

# **Institutional Collection Plan**

## **SEQUOIA PARK ZOO**

January 2005

Revised 2009, 2013, 2018

## **Introduction**

A zoo's Institutional Collection Plan (ICP) is an analysis of the animal collection: current, future and some former species of significance, as it pertains to the zoo's mission, goals, programs and master plan. It is used to provide the rationale for the existing animal collection as well as to guide the collection's future development to achieve effective utilization of limited space and resources. This ICP should be used to help direct resources and set priorities for these resources (including operational budgeting, fundraising, capital campaigns, etc.). Furthermore, this ICP provides a focused direction for management of the zoo as well as a clear picture of planned collection activities to staff, volunteers, Sequoia Park Zoo Foundation board members, City officials, and to the general public.

Prior to 2005, Sequoia Park Zoo managed its animal collection without a formal Institutional Collection Plan. Following the evolution of industry standards and complying with new accreditation requirements from the Association of Zoos and Aquariums (AZA), the zoo's first ICP was developed during the years 2004/05. The Zoo Curator/Supervisor received training for ICP development at an AZA workshop in the spring of 2004. This document was originally developed by the Zoo Curator/Supervisor and the primary animal care staff. This document was revised and updated in 2009, 2013 and 2017/18 by animal care staff, Animal Curator and Zoo Director. New to the 2018 revision is the addition of a botanical collection plan, which describes the gradual implementation of a Native Plant Landscaping Policy (see Table 4).

While this plan provides clear guidance, it should be considered and used as a flexible document, allowing the zoo to respond to changes in priority, availability, resources, professional captive animal management needs, staff interest and expertise and the programming needs of the community.

## **Background**

Some of Sequoia Park Zoo's current animal collection reflects a historic trend of exhibiting an eclectic variety of species, often opportunistically and without integration or theming. The past decades have seen a slow shift away from this management style. More exhibits and areas of the zoo now contain species that relate to nearby species either zoo-geographically, taxonomically or by sharing a unifying theme. One defined theme area of the zoo is the ***Barnyard***, where domesticated animals are featured for contact experiences, and wild species that use farms as habitat are exhibited. Domestication and related topics are other central themes. A second area is the ***Nancy Hilfiker Aviary***, where birds and bird-watching are the general themes, with broad global and taxonomic representation. Progress has been made on two additional themes with new and renovated exhibits: ***Biodiversity Hotspot – South America*** and ***Asian Forests***. ***Native Predators*** zone was launched with the opening of Watershed Heroes exhibits in 2014. Three older exhibits remain at the northern end of the zoo. This location is planned to become the future theme of ***Island Adaptations***. A final theme of Prairie Keystone was eliminated from the revised 2017 master plan and this ICP.

ICPs are typically designed to dovetail with a zoo’s active master plan document. Sequoia Park Zoo’s current facility master plan was first developed in 2006 and was based upon species identified in the ICP, using selection criteria described below. Due to its small size and limited resources, Sequoia Park Zoo has restrictions that many larger zoos do not, which impact the ICP in significant ways. Current land space equals approximately 5 acres, all of which are developed. New exhibit areas are possible only if old exhibits are decommissioned and/or if additional adjacent land is added from beyond the zoo’s current perimeter. Other limitations include operating budget, staff size/expertise, animal transportation in and out of Humboldt County, veterinary expertise/availability, and quarantine/holding space. All of these conditions impact the numbers and kinds of animals we can properly maintain, and all must be taken into account when considering acquisition of a new species. Emphasis on including compatible mixed species to existing or new exhibits is an effective way to add new interest, enhance quality of exhibits and use resources efficiently.

The ICP should always complement and support our zoo’s mission, which is stated as follows:

*Sequoia Park Zoo inspires conservation of the natural world by instilling wonder, respect and passion for wildlife.*

*We fulfill our mission by:*

- *Creating intimate connections between people and animals*
- *Providing the highest standards of animal care and exhibitry*
- *Providing innovative educational experiences*
- *Partnering with other institutions to ensure sustainability of zoo and wild populations*
- *Providing a place for our community to meet, relax, and enjoy*
- *Appreciating and utilizing our unique redwood setting*

## **Methodology**

This ICP was developed using protocols from the ICP workshop and other zoological institutions’ ICP documents as examples. Zoo staff selected taxon criteria based on general industry standards and focused especially on the factors particular to Sequoia Park Zoo. *See Taxon Selection Criteria document in appendix for detailed description.* A basic decision tree flowchart was used for scoring taxa, and each species in the zoo’s collection is sorted through the tree and given a score. Species receiving lower score values demonstrate a better “fit” for Sequoia Park Zoo than species receiving higher scores; however, these scores are only relative to each other and will not be the sole basis upon which decisions are made regarding long-term plans for each species. *See Decision Tree diagram in appendix.* Score values and action plans for

current species are found in the “Results” section. Proposed new species are researched using a Species Worksheet document, which is then used to score on the decision tree to help determine if the species will be acquired.

This ICP is reviewed annually, and formally revised on a four-year cycle. First revision was completed 2009, second revision 2013, with minor changes to selection criteria to more clearly define Conservation Education Value. In 2017, the ICP was revised and exhibitry value clarified to emphasize mixed species compatibility. **The next scheduled revision: 2022.**

## **Terminology**

Sex ratio code translates as in this example: 2.3.1 (two males, three females, one unknown sex).

SSP – Species Survival Plan (a cooperative and highly managed captive breeding plan via accredited zoos, using three levels of red, yellow, green).

NRRH – non-releasable rehabilitated

R - Rescued

Exhibit codes correspond to zoo exhibits as shown on map (see appendix).

## **Scoring Results and Plans**

The results of analyzing the current animal collection, recently eliminated and future planned species, and the existing animal exhibits using the selection criteria and decision tree are summarized in the following three tables, organized by species’ common names alphabetically, and by exhibit.

