



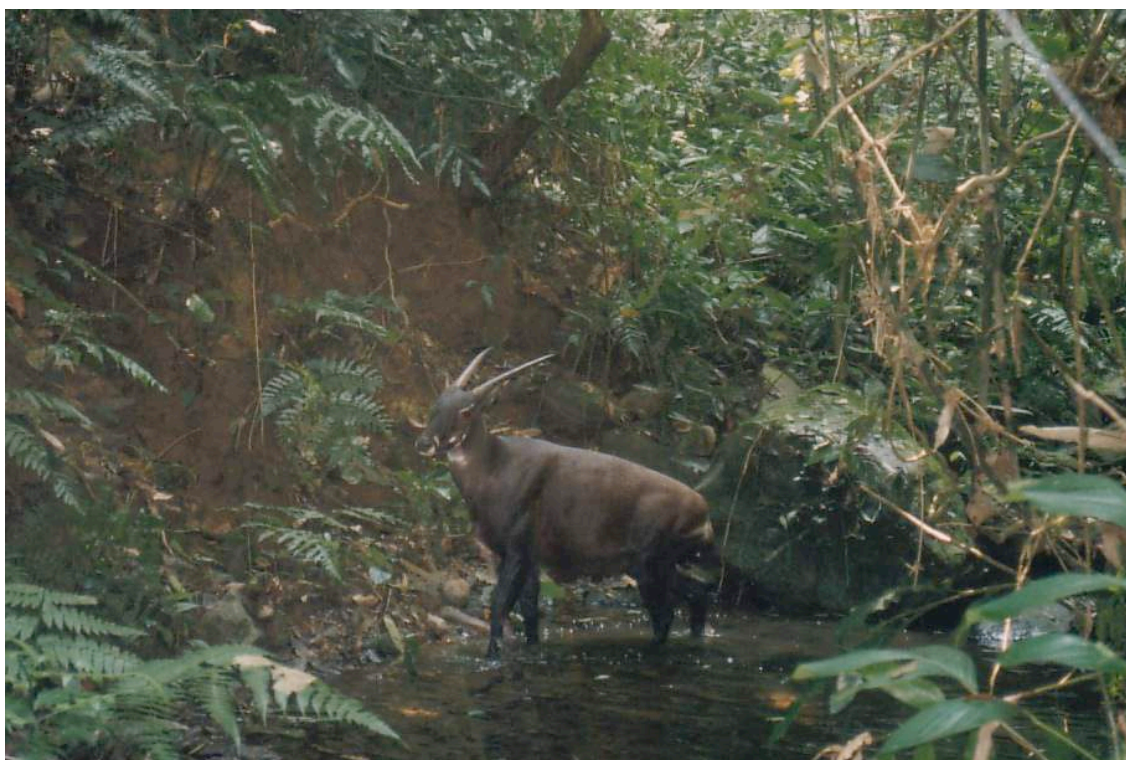
SAVING THE 'ASIAN UNICORN'

A PROGRAM FOR THE RECOVERY OF A
CRITICALLY ENDANGERED SPECIES

Saola Working Group
IUCN SSC Asian Wild Cattle Specialist Group
2018



INTRODUCTION: WHY SAOLA?



Camera trap photograph of a Saola in Laos.

The Saola (*Pseudoryx nghetinhensis*) is at the center of one of the most remarkable wildlife conservation stories – and opportunities – in the world today. The story began with the scientific discovery of the Saola in the forests of Vietnam in 1992, a find which stunned the world. Few biologists imagined that a species so large and distinctive could remain undetected by the outside world until the closing years of the twentieth century.

The animal is endemic to forests of the Annamite Mountains along the Laos-Vietnam border. Saola's beauty, rarity and elusiveness have earned it the nickname 'Asian Unicorn'. Current best estimates are that fewer than 100 survive in the wild, and there are none in captivity. It is one of the most endangered large mammals in the world, and is listed on the IUCN Red List as Critically Endangered.

In response to the global importance and urgency of Saola conservation, in 2006 a Saola Working Group (SWG) was established as part of the IUCN SSC Asian Wild Cattle Specialist Group. The SWG currently has 34 members, and our mission statement is:

The Saola Working Group works collaboratively to conserve Saola in nature, and to leverage Saola as a flagship for conservation of the bio-cultural diversity of the Annamite Mountains as a whole.



