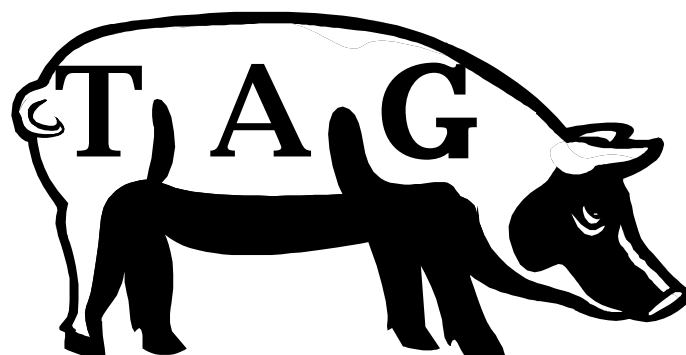




ASSOCIATION OF ZOOS & AQUARIUMS

Wild Pig, Peccary and Hippo Taxon Advisory Group



Regional Collection Plan Second Edition 2008

Compiled by
AZA Wild Pig, Peccary and Hippo
Taxon Advisory Group Steering Committee

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*2008 Regional Collection Plan edited by
Dawn Petefish, Peoria Zoo and Jeff Holland, Los Angeles Zoo*

Wild Pig, Peccary and Hippo TAG Introduction

The suborder Suiformes includes three distinct extant families within the order Artiodactyla. The family Suidae, with 19 species of wild pigs that inhabit every continent except Australia, the family Tayassuidae, with three species of peccaries ranging from North America to South America and the family Hippopotamidae, with two species found in Africa. Members of this suborder have adapted to a wide variety of habitats that include grasslands, tropical forests, woodlands, deserts and river systems.

Of the 24 species representing the Suiformes twelve (50%) of these species are either Threatened or Endangered. All 12 of these species (and many related subspecies) are in need of conservation attention, yet only 6 of them have active conservation support either through the efforts of local Non-Governmental Organizations (NGO's) or through zoological and NGO partnerships.

We are at a point when the natural world is being destroyed or modified more rapidly than ever experienced in modern times, the global biosphere is now also being challenged by perhaps the greatest threat yet - rapid human-influenced climate change. For the vast majority of species their only chance at survival may be through the collaborative efforts of those of us who want and are willing to make a difference. Our Zoological Institutions can make a very real impact on the conservation of all these species. By partnering with our colleagues, by sharing our unique management, husbandry as well as habitat stewardship experiences, by using our skills for conveying educational messages, and collaborating with the local NGO's or governments we can make a difference and quite possibly increase the probability that many, if not all, of these species actually have a place in which to survive.

Hippo Sub Group

Once nested under the umbrella of the Tapir TAG, because housing considerations were thought to be similar, no clear need for their own status and for lack of a better taxonomic group to place them in, Hippos were moved into the Pig & Peccary TAG.

At the 2006 AZA Ungulate TAG meeting the suggestion was introduced of creating a separate Hippo TAG in an effort to remove them from under the umbrella of the Pig and Peccary TAG. While it was felt there was not enough interest or attention to create a separate Hippo TAG, the decision was made to create a Hippo subgroup within the Wild Pig, Peccary and Hippo TAG.

AZA Wild Pig, Peccary and Hippo Mission Statement

To provide guidance and recommendations to AZA institutions regarding captive management of wild pigs, peccaries and hippos in North America, and to facilitate activities and programs that support global pig, peccary and hippo conservation.

AZA WPPH TAG Primary Goals

- 1) Promote the importance and value of exhibiting pigs, peccaries and hippos in AZA zoos.
- 2) Establish and coordinate captive management programs for wild pigs, peccaries and hippos currently in AZA institutions.
- 3) Serve as a resource for zoos seeking information on husbandry and management of pigs, peccaries and hippos in captivity.
- 4) Aid in the conservation of pigs, peccaries and hippos in the wild, by encouraging and facilitating the involvement of AZA zoos with *in-situ* conservation projects.
- 5) Promote the highest standards of husbandry and welfare of pigs, peccaries and hippos through the development of Animal Care Manuals (ACM).

Regional Collection Plan

The primary responsibility of an AZA Taxon Advisory Group (TAG) is the development of a Regional Collection Plan as written in the AZA Regional Collection Plan Handbook, 2007¹. TAGs develop RCPs to help AZA institutions plan their individual collections and select species that ensure their own and the Association's animal management and conservation goals. Institutions that use RCPs to guide their institutional collection planning processes benefit from the TAGs' comprehensive taxonomic review. The first edition of the Wild Pig and Peccary RCP was produced in 2001 (Holland, 2001) and provided the first application of coordinated management to a very large and diverse group of animals in AZA institutions. This second edition further develops program recommendations and management of wild pigs and peccaries, and now includes program and management recommendations for hippos.

This Regional Collection Plan is a dynamic document and it will continue to change as conditions for captive and wild pigs, peccaries and hippos change. Accordingly, this plan will be updated and revised every three years with additional updates where appropriate. Any additional recommendations will follow the same selection process outlined in this document, as this process is essential to maintaining consistent animal management and conservation objectives for pig, peccary and hippo populations.

¹ AZA Regional Collection Plan Handbook, 2007. http://www.aza.org/AnMgt/Documents/PLH_RCPs.pdf

WPPH TAG Structure

The Wild Pig, Peccary and Hippo Taxon Advisory Group consists of a 15-member steering committee, including three officers (Chair, Vice Chair, and Secretary), non-voting program managers and advisors. According to the AZA guidelines for TAGs², each participating facility may designate an Institutional Representative (IR) to the WPPH TAG if it so chooses. The primary responsibility of the IR is to communicate with the steering committee and disseminate information from the WPPH TAG to their respective institutions. Communication with Institutional Representatives is through an electronic listserv and at annual and mid-year meetings.

The Steering Committee and Advisors for the TAG communicate throughout the year via email. There are four listservs available for various communications about TAG business and/or animal management.

wppagirs@lists.aza.org is a listserv that includes the TAG Chair, Vice-Chair, Secretary, Steering Committee members and IRs. This listserv is used to provide a confidential method of conducting TAG business.

pigspeccsandhippos@lists.aza.org is a listserv that includes any individuals interested in pigs, peccaries and hippos. This listserv is used for general communications from the TAG.

hipposubgroup@lists.aza.org is a listserv that includes many individuals interested in hippos. This listserv is used for general communications from the Hippo Sub Group.

The Steering committee is elected from the pool of IRs. Steering committee members serve three-year terms with no term limits. Steering committee members are responsible for taking part in decision-making in TAG operation, assisting with the development of the Regional Collection Plan, oversight of program management, leadership of standing and ad hoc committees, and other administrative duties as needed. Steering committee members are required to have access to electronic communication, and are encouraged to attend at least one meeting of the TAG each year. Officers are elected from the steering committee by the steering committee and serve unlimited terms for as long as they sit on the steering committee.