Table 1: Existing Animal Collection Scores & Management Plans

Common Name / <i>Scientific Name</i>	D-T Score	Current sex ratio / status	Program	Zone/Exhibit	Management Plan	Timeline
African gray parrot/ <i>Psittacus erithacus</i>	2	1.1	No	<i>Aviary</i>	Acquired opportunistically for pet messaging, could do 0.2	Ongoing
Alpaca / <i>Lama Pacos huacaya</i>	4	0.1	No	<i>Barnyard</i> 10	Maintain 0.2, or 1.1 (neutered), or 1.0 (neutered) with llamas for contact/display/theme. Contingent upon having pasture space available	Ongoing
Axolotl / <i>Ambystoma Mexicanum</i>	14	1.0, intact	No	K kitchen temp exhibit	No long-term plan for species; some potential for use in education programs; manage as is until phase-out	P-O
Banana slug / <i>Ariolimax Columbianus</i>	8	Colony; breeding	No	<i>SoF</i> 3	Maintain colony of appropriate size/viability, replace colonies with collected groups as needed; request permission from state to allow breeding	Ongoing
Bald eagle / <i>Haliaeetus leucocephalus</i>	1	0.2	NRRH	<i>Native Predators</i>	Maintain up to 4 individuals in current exhibit	Ongoing
Band-tailed pigeon/ <i>Patagioenas fasciata</i>	6	0.0.2	No	<i>Aviary</i>	Opportunistic NRRH group for display purposes, managed as non-breeding.	P-O
Black widow spider / <i>Latrodectus hesperus</i>	8	0.1, intact	No	<i>Barnyard</i> 22	Maintain 0.2 separately on exhibit as non-breeding for display/theme purposes	Ongoing
Black headed spider monkey / <i>Ateles fusciceps rufiventris</i>	1	1.0 vas/neuter 0.1 spayed (medical reasons)	SSP yellow	<b>E3</b>	Maintain as holding group for senior animals' lifespan, acquire companion(s) for Jake if feasible or relocate to appropriate facility, depending on SSP need.	P-O

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Common Name / <i>Scientific Name</i>	D-T Score	Current sex ratio / status	Program	Zone/Exhibit	Management Plan	Timeline
Bush dog / <i>Speothos venaticus</i>	1	2.0 siblings, intact	Studbook	<b>E1</b>	Acquire female for breeding, send Mato to New England; maintain pack of 2+	Ongoing
California kingsnake / <i>Lampropeltis Californiae</i>	8	1.0, intact 1.0 mountain ssp	N	<b>SoF</b> 6	Maintain for display/theme and education purposes	Ongoing
California roach / <i>Hesperoleucus symmetricus</i>	12	Colony, breeding	No	<b>SoF</b>	Maintain for education purposes; manage population size by culling/feeding out	Ongoing
Chacoan peccary / <i>Catagonus wagneri</i>	1	5.0, intact	SSP yellow	<b>TABH</b> E10/11	Maintain as bachelor group per SSP for display/theme purposes, explore mixability with hoofstock Advocate breeding to SSP if appropriate.	Ongoing
Chilean flamingo / <i>Phoenicopterus chilensis</i>	1	17.11, intact	SSP green	<b>TABH</b> E7	Maintain for display/theme; breed to increase flock size/surplus as per SSP, target 50-60	Ongoing
Coast garter snake / <i>Thamnophis Elegans terrestris</i>	8	1.0, intact	No	<b>SoF</b>	Maintain for display/theme	Ongoing
Greater rhea / <i>Rhea americana</i>	4	2.0, intact	SSP yellow	<b>TABH</b> E10/11	Maintain for display/theme. P.O. males, refer to SSP for females	PO males
Cotton-topped tamarin / <i>Saguinus oedipus</i>	1	2.0, one intact one neutered	SSP green	AV holding <b>TABH</b>	Maintain as bachelor or non-breeding pair in holding/display. New exhibit in MP zone <b>TABH</b>	Ongoing
Crested screamer / <i>Chauna torquata</i>	3	3.2, intact	SSP yellow	<b>TABH</b> E7	Maintain pair for display/theme/ mixed species Breed if placement likely. Look into egg sexing to produce sexes based on SSP needs	Ongoing
Dampwood termite / <i>Zootermopsis angusticollis</i>	6	Colony	No	<b>SoF</b>	Maintain breeding colony for display/theme purposes	Ongoing

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Common Name / <i>Scientific Name</i>	D-T Score	Current sex ratio / status	Program	Zone/Exhibit	Management Plan	Timeline
Domestic cat / <i>Felis catus</i>	2	1.0, neutered	No	free-range with bib/catio	Maintain for contact/theme/rodent control purposes if bird predation is controlled	Ongoing
Domestic chicken (various breeds) / <i>Gallus gallus domestic</i>	4	~1.13 (flock), all intact	No	<b>Barnyard</b> free-range	Maintain for contact /theme purposes; Manage non-breeding flock up to ~15, multiple breeds	Ongoing
Domestic miniature donkey / <i>Equus asinus domestic miniature</i>	4	1.2, neutered male	No	<b>Barnyard</b>	Maintain small group for contact/display/theme purposes. Contingent upon having appropriate pasture space	Ongoing
Domestic goat (various breeds) / <i>Capra aegagrus hircus</i>	4	4.3 neutered	No	<b>Barnyard</b>	Maintain for contact/display/theme purposes Manageable non-breeding herd size of variety; Consider acquiring/breeding minor breeds	Ongoing
Domestic pig, small breeds / <i>Sus scrofa scrofa domestic</i>	2	1.1 (neutered male)	Rare breed	<b>Barnyard</b>	Maintain for theme purposes as temperament/size/management allows	Ongoing
Domestic rabbit / <i>Oryctolagus cuniculus Domestic</i>	4	2.0, neutered	No	<b>Barnyard</b>	Phase out due to temperament issues and exhibit	PO
Domestic sheep (various breeds) / <i>Ovis aries aries</i>	4	0.2 intact	No	<b>Barnyard</b>	Maintain variety of 2-4 for contact/theme Consider acquiring/breeding minor breeds	Ongoing
European honeybee / <i>Apis mellifera</i>	2	1-2 colonies, intact	No	<b>Barnyard</b>	Maintain for display/theme Manage as display hive with second as back-up opportunistically	Ongoing
Golden pheasant / <i>Chrysolophus Pictus</i>	4	1.2 intact	No	<b>Aviary</b>	Maintain trio non-breeding for display purposes	Ongoing