The Saola's range in the Annamite Mountains.

The SWG's effort to save the Saola has the substantial added benefit of advancing conservation of the Annamite Mountains, a global biodiversity hotspot.

Since the Saola's discovery there, two new species of muntjac, a monkey, a rabbit, several birds and a rodent from a mammalian family thought extinct for more than five million years have been found in the Annamites. This is a pace of large vertebrate discovery unmatched anywhere in the world in perhaps the last century. In addition, other highly distinctive and threatened endemics were already known from the area, including beautiful primates such as the various doucs and crested gibbons. A focused program to save the Saola will help save many other distinctive and threatened species in the Annamites.

Taken together, few animals in the world, if any, share Saola's combination of four attributes:

1. Phylogenetic distinctiveness (a monospecific genus).
2. Degree of endangerment.
3. Limited conservation investment.
4. Conservation 'umbrella' of a global biodiversity hotspot (the Annamite Mountains).

Consequently, for those who wish to make a significant, incremental contribution to conservation of the Earth's biodiversity, among species Saola is an exceptionally compelling opportunity for investment.



Examples of other threatened Annamite endemics that would benefit from the conservation of the Saola: Red-shanked Douc, Northern White-cheeked Crested Gibbon, Large-antlered Muntjac, Truongson Muntjac, Annamite Striped Rabbit, Owston's Civet, Bourret's Box Turtle, Crested Argus, Eastern Black-ridged Leaf Turtle, and Four-eyed Turtle.

THE ISSUES: WHY IS SAOLA ENDANGERED?

HUNTING FOR THE WILDLIFE TRADE

Saola is threatened primarily by hunting, rather than habitat loss. The main hunting threat is not from subsistence hunting by local people, but by commercial poaching for the wildlife trade.

Saola is not specifically targeted by the wildlife trade, but it is still highly threatened by thousands of wire snares set in its range by professional poachers, targeting a diversity of other species. It is being wiped out as by-catch, and the scale of the problem is staggering. Since 2011, the SWG and its partners have focused on improving protection at five protected areas in Laos and Vietnam. Patrol teams recruited from local villagers have removed nearly 200,000 wire snares from these forests.

Still, thousands of snares remain (as the most committed poachers continue to reset them). Despite improvements in protected area management, no area in Vietnam or Laos is yet sufficiently protected to save a viable population of Saola.



Patrol ranger with wires snares collected in Nakai-Nam Theun National Protected Area, Laos.



A Saola found in a snare in Laos in 2010. Without professional care, it died at a village a few days later.

EFFECTS OF SMALL POPULATION SIZE

Saola is now distributed in several sub-populations, each of which is now threatened further by the affects of small population size, such as genetic inbreeding and the difficulty of isolated males and females to find each other for mating. A preliminary Population Viability Analysis conducted by the Saola Working Group at its meeting in November 2015 concluded that even if all poaching could be immediately completely stopped in the Saola's range, remaining Saola sub-populations would probably drift to extinction in the next 5 to 20 years.

THE SOLUTION: A PARTNERSHIP FOR THE IUCN "ONE PLAN APPROACH" TO SAVE THE SAOLA

We are in an urgent situation. Twenty-five years after its spectacular discovery, Saola is approaching the brink of extinction. To save this remarkable animal, the establishment of a conservation breeding program is essential. This approach is consistent with the IUCN standard for the conservation of highly threatened species, known as the One Plan Approach. The IUCN One Plan Approach recognizes that for a highly endangered species, captive management and conservation of the species in the wild need to be integrated into one conservation program. This is the approach being taken by the SWG for Saola.

The SWG's One Plan strategy to save Saola is based on the following six components:

1. ASSEMBLE A HIGHLY QUALIFIED TEAM TO COORDINATE AND IMPLEMENT THE SAOLA ONE PLAN PROGRAM.

We understand the actions required to save Saola from extinction. The SWG is now engaged in recruiting the best people to implement them. Part of this effort includes a focus on capacity building of national conservation leaders and biologists in Laos and Vietnam, whose long-term contributions to wildlife conservation in their countries will continue long past and beyond the conservation of Saola.

