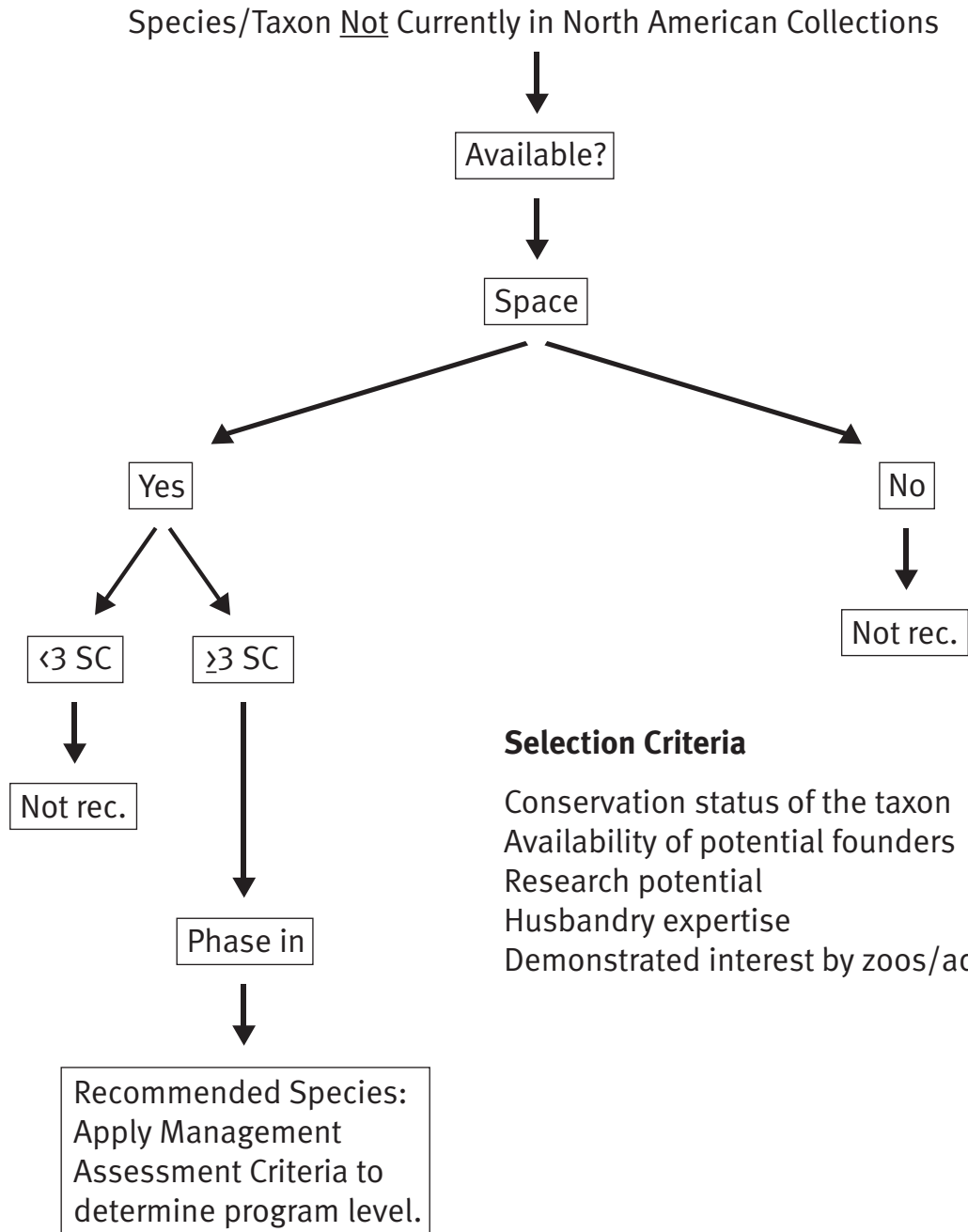
Species highlighted in yellow are held only by the Dallas World Aquarium