Table 1: Existing Animal Collection Scores & Management Plans

<b>Common Name / Scientific Name</b>	<b>D-T Score</b>	<b>Current sex ratio / status</b>	<b>Program</b>	<b>Zone/Exhibit</b>	<b>Management Plan</b>	<b>Timeline</b>
Green heron / <i>Butorides virescens</i>	6	0.0.1, intact	No	<i>Aviary</i>	Opportunistic NRRH for display purposes, consider small egret if not available	Ongoing
Guira cuckoo / <i>Guira Guira</i>	4	0.4, intact	No	<i>Aviary</i>	Maintain group for display purposes; Consider breeding	Ongoing
House mouse / <i>Mus musculus</i>	2	Colony, intact	No	<i>Barnyard</i>	Maintain colony for display/theme purposes Manage appropriate size for exhibit 8-14 non-breeding single sex	Ongoing
Llama / <i>Lama Glama</i>	4	0.1, intact	No	<i>Barnyard</i>	Maintain 1-2 with alpacas for contact/display/theme purposes	Ongoing
Indian muntjac / <i>Muntiacus muntjak</i>	4	1.0, neutered	No	<i>Asian Forests E21</i>	Maintain for display/theme and mixed species. Consider Reeves as alternative. Exhibit size may be more appropriate for smaller species, unless exhibit expanded	Ongoing
MGH Cockroach / <i>Gromphadorhina Portentosa</i>	6	Colony, breeding	No	<i>LL</i>	Maintain for education programs; feed out surplus	Ongoing
Nicobar pigeon / <i>Caloenas Nicobarica</i>	3	1.1 breeding pair	No	<i>Aviary</i>	Pedigree unknown. Will have to increase flock size to contribute to SSP/breeding.	Ongoing or P-O
North American porcupine / <i>Erethizon dorsatum</i>	2	0.1	NRRH SSP yellow	<i>N Predators</i>	Program animal + mixed species with Spotted owl. Consider another 0.1.	Ongoing
Northern spotted owl / <i>Strix occidentalis</i>	2	0.1 intact	No threatened	<i>N Predators</i>	Maintain opportunistically. Consider another 0.1 or barred (program animal if appropriate for welfare)	Ongoing
Northwestern salamander / <i>Ambystoma gracile</i>	8	0.0.1, intact	No	<i>SoF 2</i>	Maintain for display/theme purposes; consider acquiring second for back-up; other native species	Ongoing



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Common Name / Scientific Name	D-T Score	Current sex ratio / status	Program	Zone/Exhibit	Management Plan	Timeline
Orinoco goose / <i>Neochen jubata</i>	1	0.3, intact	Studbook	<b>TABH</b> E7	Maintain as mixed species with flamingo and display/theme/grass control; add 0.1	Ongoing
Coast giant salamander / <i>Dicamptodon tenebrosus</i>	8	0.0.1, intact	No	<b>SoF</b> 1	Maintain for display/theme purposes Consider acquiring second for back-up	Ongoing
Pacific gopher snake / <i>Pituophis catenifer catenifer</i>	8	0.1 intact	No	<b>SoF</b> 7	Maintain for display/theme purposes	Ongoing
Patagonian cavy / <i>Dolichotis patagonum</i>	3	4.2, intact or females implanted as needed	No	<b>TABH</b> E8	Maintain for display/mixed species/theme purposes not to exceed pasture capacity Manage breeding for AZA zoo needs	Ongoing
North American river otter / <i>Lontra canadensis</i>	1	3.0	SSP green	<b>Native Predators</b>	Maintain bachelor group until requested otherwise as per SSP recommendations	Ongoing
Raccoon / <i>Procyon lotor</i>	2	1.1, both neutered	NRRH	<b>Barnyard</b>	Maintain for display and potential program animal	Ongoing
Raven / <i>Corvus corax</i>	6	1.1, intact Non-breeding	NRRH	Off exhibit <b>N Predators</b>	Maintain in holding until new exhibit in MP zone <b>N Predators</b>	Ongoing  TBD
Red junglefowl / <i>Gallus gallus</i>	8	1.1, intact	no	<b>Barnyard</b> free range	Maintain for theme/display; non- breeding	Ongoing
Red panda / <i>Ailurus fulgens</i>	1	1.1, intact 0.1 offspring	SSP green	<b>Asian Forests</b> E21	Maintain for display, theme, mixed species; breed or hold as SSP and holding space allows; surplus offspring	Ongoing
Rubber boa / <i>Charina bottae</i>	8	2.0, intact	No	<b>SoF</b> 8	Maintain together for display/theme purposes	Ongoing
Salmonid species / <i>Oncorhynchus tshawytscha</i>	2	Single aged groups, multiple species	No	<b>Native Predators</b>	Maintain single aged groups from varying species as available. Acquire from hatcheries as needed for attrition. May cull due to overcrowding as permit allows	Ongoing

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<b>Common Name / Scientific Name</b>	<b>D-T Score</b>	<b>Current sex ratio / status</b>	<b>Program</b>	<b>Zone/Exhibit</b>	<b>Management Plan</b>	<b>Timeline</b>
Scarlet ibis / <i>Eudocimus ruber</i>	3	0.3, intact	SSP yellow	<b>Aviary</b>	Maintain as small flock; test for gender as per SSP	Ongoing
Spotted whistling duck / <i>Dendrocygna guttata</i>	3	1.1, siblings	SSP red	<b>Aviary</b>	Breed when non related individual available, Surplus other individual	Ongoing
Striped skunk / <i>Mephitis mephitis</i>	2	1.0, neutered	?	<b>Barnyard 14 AV 1 and 2</b>	Maintain for display and program animal. Alternate space with opossum	Ongoing
Virginia opossum / <i>Didelphis virginiana</i>	6	1.0 intact	NRRH	<b>Barnyard 14/ AV 1 and 2</b>	Maintain solitary animal for display/theme/program animal; Replace as needed and available	Ongoing
Western pond turtle / <i>Actinemys marmorata</i>	2	2.2	SSP yellow	<b>SoF 4</b>	Maintain for display/theme purposes; Consider conservation breeding program	Ongoing
White-handed gibbon / <i>Hylobates lar</i>	1	1.0 vasectomy 0.1 intact	SSP yellow	<b>E4</b>	Maintain pair (highly bonded) for display New exhibit in MP zone <b>Island Adaptations</b>	Ongoing TBD
Yak, domestic / <i>Bos grunniens grunniens domestic</i>	12	1.1, castrated	No	<b>E16/17</b>	Opportunistic acquisition/rescue; maintain as space and plans allow	P/O