Advisors to the TAG include SSP Coordinators, PMP Coordinators and studbook keepers (if they are not elected steering committee members) and specialists in veterinary care, pathology, genetics, nutrition, reproduction, education, behavior management and field conservation. Advisors are non-voting participants in WPPH TAG operations and management.

wpph-sc@lists.aza.org is a listserv that includes the TAG Chair, Vice-Chair, Secretary, Steering Committee members, Steering Committee Advisors and the TAG's WCMC Liaison. This listserv is used to provide a confidential method of conducting Steering Committee business.

² Taxon Advisory Group Chair Handbook, 2007. http://www.aza.org/AnMgt/Documents/PLH_TAGs.pdf

Definition of TAG: Taxa within the WPPH TAG's Analysis

All wild pigs, peccaries and hippos fall under the programs of the Wild Pig, Peccary and Hippo TAG. However the majority of these species have never been held in captivity, nor are they likely to be obtained from the wild. A review of all wild pig, peccary and hippo species was performed and is contained in this document. A complete listing of species contained in the RCP can be found in the Species List (Table 1).

Domestic pigs are well represented in AZA facilities. These domestic breeds do not compete for space with wild pigs and therefore are not included in this review.

Conservation Status

In the last 10 years great strides have been achieved in the conservation of the pygmy hog (*Porcula salvanius*) in Assam, India, the babirusa (*Babyrousa babyrussa celebensis*) on the island of Sulawesi in Indonesia, the Visayan warty pig (*Sus cebifrons*) in the Philippines and most recently the Javan warty pig (*Sus verrucosus verrucosus*) on the island of Java in Indonesia, the Chacoan peccary (*Catagonus wagneri*) in Paraguay and the pygmy hippopotamus (*Hexaprotodon liberiensis*) in West Africa. Despite these increasing efforts none of these species or subspecies can be considered secured, yet it is only through such collaborative efforts that any of them will have a real chance for survival. RCP species conservation status is listed in the Conservation Status Table (Table 2).

A very recent and representative example of what can be achieved is an effort that has been made for the Javan warty pig (*Sus verrucosus verrucosus*). This species is on the verge of extinction on the island of Java, the last remaining place where it can be found. Despite the IUCN/SSC Pigs and Peccaries Specialist Group identifying this species as a high priority for conservation assistance in its 1993 Action Plan, no conservation action had been implemented for the species. Not until 2005 with the support of the Los Angeles Zoo and Oregon Zoo did any action begin through a partnership with a local Indonesian NGO. This partnership allowed for the first island wide survey to take place since 1992 in order to provide a current status for the Javan warty pig. With the information gleaned from the survey the Los Angeles Zoo pressed forward and partnered with the Zoological Society for the Conservation of Species and Populations (ZGAP) and Research Center for Biology –Indonesia (LIPI) to provide funding for the establishment of the first range state *ex situ* breeding facility as an eleventh hour effort to preserve the remnants of the population. The first Javan warty pigs have been brought to the breeding center in order to implement breeding efforts.

One institution can make a difference. If one can do this then, AZA partnerships and realistic commitment can accomplish even more. AZA institutions have the opportunity, as well as the call to action, to become a collaborative and practicing conservation force at a global level.

In April 2007 the TAG completed a survey to determine institutional interest in wild pig, peccary and hippo conservation. Results of the WPPH TAG Conservation Survey can be found in Appendix I. Contact information for TAG supported field conservation projects can be found on the individual species sheets and on the TAG's website at http://www.glenoakzoo.org/PPHTAG/field_conservation.htm.

Table 1: The Following Species are included in the WPPH TAG 2008

Common Name	IUCN Taxa ³	ISIS taxa ⁴
Golden babirusa	<i>Babyrousa babyrussa babyrussa</i>	
Babirusa	<i>Babyrousa babyrussa celebensis</i>	<i>Babyrousa babyrussa celebensis</i>
Togian Island's babirusa	<i>Babyrousa babyrussa togeanensis</i>	
Chacoan peccary	<i>Catagonus wagneri</i>	<i>Catagonus wagneri</i>
Pygmy hippopotamus	<i>Hexaprotodon liberiensis heslopi</i>	
Pygmy hippopotamus	<i>Hexaprotodon liberiensis liberiensis</i>	<i>Hexaprotodon liberiensis liberiensis</i>
Hippopotamus	<i>Hippopotamus amphibius kiboko</i>	<i>Hippopotamus amphibius kiboko</i>
Hippopotamus	<i>Hippopotamus amphibius amphibius</i>	<i>Hippopotamus amphibius amphibius</i>
Hippo	<i>Hippopotamus amphibius capensis</i>	
Hippo	<i>Hippopotamus amphibius constrictis</i>	
Hippopotamus	<i>Hippopotamus amphibius tschadensis</i>	
Giant forest hog	<i>Hylochoerus meinertzhageni ivoriensis</i>	<i>Hylochoerus meinertzhageni ivoriensis</i>
Giant forest hog	<i>Hylochoerus meinertzhageni meinertzhageni</i>	<i>Hylochoerus meinertzhageni meinertzhageni</i>
Congo forest hog	<i>Hylochoerus meinertzhageni rimator</i>	<i>Hylochoerus meinertzhageni rimator</i>
Collared peccary	<i>Pecari tajacu</i>	<i>Pecari tajacu</i>
Collared peccary	<i>Pecari tajacu angulatus</i>	<i>Pecari tajacu angulatus</i>
Collared peccary	<i>Pecari tajacu sonoriensis</i>	<i>Pecari tajacu sonoriensis</i>
Collared peccary	<i>Pecari tajacu tajacu</i>	<i>Pecari tajacu tajacu</i>
Cape Warthog	<i>Phacochoerus aethiopicus aethiopicus</i>	
Desert warthog	<i>Phacochoerus aethiopicus delamerei</i>	<i>Phacochoerus aethiopicus delamerei</i>
Common warthog	<i>Phacochoerus africanus</i>	<i>Phacochoerus africanus</i>
Eritrean warthog	<i>Phacochoerus africanus aeliani</i>	<i>Phacochoerus africanus aeliani</i>
Northern warthog	<i>Phacochoerus africanus africanus</i>	
Warthog	<i>Phacochoerus africanus massaicus</i>	
Southern warthog	<i>Phacochoerus africanus sundevallii</i>	<i>Phacochoerus africanus sundevallii</i>
Pygmy hog	<i>Porcula salvanius</i>	<i>Sus salvanius</i>
Bushpig	<i>Potamochoerus larvatus hassama</i>	<i>Potamochoerus larvatus hassama</i>
East Malagasy bushpig	<i>Potamochoerus larvatus hova</i>	<i>Potamochoerus larvatus hova</i>
Cape Bushpig	<i>Potamochoerus larvatus koiropotamus</i>	<i>Potamochoerus larvatus koiropotamus</i>
Malagasy bushpig	<i>Potamochoerus larvatus larvatus</i>	<i>Potamochoerus larvatus larvatus</i>
Red river hog	<i>Potamochoerus porcus</i>	<i>Potamochoerus porcus</i>
Bearded pig	<i>Sus barbatus ahoenobarbus</i>	
Bearded pig	<i>Sus barbatus barbatus</i>	<i>Sus barbatus barbatus</i>
Bearded pig	<i>Sus barbatus oi</i>	<i>Sus barbatus oi</i>
Visayan warty pig	<i>Sus cebifrons</i>	<i>Sus cebifrons</i>
Negros Island warty pig	<i>Sus cebifrons negrinus</i>	<i>Sus cebifrons negrinus</i>
Sulawesi warty pig	<i>Sus celebensis</i>	<i>Sus celebensis</i>
Philippine warty pig	<i>Sus philippensis</i>	<i>Sus philippensis</i>
Eurasian wild boar	<i>Sus scrofa</i>	<i>Sus scrofa</i>
Eurasian wild pig	<i>Sus scrofa affinis</i>	
Eurasian wild boar	<i>Sus scrofa algira</i>	<i>Sus scrofa algira</i>
Eurasian wild pig	<i>Sus scrofa attila</i>	
European wild boar	<i>Sus scrofa coreanus</i>	
Eurasian wild pig	<i>Sus scrofa cristatus</i>	
Eurasian wild pig	<i>Sus scrofa davidi</i>	
Eurasian wild boar	<i>Sus scrofa leucomystax</i>	<i>Sus scrofa leucomystax</i>
Eurasian wild boar	<i>Sus scrofa lybicus</i>	<i>Sus scrofa lybicus</i>
Eurasian wild boar	<i>Sus scrofa majori</i>	