2. BUILD WIDESPREAD POLITICAL, PROFESSIONAL AND FINANCIAL SUPPORT FOR THE SAOLA ONE PLAN.

Although Saola is one of the most distinctive and endangered large mammals in the world, comparatively few people are aware of the animal and the urgency of its conservation. The SWG is working to bring international attention to Saola, and build a global partnership to save it from extinction. In the past few years, numerous institutions around the world, and in particular zoos, have stepped forward to commit both technical and financial support to the Saola program. At the same time, the SWG has worked successfully to build support within the governments of Laos and Vietnam for the Saola One Plan, including the capture of animals for a captive breeding program.

3. ESTABLISH AND OPERATE A SAOLA CONSERVATION BREEDING CENTER IN THE SAOLA'S RANGE.

The governments of Laos and Vietnam have agreed to work together on a Saola conservation breeding program. By their joint consent, the world's first Saola conservation breeding center will be established at Vietnam's Bach Ma National Park, where it will be managed by the SWG. The center will serve a second purpose as the world's first conservation breeding program for the Critically Endangered Large-antlered Muntjac. The center will also build technical capacity of both Vietnamese and Lao for the conservation breeding of threatened ungulates generally.

The government of Vietnam has allocated to the SWG 40 ha of land in the administrative zone of Bach Ma NP for the development of the conservation breeding center. It includes some existing buildings and infrastructure that can be used for center offices and staff quarters. Facilities for housing animals will be developed in a modular fashion, which will allow expansion as needed.

4. LOCATE REMAINING SAOLAS IN THE WILD, AND PROTECT THEM *IN SITU* UNTIL THEY CAN BE CAPTURED FOR THE CONSERVATION BREEDING PROGRAM.

The remaining wild population of Saola is scattered in isolated subpopulations (and perhaps in some cases isolated individuals) across the species' remote, densely forested and mountainous terrain. Field research to first locate remaining Saolas is essential, for two reasons:

- to identify where to send the capture teams;
- to allow focused protection of remaining Saolas in the wild until they can be captured for the conservation breeding program.

The research program is an integration of several components:

- interviews with villagers in the Saola's range;
- camera-trapping;
- use of eDNA detection methods (focused mainly on analysis of potential Saola dung, and of stream water).

Once detected, if timing and logistics are not yet in place for an immediate capture attempt of the Saola(s), then ranger patrols will be deployed to the area, to protect the animals until captures can begin.

Research is also underway to identify the best locations for capture of Large-antlered Muntjacs for the conservation breeding program.

5. SAFELY CAPTURE FOUNDER SAOLAS (AND LARGE-ANTLERED MUNJTACS) FOR THE CONSERVATION BREEDING CENTER.

As soon as the conservation breeding center is prepared, and official permissions from the governments of Vietnam and Laos are in place, captures will begin (both governments have already agreed in principle to the captures, and the official permission is in process). Saola captures will proceed in the best locations as identified by the research, using a team with international best-practice expertise, in cooperation with local villagers. The capture process will be adaptive; captures of Large-antlered Muntjacs could come first, in part as a trial, but not necessarily. Captures will proceed in both countries, and Saolas captured in Laos will be transferred to breeding center in Vietnam, under a joint agreement between the two countries.

6. ESTABLISH EFFECTIVE LONG TERM *IN SITU* PROTECTION OF SAOLA.

The sole objective of this program is the conservation of Saola in the wild, and effective protection of its Annamite Mountains habitat. In parallel with captive breeding, the other half of the One Plan approach, effective *in situ* conservation, will be pursued long-term at six key landscapes in the Saola's range. And by securing these areas for eventual Saola reintroductions, we will also conserve viable wild populations of many other endemic and threatened Annamite species, such as Red-shanked Douc, White-cheeked Gibbon and Annamite Striped Rabbit.



Successful Saola conservation will be challenging, but we have multiple prerequisites and opportunities for success, including:

- a very close, friendly political relationship between the countries of Laos and Vietnam, and the support of their governments for the One Plan program;
- absence of targeted demand for Saola in the wildlife trade (unlike, for example, rhinos or pangolins)
- good cooperation from local villagers in the Saola's range – since conservation of Saola has little or no 'cost' for them; in fact, they benefit through participation in the research and patrolling.
- a committed international consortium organized by the Saola Working Group.

We have an opportunity for success in saving this beautiful animal. We just need to act on it, and soon.