Table 2: Former and Future Animal Collection Scores &amp; Action Plans

Common Name / Scientific Name	D-T Score	Sex ratio / status	Program	Zone/Exhibit	Plan	Timeline
Agouti or Acouchi	3		SSP yellow		No, due to NO tropical building in MP	TBD
American black bear	2	Depends on exhibit capacity, availability	No NRRH	<i>N Predators</i>	Acquire from CADFW or AZA surplus; mix with coyotes	2019 - 2021
Armadillo sp	TBD		SSP yellow	<i>program</i>		
Azure-winged magpie	PO			<i>Aviary</i>	Phased-out due to incompatibility in aviary	2005
Badger	3			<i>Prairie Keystone</i>	Removed PK from Master plan	
Baird's tapir	TBD		Studbook	<i>TABH</i>	More research needed to determine if mixable	TBD
Barn owl	2	solitary	NRRH	Off-exhibit or <b>BY</b>	Consider for new BY exhibit and/or program if access solved. Alternative is taxidermy animal in BY	None
Binturong	TBD	Breeding pair	SSP yellow	<i>Asian Forests</i>	Research if mixable or as program animal. Exhibit may rotate with Clouded leopard?	TBD
Black-footed ferret	1	Non-breeding	SSP yellow	<i>Prairie Keystone</i>	PK removed from MP	TBD
Black-tailed prairie dog	1	Non-breeding colony	No	<i>Prairie Keystone</i>	PK removed from MP	2005 TBD
Blue-grey tanager	1	Breeding pair	SSP	<i>Aviary</i>	Breeding unsuccessful due to rodent intrusion; consider once AV mesh replaced	none
Bobcat	2	2 – 3, research needed	SSP yellow, NRRH	<i>Native Predators</i>	Acquire when suitable exhibit available	TBD
Burrowing owl	2		SSP yellow	<i>Prairie Keystone</i>	PK removed from MP	TBD
Capybara	4	Group	SSP yellow	<i>TABH</i>	Acquire when suitable mixes species exhibit available. Hot water feature!	TBD
Cedar waxwing	8		No	<i>Aviary</i>	Good species for AV until rodent intrusion	PO 2010
Chilean rose-haired tarantula	10	0.1, intact	No	holding	Maintain for education programming, or surplus	2015

Table 2: Former and Future Animal Collection Scores &amp; Action Plans

Common Name / Scientific Name	D-T Score	Sex ratio / status	Program	Zone/Exhibit	Plan	Timeline
Chimpanzee	PO	1.0	SSP	E2	Phased out with attrition	2007/Permanent
Chinchilla	6	Non-breeding group	No	<b>TABH, program</b>	Consider exhibit near BY or for program animal	TBD
Clouded leopard	4	TBD	SSP yellow	<b>Asian forests</b>	Rotate with Binturong	TBD
Common peafowl	4	n/a	No	<b>Free range</b>	Phased out due to incompatibility with other exhibits (flamingo, etc.) and outdoor café; consider acquiring if above resolved	2008
Coyote	2	Non-breeding social group	No	<b>Native Predators</b>	Acquire when suitable exhibit available as per facility MP	TBD
Domestic cow			No	<b>BY</b>	Consider mini breed for BY if grazing, housing appropriate	
Domestic dog	2	2	Rescue/ Shelter	<b>BY free range</b>	Phased out with attrition; consider acquiring as advisable (staff time, logistics). Consider welfare if left alone for ~14 hours daily	none
Domestic goose	8	0.2	No	<b>BY free range</b>	Phased out due to incompatibility with public/facility (no pool)	2008
Domestic pigeon	4	colony	No	<b>Barnyard</b>	Consider fancy breed or homing for interpretive and programming purposes, turn-key group needed	None
Domestic turkey (various breeds)	8	0.2, intact	Rare breeds	<b>Barnyard free-range</b>	PO due to aggression and safety issues with toddlers	2014
European roller	4	0.1, intact	No	<b>Aviary</b>	Maintain as compatible mixed species as availability allows; consider pairing/surplus. Not available, but did well in aviary	2017
Ferruginous hawk		1.0	No	mew	Difficulty managing/staff time; phased out	2006
Fisher	2	1.0 or 0.1	Studbook	<b>Native Predators</b>	Acquire when suitable exhibit available	TBD
East African crowned crane	PO	1.1		E 17	Phased out through attrition due to incompatibility with facility MP themes	2006