Table 1: The Following Species are included in the WPPH TAG 2008 Cont.

Common Name	IUCN Taxa ³	ISIS taxa ⁴
Eurasian wild boar	<i>Sus scrofa meridionalis</i>	<i>Sus scrofa meridionalis</i>
Eurasian wild pig	<i>Sus scrofa moupinensis</i>	
Eurasian wild pig	<i>Sus scrofa nigripes</i>	
Eurasian wild boar	<i>Sus scrofa riukiuanus</i>	<i>Sus scrofa riukiuanus</i>
Eurasian wild pig	<i>Sus scrofa sibiricus</i>	
Eurasian wild pig	<i>Sus scrofa taivanus</i>	
Eurasian wild pig	<i>Sus scrofa ussuricus</i>	
Indonesian/ Banded wild pig	<i>Sus scrofa vittatus</i>	<i>Sus scrofa vittatus</i>
European wild boar	<i>Sus scrofa scrofa</i>	<i>Sus scrofa scrofa</i>
Javan warty pig	<i>Sus verrucosus blouchi</i>	
Javan warty pig	<i>Sus verrucosus verrucosus</i>	<i>Sus verrucosus verrucosus</i>
White-lipped peccary	<i>Tayassu</i>	<i>Tayassu</i>
White-lipped peccary	<i>Tayassu pecari</i>	<i>Tayassu pecari</i>
White-lipped peccary	<i>Tayassu pecari albirostris</i>	<i>Tayassu pecari albirostris</i>
White-lipped peccary	<i>Tayassu pecari equatorius</i>	<i>Tayassu pecari equatorius</i>
White-lipped peccary	<i>Tayassu pecari pecari</i>	<i>Tayassu pecari pecari</i>
White-lipped peccary	<i>Tayassu pecari ringens</i>	<i>Tayassu pecari rigens</i>
White-lipped peccary	<i>Tayassu pecari spiradens</i>	<i>Tayassu pecari spiradens</i>

Taxonomy

The Regional Collection Plan for Wild Pigs, Peccaries and Hippos follows the taxonomic classification presented in Wilson, D.E. and D.M. Reeder. 1993 Mammals Species of the World : A taxonomic and geographical reference.

³ **IUCN:** (The World Conservation Union) IUCN Species Survival Commission Red List of Threatened Species, 2008. www.iucnredlist.org

⁴ **ISIS:** International Species Information System, 2008. www.isis.org

Table 2: Conservation Status of Pig, Peccary and Hippo Species in the Wild

Common Name	IUCN Taxa ³	IUCN Red List ⁴	CITES ⁵	USFWS ⁶
Golden babirusa	<i>Babyrussa babyrussa babyrussa</i>	Vulnerable	Appendix I	Endangered
Babirusa	<i>Babyrussa babyrussa celebensis</i>	Vulnerable	Appendix I	Endangered
Togian Island's babirusa	<i>Babyrussa babyrussa togeanensis</i>	Vulnerable	Appendix I	Endangered
Chacoan peccary	<i>Catagonus wagneri</i>	Endangered	Appendix I	
Pygmy hippopotamus	<i>Hexaprotodon liberiensis heslopi</i>	Not Listed	Not Listed	
Pygmy hippopotamus	<i>Hexaprotodon liberiensis liberiensis</i>	Endangered	Appendix II	
Hippopotamus	<i>Hippopotamus amphibius kiboko</i>	Vulnerable	Appendix II	
Hippopotamus	<i>Hippopotamus amphibius amphibius</i>	Vulnerable	Appendix II	
Hippo	<i>Hippopotamus amphibius capensis</i>	Vulnerable	Appendix II	
Hippo	<i>Hippopotamus amphibius constrictis</i>	Vulnerable	Appendix II	
Hippopotamus	<i>Hippopotamus amphibius tschadensis</i>	Vulnerable	Appendix II	
Giant forest hog	<i>Hylochoerus meinertzhageni ivoriensis</i>	low risk/lc	Not Listed	
Giant forest hog	<i>Hylochoerus meinertzhageni meinertzhageni</i>	low risk/lc	Not Listed	
Congo forest hog	<i>Hylochoerus meinertzhageni rimator</i>	low risk/lc	Not Listed	
Collared peccary	<i>Pecari tajacu</i>	low risk/lc	Appendix II	
Collared peccary	<i>Pecari tajacu angulatus</i>	low risk/lc	Not Listed	
Collared peccary	<i>Pecari tajacu sonoriensis</i>	low risk/lc	Not Listed	
Collared peccary	<i>Pecari tajacu tajacu</i>	low risk/lc	Appendix II	
Cape Warthog	<i>Phacochoerus aethiopicus aethiopicus</i>	Extinct	Extinct	
Desert warthog	<i>Phacochoerus aethiopicus delamerei</i>	low risk/lc	Not Listed	
Common warthog	<i>Phacochoerus africanus</i>	low risk/lc	Not Listed	
Eritrean warthog	<i>Phacochoerus africanus aeliani</i>	low risk/lc	Not Listed	
Northern warthog	<i>Phacochoerus africanus africanus</i>	low risk/lc	Not Listed	
Warthog	<i>Phacochoerus africanus massaicus</i>	low risk/lc	Appendix II	
Southern warthog	<i>Phacochoerus africanus sundevallii</i>	low risk/lc	Not Listed	
Pygmy hog	<i>Porcula salvanius</i>	Critical	Appendix I	Endangered
Bushpig	<i>Potamochoerus larvatus hassama</i>	low risk/lc	Not Listed	
East Malagasy bushpig	<i>Potamochoerus larvatus hova</i>	low risk/lc	Not Listed	
Cape Bushpig	<i>Potamochoerus larvatus koiropotamus</i>	low risk/lc	Not Listed	
Malagasy bushpig	<i>Potamochoerus larvatus larvatus</i>	low risk/lc	Not Listed	
Red river hog	<i>Potamochoerus porcus</i>	low risk/lc	Not Listed	
Bearded pig	<i>Sus barbatus ahoenobarbus</i>	low risk/lc	Not Listed	
Bearded pig	<i>Sus barbatus barbatus</i>	low risk/lc	Not Listed	
Bearded pig	<i>Sus barbatus oi</i>	low risk/lc	Not Listed	
Visayan warty pig	<i>Sus cebifrons</i>	Critical	Not Listed	
Negros Island warty pig	<i>Sus cebifrons negrinus</i>	Not Listed	Not Listed	
Sulawesi warty pig	<i>Sus celebensis</i>	low risk/lc	Not Listed	
Philippine warty pig	<i>Sus philippensis</i>	Vulnerable	Not Listed	
Eurasian wild boar	<i>Sus scrofa</i>	low risk/lc	Not Listed	
Eurasian wild pig	<i>Sus scrofa affinis</i>	low risk/lc	Not Listed	
Eurasian wild boar	<i>Sus scrofa algira</i>	low risk/lc	Not Listed	
Eurasian wild pig	<i>Sus scrofa attila</i>	low risk/lc	Not Listed	
European wild boar	<i>Sus scrofa coreanus</i>	low risk/lc	Not Listed	
Eurasian wild pig	<i>Sus scrofa cristatus</i>	low risk/lc	Not Listed	
Eurasian wild pig	<i>Sus scrofa davidi</i>	low risk/lc	Not Listed	
Eurasian wild boar	<i>Sus scrofa leucomystax</i>	low risk/lc	Not Listed	
Eurasian wild boar	<i>Sus scrofa lybicus</i>	low risk/lc	Not Listed	
Eurasian wild boar	<i>Sus scrofa majori</i>	low risk/lc	Not Listed	