SAOLA ONE PLAN PROGRAM BUDGET									
YEAR 1					YEAR 2				
	Actions	Unit	Unit Cost	No. of Units	Total Year 1 (US\$)	Unit	Unit Cost	No. of Units	Total Year 2 (US\$)
OBJECTIVE 1	ASSEMBLE LEADERSHIP & TECHNICAL COORDINATION TEAM FOR THE SAOLA ONE PLAN PROGRAM								
Component 1.1	Personnel (salary + benefits)								
	Saola Working Group Director (80% time)	Month	6,500	10	65,000	Month	6,500	10	65,000
	SWG Operations Director and Laos coordinator	Month	5,500	12	66,000	Month	5,500	12	66,000
	Vietnam Coordinator (national; 50% time; already covered by donor)	Month	1,200	0	0	Month	1,200	0	0
	Admin and government liaison officer, Laos (50% time)	Month	500	12	6,000	Month	500	12	6,000
	Research leader, and research coordinator for Laos (international)	Month	6,500	12	78,000	Month	6,500	12	78,000
	Research & logistics coordinator for Vietnam (international)	Month	4,000	12	48,000	Month	4,000	12	48,000
	Financial administrator (national, full-time)	Month	1,200	12	14,400	Month	1,200	12	14,400
Component 1.2	Operations support								
	Regional office rent and maintenance	Month	1,500	12	18,000	Month	1,500	12	18,000
	Office equipment	Lump	3,000	1	3,000	Lump	2,000	1	2,000
	Office supplies, utilities and services	Month	300	12	3,600	Month	200	12	2,400
	Vehicle (used)	Item	25,000	1	25,000				
	Vehicle registration and maintenance	Month	200	12	2,400	Month	200	12	2,400
	Regional coordination travel and liaison meetings	Month	600	12	7,200	Month	600	12	7,200
	International travel for leadership & management team (average per trip)	Trip	1,200	10	12,000	Trip	1,200	10	12,000
	Objective 1 subtotal				\$348,600				\$321,400
OBJECTIVE 2	BUILD WIDESPREAD SUPPORT FOR THE SAOLA ONE PLAN								
Component 2.1	Build One Plan support among key government agencies, academics and NGOs in Vietnam and Laos.								
	National consultation meetings, with key govt agencies, NGOs and academic institutions at central level in Vietnam & Laos	Meeting	10,000	2	20,000				
	Consultation meetings in key provinces	Meeting	3,000	6	18,000	Meeting	3,000	3	9,000

Component 2.2	Foster close cooperation between the governments of Vietnam & Laos for the Saola One Plan								
	Technical coordination meeting between Vietnam, Laos and the SWG	Meeting	25,000	1	25,000	Meeting	10,000	1	10,000
	Objective 2 subtotal				\$63,000				\$19,000
OBJECTIVE 3	ESTABLISH AND OPERATE THE SAOLA CONSERVATION BREEDING CENTER								
Component 3.1	Personnel (salary + benefits)								
	Center Manager & Head Keeper (international)	Month	4,000	9	36,000	Month	4,000	12	48,000
	Veterinarian (international)	Month	4,000	6	24,000	Month	4,000	12	48,000
	National staff - keepers, maintenance, security (6	Month	4,800	6	28,800	Month	4,800	12	43,200
	International travel for Manager and Veterinarian	Trip	1,500	2	3,000	Trip	1,500	2	3,000
Component 3.2	Center design								
	Reconnaissance and assessment visits by design team to center site	Trips	3,000	2	6,000				
	Conservation Breeding Centre design completed (design provided pro bono)	Action	0	1	0				
Component 3.3	Center construction and operation								
	Enough of center constructed to be operational	Action	175,000	1	175,000				
	Equipment	Lump	75,000	1	75,000	Lump	15,000	1	15,000
	Centre operational costs (supplies, utilities, services, regional travel)	Month	3,000	4	12,000	Month	3,000	12	36,000
	Center upkeep and incremental expansion	Lump	10,000	1	10,000	Lump	10,000	1	10,000
	4WD vehicle	Item	40,000	1	40,000				
	Vehicle - motorbike	Item	5,000	3	15,000				
	Vehicles operation, registration and maintenance	Month	1,000	10	10,000	Month	1,000	10	10,000
	Objective 3 subtotal				\$434,800				213,200
OBJECTIVE 4	LOCATE AND PROTECT REMAINING SAOLAS IN SITU								
Component 4.1	Expand research to locate remaining Saolas.								
	Personnel								
	National biologist, Laos	Month	2,000	12	24,000	Month	2,000	12	24,000
	Technical support team, Laos (2 national biologists)	Month	2,000	12	24,000	Month	2,000	12	24,000
	Partner technical support institution, Vietnam	Month	2,000	12	24,000	Month	2,000	12	24,000
	Research								
	Village interview surveys	Survey	5,000	6	30,000				
	300 additional camtraps (plus batteries, SD cards, shipping and customs)	Item	300	300	90,000				

