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2020-2022

Orangutan SAFE Program Plan



ORANGUTAN SAFE PROGRAM PLAN

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Orangutan SAFE Species Program Goal

The Orangutan SAFE program moves beyond the goals of the AZA Orangutan Species Survival Plan (SSP), of which the aim is to manage our captive populations, by focusing specifically on the conservation of the wild orangutan population. The Orangutan SAFE Program aims to protect and restore the wild orangutan population and their habitats through public engagement, funding, and field work.

Program Operational Structure

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Conservation Target

Orangutans (Order: Primates; Family: Hominidae) comprise three species in the genus *Pongo*. Though they once ranged as far north as China, each is now isolated to the islands of either Borneo (*P. pygmaeus subsp.*), across the territories of Indonesia and Malaysia, or Sumatra (*P. abelii*; *P. tapanuliensis*) in Indonesia. All three species are now recognized as Critically Endangered by the International Union for the Conservation of Nature (IUCN), having sharply declined in the Anthropocene due to habitat loss, exploitation and fragmentation; hunting; and the illegal pet trade.

Status of Species within the AZA Community

Orangutans have been exhibited in North American zoos since their importation in the early 1900s, with successful captive breeding taking place since the mid-1900s (Perkins, 2008; Elder, 2018). They are an iconic great ape, particularly due to extreme sexual dimorphism and the unique and distinctive cheek flanges of adult males. They are also the only great ape found outside of Africa; these factors help to make orangutans a popular species in zoos. The Orangutan Species Survival Plan (SSP) was initiated in 1985 and officially formed in 1988. Orangutans within the SSP are managed as two genetically separate breeding populations – the Sumatran and the Bornean. A third, non-breeding population made up of Sumatran x Bornean hybrids, also exists within the SSP. Because the species (at the time, subspecies) distinction was not clearly understood until the late 1980s, there was a sizeable population of “hybrid” orangutans in human care worldwide. In 1985, the Orangutan SSP adopted a policy placing a moratorium on the production of hybrid orangutans. The other regional zoo management programs (Europe and United Kingdom, Australia and New Zealand, Southeast Asia, Japan) adopted similar policies during the same time period. The recent discovery of a third species of orangutan, *Pongo tapanuliensis*, was announced in 2017

(Nater et al 2017). The SSP is currently working with the AZA Molecular Data for Population Management Scientific Advisory Group to determine potential impacts on current management strategy.

As of 01 September 2019, the SSP serves 53 accredited zoos across the U.S., Canada, and Mexico. At present, there are 98 (43.55) Bornean orangutans in 25 institutions, 95 (35.60) Sumatran orangutans in 27 institutions, and 38 (16.22) hybrid orangutans in 21 institutions. The Ape Taxon Advisory Group (TAG) has set the target population size at 100 individuals for each species in its 2014 Regional Collection Plan (RCP). Under AZA's sustainability designations the Bornean and Sumatran populations currently qualify as Green SSP Programs. Both populations are stable and self-sustaining, with small annual growth rates over the past 5 years (λ 1.036 and 1.011 for Borneans and Sumatrans respectively), and the strong genetic profiles reflective of long-lived species (97.4% and 97.7% retained genetic diversity for Borneans and Sumatrans respectively, miniscule inbreeding, and an N_e/N ratio of 0.49 for each). Over the past several years, minimally-related or un-related individuals of both species have been imported into the SSP population from partner programs in other regions of the world (specifically from the ZAA program in Australia/New Zealand and the EEP program in Europe). Less frequently, individuals from the SSP population have been transferred to zoos in these overseas regions. In all cases, such transfers have been made with a focus on the best long-term option for the individual orangutan, and on mutual benefit to the regional breeding and management programs involved.

Whereas orangutans within the SSP are extremely unlikely to ever be candidates for reintroduction efforts, they do play important roles as ambassadors to inspire advocacy and caring among zoo visitors, and to promote action for the species' protection and conservation in the wild.

AZA Conservation Activities

According to the 2015-2017 AZA Annual Report on Conservation and Science (ARCS), 63 member institutions supported orangutan field conservation, with contributions totaling nearly \$2 million. Conservation efforts in both Borneo and Sumatra were mainly focused on habitat protection, rescue and rehabilitation, and capacity building.



AZA Public Engagement Activities

There are many days throughout the year in which AZA organizations currently bring awareness to orangutans, including Ape Awareness month, Missing Orangutan Mother's Day, International Primate Day, Orangutan Caring Week and International Orangutan Day.