Table 2: Conservation Status of Pig, Peccary and Hippo Species in the Wild Cont.

Common Name	IUCN Taxa ³	IUCN Red List ⁴	CITES ⁵	USFWS ⁶
Eurasian wild boar	<i>Sus scrofa meridionalis</i>	low risk/lc	Not Listed	
Eurasian wild pig	<i>Sus scrofa moupinensis</i>	low risk/lc	Not Listed	
Eurasian wild pig	<i>Sus scrofa nigripes</i>	low risk/lc	Not Listed	
Eurasian wild boar	<i>Sus scrofa riukiuanus</i>	Vulnerable	Not Listed	
Eurasian wild pig	<i>Sus scrofa sibiricus</i>	low risk/lc	Not Listed	
Eurasian wild pig	<i>Sus scrofa taivanus</i>	low risk/lc	Not Listed	
Eurasian wild pig	<i>Sus scrofa ussuricus</i>	low risk/lc	Not Listed	
Indonesian/ Banded wild pig	<i>Sus scrofa vittatus</i>	low risk/lc	Not Listed	
European wild boar	<i>Sus scrofa scrofa</i>	Not Listed	Not Listed	
Javan warty pig	<i>Sus verrucosus blouchi</i>	Endangered	Not Listed	
Javan warty pig	<i>Sus verrucosus verrucosus</i>	Endangered	Not Listed	
White-lipped peccary	<i>Tayassu</i>	low risk/lc	Not Listed	
White-lipped peccary	<i>Tayassu pecari</i>	low risk/lc	Appendix II	
White-lipped peccary	<i>Tayassu pecari albirostris</i>	low risk/lc	Appendix II	
White-lipped peccary	<i>Tayassu pecari equatorius</i>	low risk/lc	Appendix II	
White-lipped peccary	<i>Tayassu pecari pecari</i>	low risk/lc	Appendix II	
White-lipped peccary	<i>Tayassu pecari ringens</i>	low risk/lc	Appendix II	
White-lipped peccary	<i>Tayassu pecari spiradens</i>	low risk/lc	Appendix II	

Conservation Status

The conservation status of each wild pig, peccary and hippo species was determined by consulting the 2007 IUCN Red Data List, current USFWS listings and CITES listings.

⁴ **IUCN Red List:** IUCN 2007. 2007 IUCN Red List of Threatened Species. www.iucnredlist.org

⁵ **CITES:** CITES Species Database, 2008. www.unep-wcmc.org

⁶ **USFWS:** US Fish and Wildlife Service, 2008. www.fws.gov

Space Analysis

A space assessment survey was conducted and completed by Dawn Petefish of the Peoria Zoo in December of 2005. A space survey was distributed electronically to 210 AZA-accredited institutions and related facilities. The responses from this survey were analyzed to determine the amount of space that is currently available and that will be available in the future to manage pigs, peccaries and hippos. 202 AZA institutions responded to the survey, which represents 96% of those AZA institutions surveyed.

Results indicated that in December 2005 there were 685 spaces being occupied by wild pigs, peccaries and hippos in AZA institutions and related facilities with a maximum capacity of 1057 spaces available. Within the next 5-10 years, the survey results indicated that the maximum capacity would increase within AZA institutions and related facilities to 1079 spaces. Results from the 2005 Space Survey can be found in the Space Survey Summary Table (Table 3).

Complete results of the WPPH TAG Space Survey can be found in Appendix III and on the TAG's website at http://www.glenoakzoo.org/PPHTAG/space_survey.htm.

Species Selection

The Wild Pig, Peccary and Hippo TAG Steering Committee makes its species selections and determines the management needs for the species included in the Regional Collection Plan (RCP) by using the following decision tree incorporating Selection Criteria for species selection and Management Criteria for recommended management program type.