Table 2: Former and Future Animal Collection Scores & Action Plans

Common Name / Scientific Name	D-T Score	Sex ratio / status	Program	Zone/Exhibit	Plan	Timeline
Giant anteater	1		SSP yellow	<b>TABH</b>	More research needed. Pacing, visibility, temp req, and temperament are concerns.	TBD
Golden-crested mynah	PO		PMP	AV9	Phased out through attrition - incompatible in aviary for husbandry reasons	2008
Golden lion tamarin	PO		SSP	SAH	Phased out for alternate tamarin species for better theme fit	2009
Gray fox	2	1 (neutered).1	No NRRH		Was PO due to exhibit loss (bushdog); potential in native predators	2014
Guanaco	6		No	# E16-17	Phased out - incompatible for space	2009
Guinea Pig		Single sex group up to 15	No	<b>BY</b>	Exhibit in BY, program animal	2018
Hooded pitta	PO		Studbook	AV9	Phased out through attrition - incompatible with husbandry/bad luck!	2007
Kea	TBD		Studbook	<b>Islands?</b>		
Kiwi, NI brown	TBD		Studbook			
Lamprey	TBD	Group	No	Watershed Heroes	Consider as alternative to salmonid in 1 tank for native story	None
Long tailed weasel					??	
Malay argus pheasant	PO		SSP	AV 9	Phased out - incompatible temperament in aviary	2005
Maned wolf	1	Breeding pair	SSP yellow	<b>TABH</b>	Bushdogs selected over maned wolf for canid species in TABH, but consider if thoughts change	TBD
Mountain lion	2	Up to 3, compatible (siblings)	SSP yellow NRRH	<b>Native Predators</b>	Acquire when suitable exhibit built	TBD
Nyala	P/O			E16	Phased out - Incompatible with space/husbandry and master plan theme	2007
Prehensile-tailed porcupine	4	Single individual	SSP yellow	<b>TABH, program</b>	Consider with CTT exhibit or program animal	TBD
Rainbow boa	8	1.0 intact	No		Surplus to private individual	2015

Table 2: Former and Future Animal Collection Scores & Action Plans

<b>Common Name / Scientific Name</b>	<b>D-T Score</b>	<b>Sex ratio / status</b>	<b>Program</b>	<b>Zone/Exhibit</b>	<b>Plan</b>	<b>Timeline</b>
Red-breasted sapsucker	6/PO	0.0.1, intact	NRRH	<i>Aviary</i>	Opportunistic NRRH for display purposes. Passed away, unable to replace	2015
Ringtail	<b>TBD</b>	Individual	Studbook	<i>Native Predators or program</i>	As available, when exhibit available in NP	TBD
Ring-tailed lemur or other lemur sp	1	Social group	SSP yellow	<i>Island Adaptations</i>	Acquire when suitable exhibit available, consider walk through	TBD
Red-crested turaco		1.1 breeding pair	SSP	<i>Aviary</i>	Phased out – incompatible for mixed species	2013
Ringneck dove	PO		No	<i>Aviary</i>	Replaced with native for better messaging	2005
Sacred ibis	1	0.1, intact	Studbook	<i>Aviary</i>	Maintained for display until attrition; Beautiful, possibly too large with the foliage	2016
Swift fox	1		SSP yellow	<i>Prairie Keystone</i>	PK removed from MP	TBD
Tree kangaroo species	1		SSP	<i>Island Adaptations</i>	Acquire when suitable exhibit available	TBD
Tammar wallaby	7	0.1, intact	Studbook	holding	Phase-out by attrition	2014
Turkey Vulture		Up to 2	NRRH	<i>Native Predators, program?</i>	Consider mixed with Raven, interpret Condor	TBD
Hoffmans? Two-toed sloth	7		SSP yellow	<i>TABH</i>	No tropical building in MP	TBD
Western bluebird	4		NRRH	AV9	Opportunistic display; attrition	None
Vampire bat			Studbook	<i>TABH</i>	Removed tropical building from MP	TBD
Reptiles/birds TBD	TBD			<i>Island Adaptations</i>	Consider compatible species fitting theme	None
Birds TBD	TBD			<i>Asian Forests</i>	Consider compatible species fitting theme	None

Table 3: Current Exhibits/Facility Evaluation

Exhibit (age)	Current Species	Assessment of Current Use	Future Plans	Timeline
E1 (~1982)	Bush dogs	Older, naturalized anchor exhibit suitable for mid-sized species; north wall technically non-AZA compliant but variance granted for species	Mid-term exhibit for ICP species Eventually replaced with Island Adaptations/gibbon exhibits	TBD
E2 (~1982); 2007	Not occupied	Chimp exhibit converted to “Bill’s Garden” memorial for story of SPZ history/chimps	Eliminated from future MP due to space constraints	Upon development of new zone
RM	Raptor Mew - not permanently occupied	Mobile – currently in use behind primates	Likely cannot be moved again	Ongoing
E3 (1979)	Spider monkey troupe	Older naturalized exhibit; newer shift cage allows for appropriate servicing and switching b/w exhibits; adequate until species P-O	Mid-term exhibit for ICP species: - Small arboreal carnivore; bird species or gibbon added space To be replaced with Isl Adapt exhibit	TBD
PS1,2,3	Primate shift	3 interconnected holding units; used for shifting primates out of exhibits to clean	To be replaced with Island Adaptations exhibit	TBD
E4 (1979)	Gibbons	Older naturalized exhibit; newer shift cage allows for appropriate servicing and switching b/w exhibits; adequate until new exhibit as per MP	To be replaced with Island Adaptations exhibit	TBD
KK1	Axolotl	Tank display keeper kitchen adequate	Discontinue after phase out	TBD
SF1,2 (2005)	Salamanders	Works well; Could use more land area; could consider native frog species	Same as current	Ongoing
SF3 (2005)	Banana slugs	Exhibit adequate for current management	Same as current	Ongoing
SF4 (2005)	Pond turtles, fish	Not suitable with multiple males; staff access challenging	Same as current	Ongoing
SF5,6,7,8 (2005)	Native snakes	Adequate for current use; holding tanks used for rotation of extra snakes; signage restricts species	Same as current	Ongoing
SF10 (2005)	Termites	Adequate for current use, sustainable pop	Same as current	Ongoing