Conservation Status of the Species

Bornean Orangutan (<i>Pongo pygmaeus</i>)	
United States Fish and Wildlife Service Status	Endangered
IUCN Conservation Status	Critically Endangered

Bornean orangutan population sizes are not fully understood. The most recent estimate, published in 2004, identified a range-wide population of approximately 55,000 individuals inhabiting 82,000 km² of forest. However, that study may have underestimated inhabited range, and the population may have been as high – at the time of surveying in 2003 – as 104,700 (Wich et al 2012). This higher population estimate still represents a significant decline from an estimated 288,500 individuals in 1973, and does not account for decline occurring since 2003, now projected to reach 47,000 individuals by 2025. In recognition of precipitously declining numbers, the IUCN changed the conservation status of Bornean orangutans from 'endangered' to 'critically endangered' in 2016.

Population sizes of Bornean orangutans are further complicated by the recognition of three sub-species based on geographical distribution: *Pongo pygmaeus pygmaeus* (from the northern part of the Kapuas River to northeastern Sarawak; Sarawak, Malaysia and West Kalimantan, Indonesia), *P.p. wurmbii* (from the south of Kapuas River to the west of the Barito River; West and Central Kalimantan, Indonesia), and *P.p.morio* (from Sabah extended south to the Mahakam River in East Kalimantan; Sabah, Malaysia and North and East Kalimantan, Indonesia). Conservation efforts, thus, must address each sub-species.

In addition to loss of habitat, killing of orangutans, especially in Indonesian Borneo, is reported to be a key contributor to declining populations. Consequently, and in combination with habitat loss, many sub-populations are projected to become extinct in the next 50 years (Abram et al 2015).

Sumatran Orangutan (<i>Pongo abelii</i>)	
United States Fish and Wildlife Service Status	Endangered
IUCN Conservation Status	Critically Endangered

The range of Sumatran orangutans is limited to just 16,775 km² of forest, and the most recent population survey estimated 13,846 individuals (Wich et al 2016). The vast majority (~95%) occur in the Leuser Ecosystem, while other populations are found in the Sidiangkat and Pakpak. Recent studies have found genetic differentiation between subpopulations that is at least partially due to geographic barriers, such as rivers and high mountain ridges, even with the Leuser Ecosystem (Nater et al 2013).

About 35.6% of the Sumatran orangutan population is in protected areas (World Database Protected Areas recognized areas, SOCP unpublished data).

Tapanuli Orangutan (*Pongo tapanuliensis*)

United States Fish and Wildlife Service Status	Not Recognized
IUCN Conservation Status	Critically Endangered

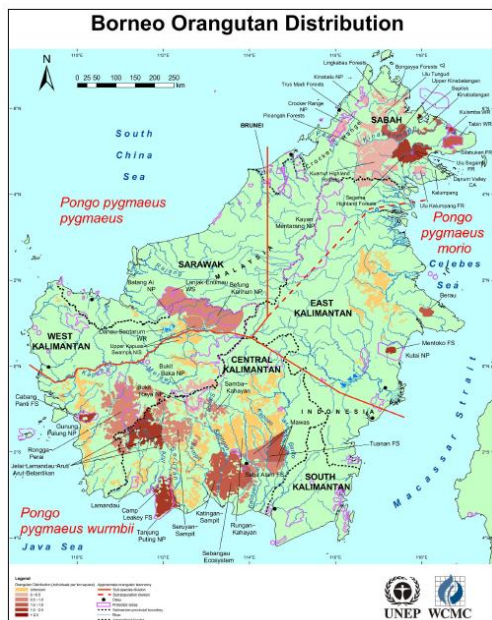
Although initially discovered by scientists in 1997, the Tapanuli orangutan was not described as a separate species until 2017. With a population estimate of fewer than 800 individuals (Wich et al 2016), *Pongo tapanuliensis* is the least numerous of all great ape species; despite being the first to be discovered since 1929.

Small population size and geographic isolation are the major challenges facing this species. Additionally, only about 10% of the geographic range is an area recognized by the World Database of Protected Areas. Another 76% is in Hutan Lindung (Protection Forest), while 14% does not have any recognized 'forest status.'

Population and Habitat Viability Assessment

The most recent finalized Population and Habitat Viability Assessment (PHVA) occurred in 2004. A 2016 PHVA is in the final editing stages for eventual publication, and changes reflected in that document will be incorporated into the SAFE Action Plan within one year of its release by IUCN/SSC. The 2004 PHVA recognized that wild orangutans are in steady decline due to logging, habitat conversion, fires, and poaching. The population has continued to decline since 2004, and the threats previously identified continue to be the major drivers of this decline. The assessment divided orangutan populations geographically through a working group for Borneo and one for Sumatra. Both working groups evaluated habitat units for orangutan population viability and identified priority units for conservation action using similar criteria. Based on the threats to high priority habitat units, a list of potential conservation action options that might be applicable was also determined. The Orangutan SAFE program has incorporated these priorities within our plan.