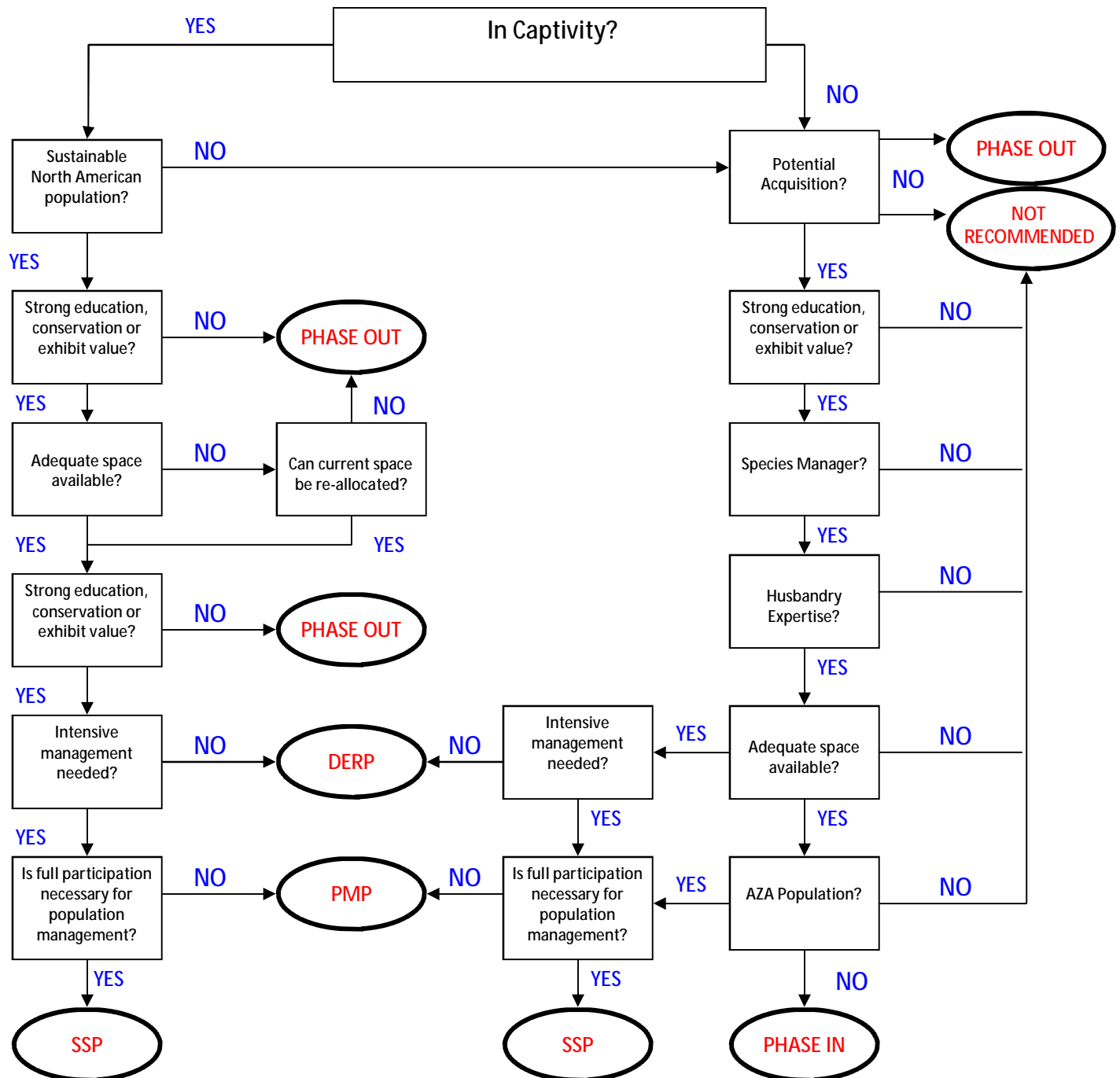
Species selection criteria and flow chart are demonstrated in the Decision Tree Template (Table 4).

Table 3: WPPH TAG 2005 Space Survey Results Summary

	Current Holding			Current Capacity			1-3 Year Capacity			3-5 Year Capacity			5-10 Year Capacity		
	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U
Babirusa	14	22	0	18	25	24	22	29	29	22	31	29	21	30	29
<i>Babirusa babirusa celebensis</i>															
Chacoan peccary	15	24	0	15	27	17	16	37	23	15	38	23	13	38	21
<i>Catagonus wagneri</i>															
Pygmy hippopotamus	6	11	0	8	11	9	9	12	9	12	14	12	9	11	13
<i>Hexaprotodon liberiensis</i>															
Pygmy hippopotamus	6	8	0	7	7	5	6	6	4	9	9	5	8	8	6
<i>Hexaprotodon liberiensis liberiensis</i>															
East African river hippopotamus	1	6	0	2	6	1	2	5	1	1	5	1	2	6	2
<i>Hippopotamus amphibius kiboko</i>															
River hippopotamus	31	54	0	29	53	6	22	59	10	21	57	13	24	64	14
<i>Hippopotamus amphibius</i>															
Northern river hippopotamus	1	2	0	1	2	1	1	2	1	2	3	1	3	4	2
<i>Hippopotamus amphibius amphibius</i>															
Western (Giant) forest hog	0	1	0	0	1	0	2	4	0	1	1	4	1	1	4
<i>Hylochoerus meinertzhageni ivoriensis</i>															
Collared peccary	21	21	4	20	22	8	11	16	4	11	12	4	13	16	12
<i>Pecari tajacu</i>															
Collared peccary	1	7	5	1	6	0	1	6	0	2	7	0	1	6	0
<i>Pecari tajacu angulatus</i>															
Collared peccary	10	11	2	2	10	0	2	10	0	3	11	0	2	10	0
<i>Pecari tajacu sonoriensis</i>															
Collared peccary	1	2	0	0	1	0	0	1	0	1	3	0	0	2	0
<i>Pecari tajacu tajacu</i>															
Warthog	61	52	0	58	54	50	57	57	62	56	58	64	55	53	63
<i>Phacochoerus africanus</i>															
Southern warthog	4	8	0	4	8	29	6	7	21	6	7	21	6	7	21
<i>Phacochoerus africanus sundevallii</i>															
Southern bush pig	2	3	0	2	3	15	4	5	15	2	2	0	2	2	0
<i>Potamochoerus larvatus koiropotamus</i>															
Red river hog	36	34	25	29	34	100	34	49	100	37	58	95	35	51	95
<i>Potamochoerus porcus</i>															
Pygmy hog	0	0	0	6	25	30	5	8	9	6	9	13	4	4	13
<i>Sus salvanius</i>															

Table 3: WPPH TAG 2005 Space Survey Results Summary Cont.

	Current Holding			Current Capacity			1-3 Year Capacity			3-5 Year Capacity			5-10 Year Capacity		
	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U
Bornean bearded pig	10	7	7	9	8	24	5	5	16	4	4	16	5	5	16
<i>Sus barbatus barbatus</i>															
Visayan warty pig	11	12	0	20	19	51	24	27	71	24	25	48	18	22	52
<i>Sus cebifrons</i>															
Eurasian wild pig	0	3	0	1	3	0	0	2	5	0	2	5	0	0	5
<i>Sus scrofa</i>															
Domestic pig, breed unspecified	36	51	29	27	51	47	23	48	54	18	40	55	17	41	55
<i>Sus scrofa f. domestica</i>															
Indonesian or Banded wild pig	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Sus scrofa vittatus</i>															
Central European wild pig	3	4	0	2	3	0	1	1	0	1	1	0	1	1	0
<i>Sus scrofs scrofa</i>															
White-lipped peccary	0	0	0	0	0	0	1	4	4	1	4	4	3	8	23
<i>Tayassu pecari</i>															
TOTALS	685			1057			1092			1092			1079		

Table 4: WPPH TAG 2008 Management Program Decision Tree


Revised for 2008 RCP

Each Species Decision Tree Assessment made by the Steering Committee can be found in **Appendix II**.