Table 3: Current Exhibits/Facility Evaluation

Exhibit (age)	Current Species	Assessment of Current Use	Future Plans	Timeline
E6 (2014)	North American River otters	Excellent dividable exhibit and holding	Same as current	Ongoing
E7 (2011)	Flamingo/ Orinoco geese	Good space for species; drain line must be serviced regularly; poor water pressure; feeding pond small for expanding flock size	Same as current	Ongoing
AV9 (1992, renovated 2008)	Mixed bird species	General avian and bird-watching theme Mesh eventually needs replacement, deteriorating in places on top due to tree intrusion and vinyl coating erosion from human access on top	Same as current per MP; Select compatible species to add to visitor experience and contribute to captive population sustainability	Ongoing
AV1,2,7,8 (1992)	Variable	Interconnected holding units; used for program animals, surplus, holding, sick, and breeding	Mesh replacement as needed; prioritize bird breeding and program animals	Ongoing
AV 3-6 (1992)	Cotton-top tamarins	4 interconnected holding units; used for CT Tamarin holding	Will return to avian holding once new CT Tamarin exhibit built	Ongoing
E8 (2011)	Cavy/ Southern screamers	Good space for species; inadequate grass; capacity limited to ~10 ; mesh will not contain newborns; pond difficult to drain/clean	Add better soil for pasture; address pond drain	Ongoing
E9 (N/S) (2012)	Not permanently occupied	Holding pens used to separate individuals during breeding season or for medical recovery	Same as current	Ongoing
E10/11	Chacoan peccary/ Greater rhea	Large size and sun exposure; appropriate holding and intro capabilities; landscaping limited; also used for BY exercise	To be replaced with Tropical Andes Biodiversity Hotspot exhibit	Ongoing
BY1 (2003)	Domestic fowl/ backup rodent holding	Adequate for housing/breeding mixed poultry flock ; hutches appropriate for small mammals (guinea pigs)	Same as current	Ongoing
BY 2-6 (2003)	Mixed herd of goats, sheep	Adequate for housing small herd; select for temperament, variety, possible rare breed	Same as current	Ongoing
BY 7,8 (2003)	Domestic pig: Guinea hog & Kune Kune pig	Adequate for small-stature pig(s); select for temperament and rare breed story	Same as current Consider surplus of Guinea hog for housing constraints	Ongoing
BY 9-12 (2003)	Mid-size domestic ungulates	Stalls adequate for small group of camelids, small equids, etc; pasture rotation for exercise	Same as current; consider substrate change	Ongoing



Table 3: Current Exhibits/Facility Evaluation

Exhibit (age)	Current Species	Assessment of Current Use	Future Plans	Timeline
BY13 (2003)	Nursery /special care/holding	Climate control; cabinet storage; counter not appropriate for all animals	Same as current	Ongoing
BY14 (2003)	Native nocturnal mammal-opossum, skunk	Species can rotate; select for appropriate size & use of space; can be program animal	Same as current	Ongoing
BY15 (2003)	Mouse colony	Adequate for management of small colony using holding cages in service room to separate if needed	Same as current	Ongoing
BY16, 18-19 (2003)	Isolation/holding pens for various	Adequate for isolation/holding needs of barnyard residents and others; outdoor stalls empty for quick emergency occupancy	Same as current	Ongoing
BY21	Rabbit, domestic	Adequate for day-use as exercise pen	TBD-species to be phased out	Ongoing
BY22A (2003)	Black widow spider	Enclosure adequate for maintaining and servicing one spider	Same as current	Ongoing
BY22B	Cellar spider	Non-managed display for theme purposes	Same as current	Ongoing
BY23	Rabbit, domestic	Adequate for holding larger species of rabbits	Future site of Velutini Snack cart	TBD
BY24 (2017)	Various	Visitor-free area of CC with goat climbing structure for exercise, play and escape	Same as current	Ongoing
BY25 (2018)	Raccoons	Opening 2018 – TBD; appropriate for this or other small animals fitting theme	Same as current	Ongoing
E12,13	Quarantine/isolation of larger ungulates	Small but adequate for short term holding/Q; Red barn shelter can also house small animals overnight; also used as exercise pen	Same as current Re-grade to improve drainage Occupies part of future Asian Forest	Ongoing TBD
E21 (2009)	Red panda/ muntjac	Adequate for breeding panda pair or non-breeding family group & solitary muntjac;	Consider expansion west and/or 2 <sup>nd</sup> exhibit; replace metal siding with plexi	Ongoing
E16	Yak ; also used as exercise pen for BY hoofstock	Limited landscaping; provides some pasture, good sun exposure; has protected contact training shift	Future site of AF/NP as per MP	Ongoing TBD
E17	Yak	Forested small paddock adjacent to Nature Play; rotated between yak and BY hoofstock	Future site of N Predators as per MP	Ongoing TBD
E18,19,20	Various	Small but adequate for short term holding/Q; transfer between exhibits	Future site of AF/NP as per MP	Ongoing TBD

Table 3: Current Exhibits/Facility Evaluation

<b>Exhibit (age)</b>	<b>Current Species</b>	<b>Assessment of Current Use</b>	<b>Future Plans</b>	<b>Timeline</b>
E22,23 (2014)	Salmonids	2 separate tanks connected by same system (5K gals); manage for 2-3 mixed local species	Same; consider lampreys as alternative	Ongoing
E24E (2015)	Bald eagles	Spacious immersive exhibit; perch furniture replacement tricky and debris removal -mesh	Same; consider adding more eagles	Ongoing
E24W (2015)	Native owl & NA porcupine mix	Spacious for 2-3 animals	Same as current	Ongoing
EO1	Tarantula	Adequate for current use	Program animal	Ongoing
EO2	MH termites	Needs better temperature/humidity control	Program animal	Ongoing
ACC1,2	Quarantine/holding	Doors loud, heavy; guillotine doors loud, slow; little natural light	Address door and drain cover issues	Ongoing
ACC3	Quarantine/holding	Safety airlock added	Consider trimming shade trees for more light; add roofing material	Ongoing

Table 4: Botanical Species of Selected Non-Natives and Specific Natives

Botanical Collection Plan

In 2017 Sequoia Park Zoo adopted a native plant initiative to landscape the zoo campus with primarily plants native to Humboldt County, California for the support of local biodiversity and to promote tangible conservation actions. Non-native species can be included on zoo grounds only in these circumstances: 1) it has an important role to play in an ecological story related to an exhibit/species, zone or our local ecosystem; 2) they are considered essential to the diet or welfare of a species in animal collection; 3) they are potted/contained in a non-naturalized manner, 4) in Barnyard, species that are cultivated for food/ aesthetics and other domesticated purposes. Non-native plants deliberately chosen to remain in the collection should be labeled as such and interpreted where appropriate.