Orangutans in Borneo

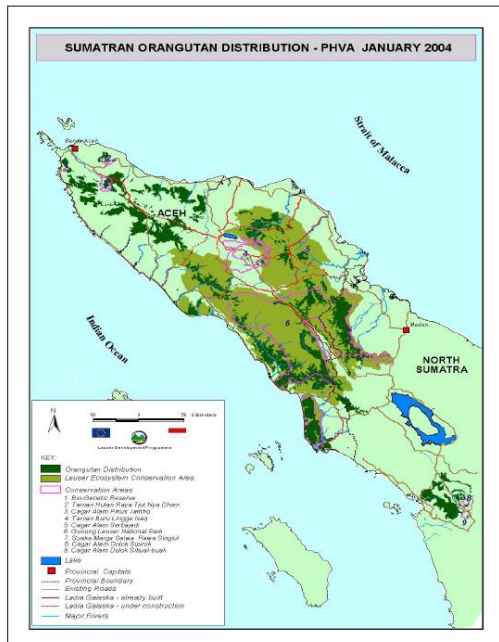


Priority Bornean Orangutan Habitat Units

Location		Population Size	Habitat Size (Ha)
West Kalimantan & Sarawak	Gunung Palung	2500	90,000
	Betung Kerihun	1330-2000	450,000
	Batang Ai	119-580	24,050
	Lanjak Entimau	1024-1181	168,768
	Danau Sentarum	500-1000	109,000-190,000
	Bukit Baka	175	35,000
	Bukit Rongga & Parai	1000	420,000
Central Kalimantan	Tanjung Puting National Park	6000	415,040
	Sebangau	6900	578,000
	Mawas	3500	501,082
	Arut-Belantikan	6000	510,000
	Sambah-Kahahyan	1000	150,000
East Kalimantan	Kutai National Park*	600	198,629
	Berau & Sungai Lesan	400	--
	Gunung Gajah*	1500	140,000
	Kutai Timur	980	?
	Sanggatta – Bengaton & Muara	175	?
Sabah	Sabah Foundation	6318	4461
	Lower Kinabatangan	517	1125
	Tabin	1200	1285
	North of Kinabatangan	2000	2298
	Trus Madi Forests	1897	255
	Kulamba Wildlife Reserve	204	730

Threats to viable Bornean orangutan populations are region-specific. Habitat fragmentation is the most significant threat in Sabah, while habitat fragmentation and hunting are major challenges in Sarawak. In Kalimantan, illegal logging, habitat conversions, and hunting were the most significant threats identified by the Borneo Working Group. Orangutans in Borneo are perceived to have lower mortality, faster breeding, and therefore, resulting in a capacity for more rapid population growth, compared to orangutans in Sumatra. These input values affected the models used to evaluate population demographics. The working group called for more demographic data from long-term field studies from both islands to provide more accurate estimates of population rates and to better document the existence and extent of differences between the two islands (and possibly between different regions within each island). Models for Borneo suggest that populations of 250 orangutans are demographically stable and will retain at least 90% of their initial gene diversity over time. Thus, habitats capable of supporting more than 250 orangutans should be prioritized for conservation action. The model assumes that habitat units will remain largely unchanged. However, the reality is that many of these forests are under significant threat of deforestation, which would cause significant harm to orangutan populations and long-term survival of the species.

Orangutans in Sumatra



Estimated Area and Orangutan Numbers for 13 Habitat Units for Sumatra Used for Modeling in 2004 PHVA

Habitat Unit	Est Orangutan #	Habitat Block	Primary Forest (km ²)	Orangutan Habitat (km ²)
NW Aceh*	654	1. Ulumasin (Aceh Besar)	2066	847
		2. Tutut (Woyla: NW Aceh)	1918	832
NE Aceh*	180	7. Geumpang	2116	282
Seulawah	43	6. Seulawah	103	85
West Middle Aceh*	103	3. Beutung (W Aceh)	1297	261
		9. Linge	352	10
East Middle Aceh*	337	8. Bandar-Serajadi	2117	555
West Leuser*	2508	4. Kleut Highlands (SW Aceh)	1209	934
		5. W Mt. Leuser	1261	594
		5A. Kleut Swamp	125	125
		10. E Mt. Leuser/Demiri	358	273
		11. Mamas-Bengkung	1727	621
Sidiangkat	134	12. Puncak Sidiangkat/B. Ardan	303	166
East Leuser*	1052	13. Tamiang	1056	375
		14. Kapi and Upper Lesten	592	220
		15. Lawe Sigala-gala	680	198
		16. Sikunder-Langkat	1352	674