Target Population Sizes

Several factors were considered prior to setting a three-year target population for each species, including space survey results, conservation need and population status in the wild, global and regional population status in zoos and private facilities, available population viability information provided by the program leader and his/her small population management advisor, as well as the Steering Committee's species management expertise and knowledge.

For species with an AZA program, we enlisted the aid of the AZA Population Management Center to evaluate our projected target population sizes. This is the first evaluation of target sizes for this TAG by the Population Management Center. Plan species (PMPs) or Species Survival Plans[®] (SSPs), demographic and genetic analyses were conducted using the most current available studbook data and the Goal Setting screen of Population Management 2000 software (PM2000 Version 1.212). The current population size and baseline genetic analyses for each species was obtained from the population studbook or ISIS data as noted, for AZA institutions only unless otherwise stated. In additional modeling scenarios, adjustments to other demographic parameters such growth rate were made based on studbook data of the species in questions, similar species, or the expertise of meeting attendants.

Where noted, the number of founders that could reasonably be obtained was added into the projections to determine the impact on the maintenance of gene diversity. A potential founder is considered to be any animal that is unrelated to individuals in the current population, and may be obtained from other captive populations or from the wild. Although the importation of founders is considered in some of the management strategies evaluated, every effort should be made to create self-sustaining populations not reliant on imports. Frequent importations should not be viewed as an alternative strategy to responsible population management for the maintenance of gene diversity over time.

Management Goals: For each species, several different strategies were tested to evaluate population sizes relative to genetic and demographic sustainability over the next 100 years. The first strategy listed in the table for each species is a baseline strategy, demonstrating the projected status of the population assuming no changes to current management or population parameters and using either the population's current size or the estimated 3 to 5-year holding capacity from the TAG's 2005 space survey. Other strategies tested include changes to population parameters, including growth rate and effective population size, or the recruitment or acquisition of potential founders. The genetic goal for all populations was the maintenance of 90% gene diversity for 100 years into the future or, if starting gene diversity was unknown or already lower than 90%, long-term management goals are assumed to be the loss of no more than 10% gene diversity relative to the starting gene diversity.

Complete Management Program recommendations made to the WPPH TAG by PMC can be found in Appendix IV.

Program Roles and Purposes

All species for which programs are recommended in this RCP contribute to the conservation and/or awareness of pig, peccary and hippo species. The roles and purposes for all the species included in the RCP are included in the Program Recommendations Summary Tables (Table 5 & 6) on the Individual Species Sheets, and are described below as written in the AZA Regional Collection Plan Handbook, 2007.¹

Taxa must be assigned to one of the following Roles and Purposes:

Conservation Support—A sustainable captive population managed as an insurance population against the loss of the species in the wild, and which has components which directly link to some aspect of *in situ* conservation for the species. This conservation may include the release of captive animals back to the wild.

Education and Display – A sustainable captive population recommended due to the role they can play in educating the visiting public through unique conservation stories, behavior, biology, or a combination of the above.

Flagship species – High profile taxa that are likely to generate attention and financial support for field conservation programs for these taxa in their native ranges.

Representative taxon – Taxa which are the only (or one of few) examples of a specific taxonomic group maintained in captivity.

Research link – Species that would serve as models for the development of husbandry, reproductive and/or nutrition protocols, ecological and/or behavioral analyses, or censusing efforts which are designed to benefit both captive and wild populations of these and other taxa. Species receiving the “Research link” designation must have a TAG approved Research Proposal and a Program Leader who would be responsible for coordinating and reporting program progress.

In situ Focus - A species currently not in a North American captive program and/or unlikely to be part of a North American captive program. Species is of high Conservation Concern and is a priority for either supporting existing conservation work with the species or initiating conservation work for the species survival in the wild.

¹ AZA Regional Collection Plan Handbook, 2007. http://www.aza.org/AnMgt/Documents/PLH_RCPs.pdf

Program Management Categories

The levels at which species are to be managed was selected by the Steering Committee from the commonly-used management categories identified by WCMC and these management categories can be found within the Program Recommendations Summary (Tables 5 & 6), on the Individual Species Sheets, and are described below as written in the AZA Regional Collection Plan Handbook, 2007²

Taxa must be assigned to one of the following six categories:

Recommendations:

- Species Survival Plan (SSP)**
- Population Management Plan (PMP)**
- Display/Education/Research Population (DERP)**
- Phase IN**
- Phase OUT**
- Not Recommended (NR)**

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-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.

² AZA Regional Collection Plan Handbook, 2007. http://www.aza.org/AnMgt/Documents/PLH_RCPs.pdf

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.

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

Three Year Action Plan 2008-2011

The goals of the Wild Pig Peccary and Hippo Taxon Advisory Group for the next three years are outlined below. These goals are intended to focus attention on efforts directed at the *ex-situ* and *in-situ* management and conservation for wild pigs, peccaries and hippos.

- 1) The development of captive wild pig, peccary and hippo population management programs, which includes the recruitment and training of studbook keepers and PMP managers and the implementation of managed programs for all recommended species.
- 2) Identify Program coordinators for species recommended for *in-situ* support.
- 3) Develop husbandry manuals and breeding protocols for all seven species of pigs and peccaries currently in North America.
- 4) Develop contacts with the domestic swine industry in order to learn from their efforts to assist zoo or conservation programs with exotic swine or peccaries.
- 5) Coordinate Advisory Group activities with those of the IUCN's Pigs, Peccaries and Hippos Specialist Group and other regional TAG's on behalf of pig, peccary and hippo conservation.
- 6) Develop a database for medical issues concerning wild pigs and peccaries.
- 7) Encourage research in the development of safe and effective contraceptives for use in wild pigs, peccaries and hippos.