Non-natives in designated in red

Species	Location	Purpose	Comments
Acacia	East of aviary	Screening	Nuisance, replace with native
Alder	Main lawn SE corner	Good wildlife tree	Deciduous for lawn health
Annual flowers	Barnyard – pots and hanging baskets	Decorative, thematic	Replant yearly
Annual vegetables	Barnyard planters	Thematic and food source	Replant yearly
Annual vegs/herbs, miners lettuce, checkerbloom	Café garden	Café menu source & interp	Needs interp & promo
Bamboo species, <i>Phyllostachys nigra</i> , <i>Fargesia nitida</i> ,	Outside perimeter of flamingo/cavy, outside perimeter of aviary, exterior of panda exhibit	Essential food for pandas	Needs specific interp & B label stating origin; very careful of spreading species, must stay contained or be removed
Boxwood (hedge)	Exterior zoo perimeter - primates	Historic, good screen	Form into topiary
Buckeye, CA (2) <i>Aesculus californica</i>	West entrance planters	Good form & story	Cautionary - potential bee hive poisoning when in flower
Cypress, dwarf <i>Chamaecyparis obtusa</i>	Otters	Ornamental, error of design	Remove
Dogwood (Asian)	North of flamingo exhibit	Decorative, ornamental	remove
Escalonia hedge	Various inside campus	Screening	remove
Fern, tree	Aviary	Decorative	Consider removal
Flax & heather	Paddocks walkway	Decorative	remove
Fruit trees Fruit trees	Barnyard – various locations Elsewhere on campus	Thematic and food source	Consider replacing ornamental with fruiting; remove outside BY
Hawthorn - ornamental	Cavy exhibit	shade	Replace w native hawthorn
Hemlock, Western	Wildlife Garden		

Table 4: Botanical Species of Selected Non-Natives and Specific Natives

<i>Tsuga heterophylla</i>			
<b>Herbs</b>	Barnyard planters	Enrichment	Replant yearly
<b>Magnolias (4)</b> <b>(1)</b>	Main lawn SE corner Aviary	Ornamental Bird perching?	<b>Remove</b> once native replacements have grown
Maple, Bigleaf <i>Acer macrophyllum</i>	Main lawn SE corner	Shade canopy	Deciduous for lawn health
<b>Maple, Japanese</b> <i>Acer palmatum</i>	R Panda	Furniture for r panda	
<b>Maple, trident</b> <i>Acer buergerianum</i>	RPanda	Furniture for r panda	Research invasiveness
Maple, vine <i>Acer circinatum</i>	Hilltop planter & along walkway	Historic, donation PGE	
<b>Mulberry (2)</b> <i>Morus alba</i>	East of aviary, R panda	None; panda perch & fruit	<b>Consider replacement</b>
Redwood, Coast <i>Sequoia sempervirens</i>	Throughout campus	Naturally occurring	
<b>Redwood, dawn</b> <i>Metasequoia glyptostroboides</i>	Outside north red panda exhibit	Redwood equivalent in Asia	Needs specific interpretation & B label stating origin
<b>Rose, climbing</b> <i>Rosa setigera</i>	Barnyard entrance gate	Thematic, decorative, food source	Train over gate
<b>Rose, groundcover</b>	North of flamingo exhibit	Decorative, screening	<b>Consider removal total or partial</b>
Sedge, field <i>Carex preagcilis</i>	Primate lawn	Alternate lawn demo	Keep mowed for turf growth
<b>Strawberry tree</b> <i>Arbutus menziesii</i>	Otters	Madrone alternate, fruiting	<b>Consider replacing with madrone</b>
<b>Vine, ?? (2)</b>	R panda	Decorative, screen	<b>Research species, invasiveness</b>
Willow sp TBD <i>Salix sp</i>	Main lawn SE corner	Good wildlife tree	Deciduous for lawn health
<b>Wisteria</b> <i>Wisteria sp?</i>	Exterior of panda exhibit	Decorative only	Research invasiveness and alternative replacement
Yew, Pacific <i>Taxus brevifolia</i>	Wildlife grden		

## **Institutional Collection Plan**

### **Taxon Selection Criteria**

2004; 2013; 2018

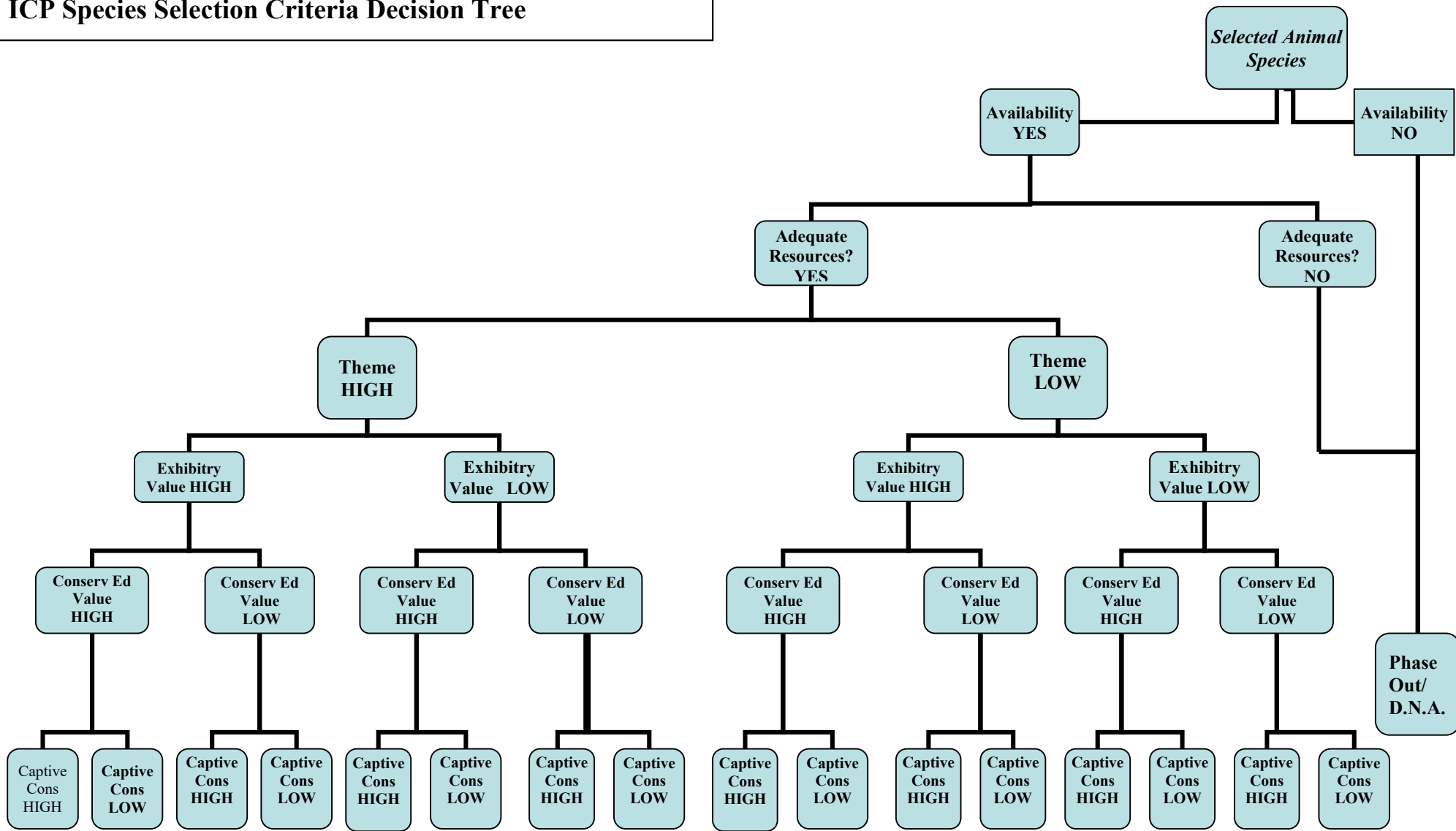
This document defines in detail the criteria used to select species for the zoo's current and future animal collection, using the decision tree ranking method common to ICP development in the zoo profession.