Common Name	Scientific Name	Sex ratio of specimens currently in collection (e.g., 1,1,2)			Sex ratio of specimens that you plan to have in collection in three years?			Target Population Size DERP, PMP, SSP		
		M	F	U	M	F	U	M	F	U
Woodpeckers										
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>				1	1		2	2	
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	3	1		2	2		2	2	
Puerto Rican woodpecker	<i>Melanerpes portoricensis</i>	1	1		4	4		0	0	
Gila woodpecker	<i>Melanerpes uropygialis</i>	2	3	1	4	4		3	3	
Red-breasted sapsucker	<i>Sphyrapicus ruber</i>	1	1	1			2	2	2	
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	0	2	2	2	2	3	2	2	
Downy woodpecker	<i>Picoides pubescens</i>	3	2		6	7	1	7	7	
Red-cockaded woodpecker	<i>Picoides borealis</i>	1			1			2	2	
Common flicker	<i>Colaptes auratus</i>	2		2	4	3	2	5	5	
Pileated woodpecker	<i>Dryocopus pileatus</i>	5	3	3	9	8	3	10	10	
Black-headed woodpecker	<i>Picus erythrogylus</i>	1						0	0	
Greater yellow-naped woodpecker	<i>Picus flavinucha</i>	4	6		8	8		10	10	
Golden-backed woodpecker	<i>Dinopium javanense</i>	2	2		5	5		5	5	
Barbets										
Fire-tufted barbet	<i>Ptilopogon pyrolophus</i>	2	1	1	5	5		0	0	
Blue-crowned barbet	<i>Megalaima asiatica</i>				1	1		0	0	
Gaudy red-throated barbet	<i>Megalaima mystacophanus</i>	1	4		5	5		10	10	
Black-browed barbet	<i>Megalaima oorti</i>	2			1			0	0	
Double-toothed barbet	<i>Lybius bidentatus</i>	2	1		2	2		0	0	
Bearded barbet	<i>Lybius dubius</i>	24	21	0	46	45	8	50	50	
D'Arnaud's barbet	<i>Trachyphonus darnaudii</i>		1		3	3		0	0	
Red-and-yellow barbet	<i>Trachyphonus erythrocephalus</i>	10	7	2	28	28	2	40	40	
Spot-crowned barbet	<i>Capito maculicoronatus</i>	4	4		8	8		0	0	
Black-spotted barbet	<i>Capito niger</i>	5	1		13	13		0	0	
Red-headed barbet	<i>Eubucco bourcierii</i>	2	0		4	4		0	0	
Prong-billed barbet	<i>Semnorhis frantzii</i>	1	1		3	3				
Toucan barbet	<i>Semnorhis tucanus</i>				4	4		10	10	
Toucanets/ Aracari										
Crimson-rumped toucanet	<i>Aulacorhynchus haematopygus</i>	10	10		22	22		0	0	