Table 5: WPPH TAG 2008 Program Recommendations Summary

Program Recommendation		3-Year Target Population	Program Role	Program Leader
Babirusa	SSP	100	Conservation	Penny Kalk
<i>Babirusa babyrussa celebensis</i>			Support	Bronx Zoo
				pkalk@wcs.org
Chacoan peccary	SSP	75	Conservation	Dennis Merritt
<i>Catagonus wagneri</i>			Support	De Paul University
				dmeritt@depaul.edu
Pygmy hippopotamus	SSP	57	Conservation	Matt Hohne
<i>Hexaprotodon liberiensis liberiensis</i>			Support	Disney's Animal Kingdom
				Matthew.hohne@disney.com
Hippopotamus	SSP	101	Conservation	John Davis
<i>Hippopotamus amphibius kiboko</i>			Support	Riverbanks Zoo and Garden
		(H.a.amphibius + H.a.kiboko)		jdavis@riverbanks.org
Hippopotamus	SSP	101	Conservation	John Davis
<i>Hippopotamus amphibius amphibius</i>			Support	Riverbanks Zoo and Garden
		(H.a.amphibius + H.a.kiboko)		jdavis@riverbanks.org
Giant forest hog	PHASE OUT	0	In Situ FOCUS	Need to identify program leader
<i>Hylochoerus meinertzhageni ivoriensis</i>				
Giant forest hog	Not Recommended	0	In Situ FOCUS	Need to identify program leader
<i>Hylochoerus meinertzhageni meinertzhageni</i>				
Congo forest hog	Not Recommended	0	In Situ FOCUS	Need to identify program leader
<i>Hylochoerus meinertzhageni rimator</i>				
Collared peccary	PMP	53	Education and Display	Jim Haigwood
<i>Pecari tajacu</i>		(All Pecari tajacu spp.combined)		Los Angeles Zoo
				Jim.Haigwood@lacity.org
Collared peccary	PMP	53	Education and Display	Jim Haigwood
<i>Pecari tajacu angulatus</i>		(All Pecari tajacu spp.combined)		Los Angeles Zoo
				Jim.Haigwood@lacity.org
Collared peccary	PMP	53	Education and Display	Jim Haigwood
<i>Pecari tajacu sonoriensis</i>		(All Pecari tajacu spp.combined)		Los Angeles Zoo
				Jim.Haigwood@lacity.org
Collared peccary	PMP	53	Education and Display	Jim Haigwood
<i>Pecari tajacu tajacu</i>		(All Pecari tajacu spp.combined)		Los Angeles Zoo
				Jim.Haigwood@lacity.org

Table 5: WPPH TAG 2008 Program Recommendations Summary Cont.

Program Recommendation	3-Year Target Population	Program Role	Program Leader
Desert warthog <i>Phacochoerus aethiopicus delamerei</i>	Not Recommended 0	In Situ FOCUS	Lisa Smith Zoo Atlanta lsmith@zooatlanta.org
Common warthog <i>Phacochoerus africanus</i>	PMP (All <i>Phacochoerus</i> spp.combined)	Flagship Species	Lisa Smith Zoo Atlanta lsmith@zooatlanta.org
Eritrean warthog <i>Phacochoerus africanus aeliani</i>	Not Recommended 0	In Situ FOCUS	Lisa Smith Zoo Atlanta lsmith@zooatlanta.org
Southern warthog <i>Phacochoerus africanus sundevallii</i>	PMP (All <i>Phacochoerus</i> spp.combined)	Flagship Species	Lisa Smith Zoo Atlanta lsmith@zooatlanta.org
Pygmy hog <i>Porcula salvanius</i>	PHASE IN 50	Conservation Support	Need to identify program leader
Cape bushpig <i>Potamochoerus larvatus koiropotamus</i>	PHASE OUT 0		
Red river hog <i>Potamochoerus porcus</i>	PMP 190	Flagship Species	Jeff Holland Los Angeles Zoo Jeff.Holland@lacity.org
Bearded pig <i>Sus barbatus barbatus</i>	PMP 30	Flagship Species	Yvette Kemp San Diego Zoo beardedpigs@cox.net
Visayan warty pig <i>Sus cebifrons</i>	SSP 75	Conservation Support	Curby Simerson San Diego Zoo csimerson@sandiegozoo.org
Philippine warty pig <i>Sus philippensis</i>	Not Recommended 0	In Situ FOCUS	Need to identify program leader
Eurasian wild boar <i>Sus scrofa riukiuanus</i>	Not Recommended 0	In Situ FOCUS	Need to identify program leader
Javan warty pig <i>Sus verrucosus blouchi</i>	Not Recommended 0	In Situ FOCUS	Jeff Holland Los Angeles Zoo Jeff.Holland@lacity.org
Javan warty pig <i>Sus verrucosus verrucosus</i>	Not Recommended 0	In Situ FOCUS	Jeff Holland Los Angeles Zoo Jeff.Holland@lacity.org

Table 6: 2008 WPPH TAG Species with NO Recommended Program

Golden babirusa	<i>Babyrousa babyrussa babyrussa</i>
Togian Island's babirusa	<i>Babyrousa babyrussa togeanensis</i>
Pygmy hippopotamus	<i>Hexaprotodon liberiensis heslopi</i>
Hippo	<i>Hippopotamus amphibius capensis</i>
Hippo	<i>Hippopotamus amphibius constrictis</i>
Hippopotamus	<i>Hippopotamus amphibius tschadensis</i>
Giant forest hog	<i>Hylochoerus meinertzhageni meinertzhageni</i>
Congo forest hog	<i>Hylochoerus meinertzhageni rimator</i>
Cape Warthog	<i>Phacochoerus aethiopicus aethiopicus</i>
Desert warthog	<i>Phacochoerus aethiopicus delamerei</i>
Eritrean warthog	<i>Phacochoerus africanus aeliani</i>
Northern warthog	<i>Phacochoerus africanus africanus</i>
Warthog	<i>Phacochoerus africanus massaicus</i>
Bushpig	<i>Potamochoerus larvatus hassama</i>
East Malagasy bushpig	<i>Potamochoerus larvatus hova</i>
Malagasy bushpig	<i>Potamochoerus larvatus larvatus</i>
Bearded pig	<i>Sus barbatus ahoenobarbus</i>
Bearded pig	<i>Sus barbatus oi</i>
Negros Island warty pig	<i>Sus cebifrons negrinus</i>
Sulawesi warty pig	<i>Sus celebensis</i>
Philippine warty pig	<i>Sus philippensis</i>
Eurasian wild boar	<i>Sus scrofa</i>
Eurasian wild pig	<i>Sus scrofa affinis</i>
Eurasian wild boar	<i>Sus scrofa algira</i>
Eurasian wild pig	<i>Sus scrofa attila</i>
European wild boar	<i>Sus scrofa coreanus</i>
Eurasian wild pig	<i>Sus scrofa cristatus</i>
Eurasian wild pig	<i>Sus scrofa davidi</i>
Eurasian wild boar	<i>Sus scrofa leucomystax</i>
Eurasian wild boar	<i>Sus scrofa lybicus</i>
Eurasian wild boar	<i>Sus scrofa majori</i>
Eurasian wild boar	<i>Sus scrofa meridionalis</i>
Eurasian wild pig	<i>Sus scrofa moupinensis</i>
Eurasian wild pig	<i>Sus scrofa nigripes</i>
Eurasian wild boar	<i>Sus scrofa riukiuanus</i>
Eurasian wild pig	<i>Sus scrofa sibiricus</i>
Eurasian wild pig	<i>Sus scrofa taivanus</i>
Eurasian wild pig	<i>Sus scrofa ussuricus</i>
Indonesian/ Banded wild pig	<i>Sus scrofa vittatus</i>
Javan warty pig	<i>Sus verrucosus blouchi</i>
Javan warty pig	<i>Sus verrucosus verrucosus</i>
White-lipped peccary	<i>Tayassu</i>
White-lipped peccary	<i>Tayassu pecari</i>
White-lipped peccary	<i>Tayassu pecari albirostris</i>
White-lipped peccary	<i>Tayassu pecari equatorius</i>
White-lipped peccary	<i>Tayassu pecari pecari</i>
White-lipped peccary	<i>Tayassu pecari ringens</i>
White-lipped peccary	<i>Tayassu pecari spiradens</i>