Habitat Unit	Est Orangutan #	Habitat Block	Primary Forest (km ²)	Orangutan Habitat (km ²)
Tripa Swamp	280	17. Tripa (Babahrot) swamps	140	140
Trumon-Singkil*	1500	18. Trumon-Singkil Swamps	725	725
E Singkil Swamps	160	19. East Singkil Swamps	80	80
West Batang Toru*	400	20. West Bantang Toru	600	600
East Sarulla	150	21. East Sarulla	375	375
Total	7501		20552	8992

* Indicates priority habitat units

Population modeling over the short term (50-100 years) identified almost no probability of extinction. However, this time period encompasses only 2-3 generations for this long-lived species, making long-term projects (e.g., 1000 years) more appropriate for modeling. Populations under 100 individuals had a high probability of extinction over 1000 years, while populations of 250 individuals had a very small probability of extinction but declined to almost one-half of their original size and lost substantial genetic diversity. In contrast, populations of 500 or larger were demographically stable and retained over 90% of gene diversity, a common genetic goal for managed populations. Thus, the PHVA identified populations of 500 as being more ideal to contribute to the long-term conservation of the species, while smaller populations linked by occasional exchanges of animals could also contribute to the overall stability of a larger meta-population.

Key Orangutan Conservation Strategies Identified in National Action Plan

1. Build and maintain corridors between fragmented patches of orangutan habitats
2. Rehabilitate and restore potential habitats inside and outside of existing orangutan conservation areas
3. Release orangutans into their natural habitat according to their genetic data, taking care to maintain sample authenticity and avoid genetic contamination
4. Compile a guideline for the reintroduction and release of orangutans into their natural habitats, including accurate judgements about the viability of the original habitat
5. Conduct research on the ecology, behavior, distribution, genetics, diet, and reproduction of orangutans inside and outside designated conservation zones to minimize human-orangutan conflicts and promote effective orangutan management in commercial forest and plantation areas
6. Survey and monitor orangutan populations and habitats, both inside and outside of designated conservation zones
7. Review and develop economic alternatives that are both environmentally friendly and conducive towards orangutan conservation (e.g. ecotourism)
8. Extending the reach of orangutan conservation awareness programs through environmental education networks, routine meetings with the local community, and special approaches to religious, youth, and women's organizations
9. Include orangutan conservation material within elementary and secondary school curriculum

Threats

Primary Threats to Orangutans

- Habitat loss and fragmentation
- Fires
- Illegal Hunting/Trafficking
- Gaps in information on distribution and numbers

Strategic Objectives

Conservation Objectives

Objective	
1.	Protect, Connect, and Restore Orangutan Habitat
2.	Support Anti-poaching and Wildlife Trafficking Prevention Efforts
3.	Continue and Enhance Research Related to Orangutan Distribution and Numbers

Public Engagement Objective

Objective	
1.	100% of AZA zoos housing orangutans participating in World Orangutan Day Annually

Communication Objective

Objective	
1.	Increase the number of AZA zoos housing orangutans that incorporate orangutan conservation messaging on grounds and social media to 100% by 2022

Funding Objectives

Objective	
1.	Increase the amount of funds for orangutan conservation

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Orangutan SAFE Species 3-year Action Plan (2020-2022)

Conservation Objectives								
Strategic Objective 1. Protect, Connect, and Restore Orangutan habitat in Borneo and Sumatra								
Number	Action	Metric	Time Frame			Budget	AZA Members & Field Partners	Notes
			2020	2021	2022			
1.1	Increase participation in forest restoration and corridor connection activities.	Two new institutions added per year to the CREATE project.	X	X	X	\$8,000 for 1,000 saplings	APE Malaysia Kansas City, Zoo, Audubon Zoo, Como Park Zoo and Conservatory	
1.2	Increase support for in-country habitat protection	1)Support Customary Forest programs to give local communities the legal rights to the lands on which they live and work	X	X	X	\$100,000 TBD	Bornean Orangutan Survival Foundation Gunung Palung Orangutan Conservation Project Seneca Park Zoo	
		2)Support education, awareness, and field trips for community leaders and local school children to understand conservational issues and/or observe wild orangutans	X	X	X			
Strategic Objective 2. Support Orangutan Anti-Poaching and Wildlife Trafficking Prevention								
Number	Action	Metric	Time Frame			Budget	AZA Members & Field Partners	Notes
			2020	2021	2022			
2.1	Confiscation and translocation of orangutans to appropriate habitats in county, based on site-specific release plans following IUCN guidelines	Provide veterinary, husbandry, and financial support to help with care of at least destined for translocation.	X	X	X	\$28,000 \$14,000	Danau Girang Field Center Bornean Orangutan Survival Foundation Henry Vilas Zoo Cameron Park Zoo	