**APPENDIX C
SPACE SURVEY TOTALS**

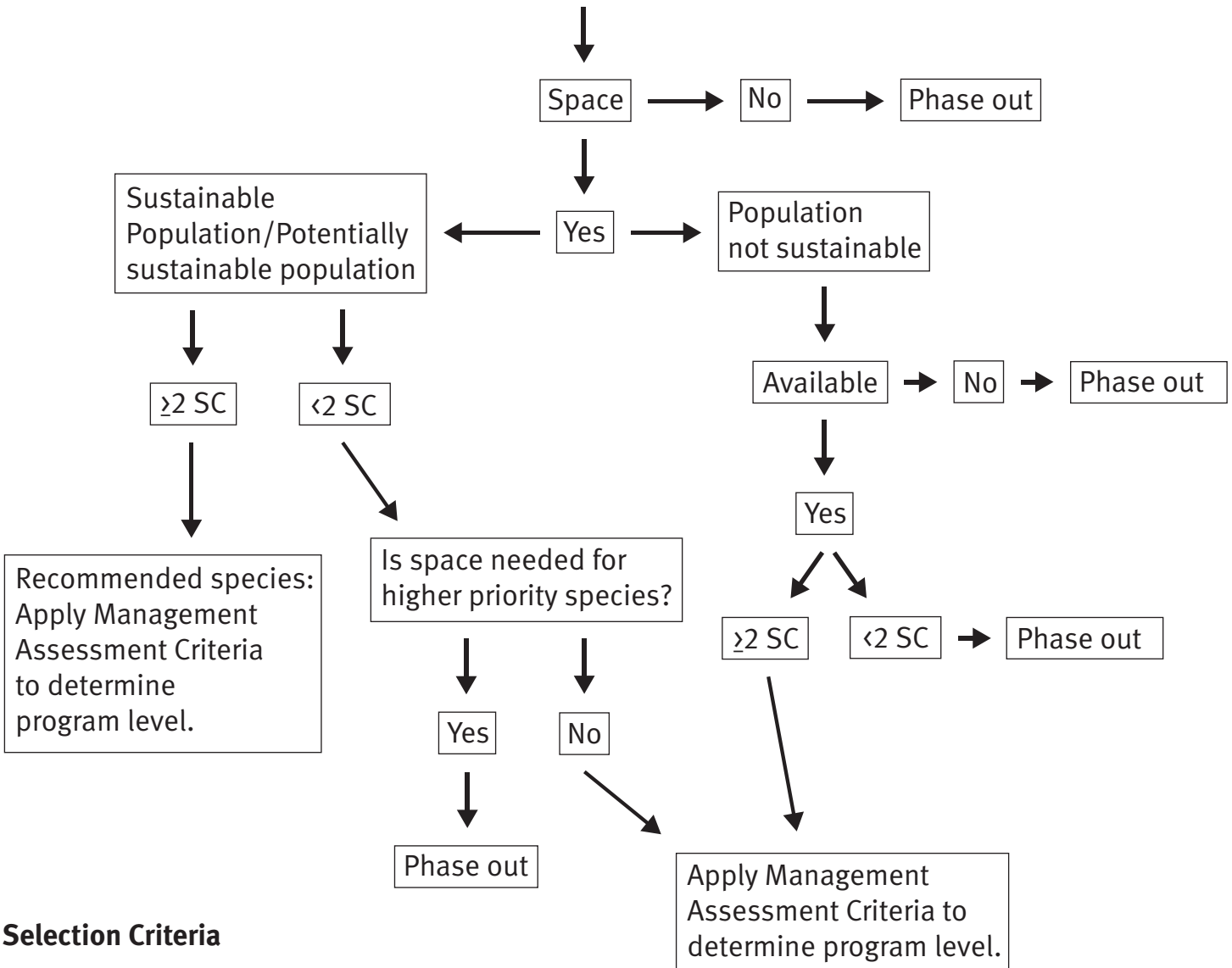
Common Name	Scientific Name	Sex ratio of specimens currently in collection (e.g., 1,1,2)			Sex ratio of specimens that you plan to have in collection in three years?			Target Population Size DERP, PMP, SSP	
Emerald toucanet	<i>Aulacorhynchus prasinus</i>	8	4	1	20	20	10	10	
Blue-banded toucanet	<i>Aulacorhynchus caeruleogularis</i>	2	5		8	8	0	0	
Chestnut-tipped toucanet	<i>Aulacorhynchus derbianus</i>	5	1		5	5	0	0	
Groove-billed toucanet	<i>Aulacorhynchus sulcatus</i>	4	1		8	8	0	0	
Guianan toucanet	<i>Selenidera culik</i>	4	5		10	10	0	0	
Gould's toucanet	<i>Selenidera gouldii</i>				5	5	0	0	
Spot-billed toucanet	<i>Selenidera maculirostris</i>	5	4		11	10	0	0	
Black-necked aracari	<i>Pteroglossus aracari</i>	5	4	2	11	11	0	0	
Ivory-bill aracari	<i>Pteroglossus azara</i>	4	3		9	9	0	0	
Northwest Ivory-bill aracari	<i>Pteroglossus flavirostris</i>	8	8		12	12	0	0	
Saffron toucanet	<i>Pteroglossus balloni</i>	3	3		8	8	0	0	
Curl-crested aracari	<i>Pteroglossus beauharnaesii</i>	20	12		31	31	40	40	
Chestnut-eared aracari	<i>Pteroglossus castaneotis</i>	4	5		9	9	0	0	
Fiery-billed aracari	<i>Pteroglossus frantzii</i>	5	2		8	8	0	0	
Lettered aracari	<i>Pteroglossus inscriptus</i>				10	10	0	0	
Mary-banded aracari	<i>Pteroglossus pluricinctus</i>	3	2		5	5	0	0	
Collared aracari	<i>Pteroglossus torquatus</i>	6	4		12	12	0	0	
Ecuadorian collared aracari	<i>Pteroglossus torquatus erythropygus</i>	15	15		30	30	15	15	
Green aracari	<i>Pteroglossus viridis</i>	51	37	6	72	73	50	50	
Toucans									
Plate-billed mountain toucan	<i>Andigena laminirostris</i>	6	1		8	8	0	0	
Chestnutmandible bicolorbill toucan	<i>Ramphastos ambiguaus</i>	24	20	2	26	27	50	50	
Red-breasted toucan	<i>Ramphastos dicolorus</i>	4	2		10	10	0	0	
Keel-billed toucan	<i>Ramphastos sulfuratus</i>	27	28	1	34	34	50	50	
Swainson's toucan	<i>Ramphastos swainsonii</i>	1	1	0	1	1	0	0	
Toco toucan	<i>Ramphastos toco</i>	30	29	0	54	54	50	50	
Red-billed toucan	<i>Ramphastos tucanus</i>	9	7		15	15	0	0	
Channel-billed toucan	<i>Ramphastos vitellinus</i>	8	4		25	25	0	0	
		M	F	U	M	F	U		
		349	279	24	648	645	41		
Totals=		652			648				
Total Current Individuals=		1334			645				
Total Three Year Individuals=					41				

Piciformes TAG RCP Decision Tree



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Species/Taxon Currently in North American Collections



Selection Criteria

- Conservation status of the taxon
- Availability of potential founders
- Research potential
- Husbandry expertise
- Demonstrated interest by zoos/aquariums and others