- 1. Availability** – This criterion represents the ease with which a particular species can be acquired from any source that is defined as appropriate in our Acquisition Policy. Short- and long-term captive management trends should be considered. A “NO” rank is given to species that are rare/non-existent in captivity, when supply severely restricts availability or when acquisition from other sources does not comply with the Acquisition Policy. A species receiving a “NO” rank here is placed in the phase-out/do not acquire category and is not evaluated for other criteria.
- 2. Adequate/Appropriate Resources** – Sequoia Park Zoo has several significant types of resource limitation that set it apart from most other zoos. Limitations include land space, adequate exhibit/holding/quarantine facilities, staffing level and expertise, local veterinary expertise and budget, animal management logistics, surplus/transport logistics, climate compatibility. A species might rank a “NO” if only *one* resource is inadequate; however, some limitations may be surmountable while others may not. Ranking could also be affected by other species that may be planned for the collection. A species receiving a “NO” rank here is placed in the phase-out/do not acquire category and is not evaluated for other criteria.
- 3. Theme** – The master plan organizes the zoo into 6 themes or zones. These themes are as follows: 1) BARNYARD (domestication and use of human habitat by wildlife; 2) AVIARY (the wonder of birds, bird-watching); 3) ASIAN FORESTS (animals found in tropical or temperate forests in Asia); 4) TROPICAL ANDES BIODIVERSITY HOTSPOT (need for biodiversity, what are hotspots, specifics of this hotspot and threats); 5) NATIVE PREDATORS (local predator species and roles, wildlife corridors, sharing habitats with humans); 6) ISLAND ADAPTATIONS (unique species that evolved in isolation); 8) Program animals (off exhibit). Species score high if they clearly fit within one of these themes
- 4. Exhibitory Value** – This criterion describes the capacity for visitor appeal or “charisma” associated with the species, determined primarily by how often and how long visitors look for, ask for, and observe the animal. The attraction can be of a positive or negative nature (i.e. red pandas vs. giant anacondas). Until valid evaluation can be done to determine visitor appeal, this criterion must be determined subjectively using anecdotal observation and/or data from other zoos. Exhibitory value is automatically scored as “high”

when a species is mixable with one or more species in the master plan, and/or when the species is able to rotate through other existing or planned exhibits.

5. **Conservation Education Value** – This criterion considers capacity for contributions to conservation messages or “stories”, efforts other than those related to zoo breeding programs. This may include animals for education programs, species of particular relevance to conservation projects involving our region or Sequoia Park Zoo, a “rescue” or non-releasable rehab placement, etc.
6. **Zoo Conservation Value** – This value is based on Regional Collection Plan recommendations. This data is available for many species through AZA Taxon Advisory Groups. A “HIGH” rank is given to species that is managed by SSP’s or other highly managed plans where participation is needed, or in a candidate category. If the RCP gives its own ranking number for a species, this number should correspond relatively to the “HIGH” or “LOW” rank in this tree. A “LOW” rank is given to species that is categorized as “phase-out”, “not recommended” or otherwise not managed for long-term breeding. For domestic animals, this value is based on desirability to continue particular bloodlines, i.e. for rare or minor breed conservation.

Sequoia Park Zoo  
**ICP Species Selection Criteria Decision Tree**



Sequoia Park Zoo

R A N K	Institutional Collection Plan: CRITERIA DATA FOR TAXA UNDER CONSIDERATION															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16





8. What is native climate, and acceptable climate parameters?
9. Name an existing or new theme this species fits within, and explain how it fits within the theme.
10. Describe its natural activity cycle, habitat use, social dynamics (daily, seasonally):
11. What can this species be mixed with? If none, what species could be housed nearby?
12. Is the species compatible with other species and/or exhibits currently available at SPZ?
13. What is the potential for keeper training/interaction for the public, or use as a program animal?
14. What are this species conservation education messages?

15. List formal AZA or other programs established for this species' captive conservation:

16. Other comments:

17. List sources of info/references, attach range map:

18. Decision Tree scoring route:

Availability (Y/N), Adequate Resources (Y/N), Theme (H/L), Exhibitory Value (H/L), Conservation Education Value (H/L),  
Captive Cons Program (Y/N)

## REFERENCES

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