	Camera-trap and eDNA field surveys	Survey	8,000	10	80,000	Survey	8,000	8	64,000
	eDNA sample analysis (export and lab costs)	estimat	20,000	1	20,000	estimat	20,000	1	20,000
Component 4.2	Protect remaining Saolas in the priority capture locations								
	Team coordinator and trainer	Month	4,500	8	36,000	Month	4,500	12	54,000
	National team leaders (2, Vietnam and Laos)	Month	1,500	8	12,000	Month	1,500	12	18,000
	Additional team members (4; 2 for each team)	Month	800	8	6,400	Month	800	12	9,600
	Vehicle rental, operation and maintenance	Month	1,000	16	16,000	Month	1,000	16	16,000
	Field equipment for teams	Lump	2,000	2	4,000	Lump	1,000	2	2,000
	Protection and snare removal patrols (2 concurrently)	Month	6,000	6	36,000	Month	6,000	6	36,000
	Objective 4 subtotal				402,400				291,600
OBJECTIVE 5	SAFELY CAPTURE FOUNDER SAOLAS FOR THE CONSERVATION BREEDING CENTER								
Component 5.1	Establish regional emergency reponse team, to secure Saolas encountered unexpectedly								
	Temporary holding facilities established	Item	10,000	1	10,000				
	Key ranger teams trained and equipped to safely secure a Saola if they find one unexpectedly (e.g, in a poacher's snare)	Trainings	6,000	6	36,000				
Component 5.2	Prepare for capture, handling and transport								
	Preparation field research for Large-antlered Muntjac and Saola capture	Survey	15,000	2	30,000				
	Purchase and ship capture & transport equipment	Lump	30,000	1	30,000				
	Purchase and ship veterinary equipment	Lump	15,000	1	15,000				
	Field test capture protocols, including capture / transportation of ungulates	Survey	12,000	2	24,000				
Component 5.3	Safely capture LA Muntjacs and Saola and deliver them to the breeding centre								
	Personnel								
	Hoofstock Expert (international) x2					Month	6,000	9	54,000
	Field Veterinarian (international) x2					Month	6,000	9	54,000
	Capture Team Lead (national) x2					Month	2,000	10	20,000
	Capture Team Deputy (national) x2					Month	1,500	10	15,000
	Site-based Assistants (national) x2					Month	600	10	6,000
	Professional Dog Handler (international) x2					Month	6,000	9	54,000
	Capture Dog Handler (national) x2					Month	800	16	12,800
	International travel for capture team members					Trip	2,000	8	16,000

	Operations								
	4WD vehicles					Item	40,000	2	80,000
	Drivers (2)					Month	500	24	12,000
	Vehicles operation and maintenance					Month	1,000	6	6,000
	Saola capture operations and transfer to captive center					Actions	25,000	6	150,000
	Objective 5 subtotal						\$145,000		\$329,800
OBJECTIVE 6	ESTABLISH EFFECTIVE LONG TERM <i>IN SITU</i> PROTECTION OF SAOLA								
Component 6.1	Long-term threat reduction in six key landscapes, for eventual re-introduction								
	SWG, GoL and GoVN site prioritization workshop					Worksh	20,000	1	20,000
	Protection audits conducted in all six sites					Survey	5,000	6	30,000
	SWG consultation & agreement on minimum enforcement actions required for protection of Saola					Worksh op	10,000	1	10,000
	Indepth community consultations held around 6 sites to identify social issues facilitating poaching					Site	10,000	6	60,000
	OBJECTIVE 6 SUBTOTALS						\$0		120,000
	PROGRAM TOTALS:						\$1,393,800		\$1,295,000