Conservation Objectives (Continued)

Strategic Objective 3. Continue and Enhance Research Related to Orangutan Distribution and Numbers

Number	Action	Metric	Time Frame			Budget	AZA Members & Field Partners	Notes
			2020	2021	2022			
3.1	Support research of wild orangutan reproduction, ecology, behavior and health Metric	Support for research that monitors orangutan populations at sites important for long-term population sustainability to identify population trends and conservation threats	X	X	X	TBD TBD	HUTAN Gunung Palung Orangutan Conservation Project Seneca Park Zoo	
3.2	Support oil palm research	1)Support research regarding oil palm mapping	X	X	X	\$20,000	Serge Wich, Sumatran Orangutan Conservation Program	
		2) Investigate research regarding ethics of palm oil production	X	X	X			

Public and Stakeholder Engagement Objectives

Strategic Objective 1. 100% of AZA zoos housing orangutans participating in World Orangutan Day Annually

Number	Action	Metric	Time Frame			Budget	AZA Members & Partners	Notes
			2020	2021	2022			
1.1	Celebrate World Orangutan Day annually	1)Orangutan conservation efforts by AZA zoos and aquariums promoted through World Orangutan Day	X	X	X		All AZA institutions, field partners, and Orangutan SSP	World Orangutan Day occurs annually on August 19 th . We recognize that organizations may choose to celebrate on a weekend shouldering this date.
		2)Track number of AZA institutions celebrating World Orangutan Day annually and increase number of participating zoos to 100%	X	X	X			

Communication Objectives

Strategic Objective 1. Increase the number of AZA zoos housing orangutans that incorporate orangutan conservation messaging on grounds and social media to 100% by 2022

Number	Action	Metric	Time Frame			Budget	AZA Members & Partners	Notes
			2020	2021	2022			
1.1	Develop an orangutan SAFE toolkit	Create and distribute a complimentary toolkit to use for communications efforts	X	X	X		All AZA institutions, field partners, and Orangutan SSP	Education Advisor
1.2	Connect zoo visitors with orangutan conservation issues year-round	1) Create common messaging for zoo exhibits developed and updated with orangutan conservation information.	X	X	X		All AZA institutions, field partners, and Orangutan SSP	Education Advisor
		2) Ensure the Orangutan SAFE plan is on both the AZA and Orangutan SSP websites.	X	X	X			

Funding Objectives

Strategic Objective 1. Increase the amount of funds for orangutan conservation

Number	Action	Metric	Time Frame & Budget			Budget	AZA Members & Partners	Notes
			2020	2021	2022			
1.1	Increase the number of Orangutan SAFE program partners	Add 9 new Orangutan SAFE Partner Organizations by 2022	X	X	X	Raise at least \$3,000 annually		Orangutan SAFE Program Partnership requires a 3-year commitment of at least \$1,000 annually to Orangutan SAFE focused conservation objectives
1.2	Increase the number of AZA zoos housing orangutans contributing to in-situ Orangutan SAFE focused conservation initiatives annually	100% of AZA Zoos housing orangutans contributing to orangutan conservation by 2022	X	X	X			According to the 2018 ARCS report 33 out of 54 AZA accredited facilities holding orangutans
1.3	Increase the amount of funds directed to in-situ Orangutan SAFE focused conservation initiatives	Increase total funds by 10% by 2022	X	X	X	\$60,700		According to the 2018 ARCS report \$607,000 was contributed to orangutan conservation efforts. An increase of \$60,700 would meet our goal of 10%.
1.4	Ensure all AZA zoos housing orangutans are reporting their orangutan conservation efforts annually	1) Designated steering committee member will conduct reach outs and reminders to encourage orangutan institutions to participate in the AZA ARCS report annually	X	X	X			The ARCS report will serve as the Orangutan SAFE program conservation contribution data base. We will utilize this report to determine who is participating in orangutan conservation and we will also cross reference this data base with the self-reporting results that are submitted to the Orangutan Species Survival Program to determine who may be contributing to orangutan conservation but not reporting it on the ARCS report.
		2) 100% participation of orangutan conservation efforts reported on the annual AZA ARCS report	X	X	X			