Table 7: Program Recommendations Changes Summary

	2008 Program Recommendation	2001 Program Recommendation	Program Change	Program Role	2008 Program Leader
Pygmy hippopotamus	SSP	N/A	Program	Conservation	Matt Hohne
<i>Hexaprotodon liberiensis liberiensis</i>			Manager Change	Support	Disney's Animal Kingdom
					Matthew.hohne@disney.com
Hippopotamus	SSP	N/A	Upgrade	Conservation	John Davis
<i>Hippopotamus amphibius kiboko</i>			PMP to SSP	Support	Riverbanks Zoo and Garden
					jdavis@riverbanks.org
Hippopotamus	SSP	N/A	Upgrade	Conservation	John Davis
<i>Hippopotamus amphibius amphibius</i>			PMP to SSP	Support	Riverbanks Zoo and Garden
					jdavis@riverbanks.org
Giant forest hog	PHASE OUT	ISP	Downgrade to PHASE OUT	In Situ FOCUS	Need program leader
<i>Hylochoerus meinertzhageni ivoriensis</i>					
Collared peccary	PMP	DERP	Upgrade	Education	Jim Haigwood
<i>Pecari tajacu</i>			DERP to PMP	and Display	Los Angeles Zoo
					Jim.Haigwood@lacity.org
Collared peccary	PMP	DERP	Upgrade	Education	Jim Haigwood
<i>Pecari tajacu angulatus</i>			DERP to PMP	and Display	Los Angeles Zoo
					Jim.Haigwood@lacity.org
Collared peccary	PMP	DERP	Upgrade	Education	Jim Haigwood
<i>Pecari tajacu sonoriensis</i>			DERP to PMP	and Display	Los Angeles Zoo
					Jim.Haigwood@lacity.org
Collared peccary	PMP	DERP	Upgrade	Education	Jim Haigwood
<i>Pecari tajacu tajacu</i>			DERP to PMP	and Display	Los Angeles Zoo
					Jim.Haigwood@lacity.org
Common warthog	PMP	PMP	Program	Flagship Species	Lisa Smith
<i>Phacochoerus africanus</i>			Manager Change		Zoo Atlanta
					lsmith@zoatlanta.org
Southern warthog	PMP	PMP	Program	Flagship Species	Lisa Smith
<i>Phacochoerus africanus sundevallii</i>			Manager Change		Zoo Atlanta
					lsmith@zoatlanta.org

Table 7: Program Recommendations Changes Summary Cont.

	2008 Program Recommendation	2001 Program Recommendation	Program Change	Program Role	2008 Program Leader
Pygmy hog	PHASE IN	NR	Upgrade	Conservation	Need Program Leader
<i>Porcula salvanius</i>			to PHASE IN	Support	
Cape bushpig	PHASE OUT	NR	Downgrade		
<i>Potamochoerus larvatus koiopotamus</i>			to PHASE OUT		
Bearded pig	PMP	DERP	Upgrade	Flagship Species	Yvette Kemp
<i>Sus barbatus barbatus</i>			DERP to PMP		San Diego Zoo
					beardedpigs@cox.net
Visayan warty pig	SSP	SSP	Program	Conservation	Curby Simerson
<i>Sus cebifrons</i>			Manager Change	Support	San Diego Zoo
					csimerson@sandiegozoo.org

Table 8: Program Recommendations Change Justification Summary

2008 Program Recommendation	2001 Program Recommendation	Program Change	Program Role	2008 Program Leader
Hippopotamus	SSP	N/A	Upgrade	Conservation
<i>Hippopotamus amphibius kiboko</i>		PMP to SSP	Support	John Davis
				Riverbanks Zoo and Garden
				jdavis@riverbanks.org

This population's pedigree is only 57% known, and so gene diversity is an estimate. But due to the long generation time, this population is likely to retain whatever gene diversity it currently has for an extended period of time. Given current population parameters and the target size suggested by the TAG space survey, gene diversity is projected to stay within 10% of its current level for 100 years.

The larger problem facing this population is demographic: this is an older population which faces losses due to natural attrition and with limited breeding potential due to a growing proportion of reproductively senescent animals and limited space available for breeding. Many institutions are interested in holding specimens for exhibit only, not breeding. However, some breeding is necessary in order to maintain a demographically healthy population into the future. Projections indicate that without additional births, the population would decrease to 80 animals in five years, and to 67 in 10 years. The TAG will identify a subset of institutions that can commit to breeding in order to maintain a demographically and genetically viable population and meet current and future exhibit needs. The TAG recommends upgrading this population to a SSP in order to monitor these efforts and maintain a long-term viable population.

Giant forest hog	PHASE OUT	ISP	Downgrade	In Situ FOCUS	Need program leader
<i>Hylochoerus meinertzhageni ivoriensis</i>			to PHASE OUT		

This species was listed as ISP In Situ Support Program in the 2001 RCP.

ISP: Taxa that have been identified by the IUCN/SSC Pigs and Peccaries Specialist Group as conservation priorities. The Wild Pig and Peccary Advisory Group has recommended that a program coordinator be assigned to each of these designated taxa to develop *in-situ* support programs and/or coordinate efforts in support of existing programs.

Although the TAG no longer uses ISP as a program designation, the Giant forest hog is still a species currently of high Conservation Concern and is a priority for either supporting existing conservation work with the species or initiating conservation work for the species survival in the wild.

Current program role is still InSitu Focus.

Currently there are animals in one AZA institution.

This species is designated a PHASE OUT of AZA collections due to incredibly low population numbers and a lack of interested institutions.

Current N.A. Population: **0.1.0** In **1** Institutions (2005 Space Survey)

Anticipated 3-5 Year Population **1.1.4** In **4** Institutions (2005 Space Survey)

Table 8: Program Recommendations Change Justification Summary Cont.

	2008 Program Recommendation	2001 Program Recommendation	Program Change	Program Role	2008 Program Leader
Collared peccary	PMP	DERP	Upgrade	Education	Jim Haigwood
<i>Pecari tajacu</i>			DERP to PMP	and Display	Los Angeles Zoo
					Jim.Haigwood@lacity.org

In February, 2004 this DERP program status was elevated to PMP status, in accordance with AZA policy. Whereby any program with an AZA approved studbook will be maintained as a PMP or SSP. This species shares potential spaces with Chacoan peccary. The TAG is considering decreasing this population in order to allocate more spaces to the Chacoan peccary population. It is recommended that the collared peccary population be designated as a PMP in order to manage and monitor phasing out a portion of the collared peccary population (e.g., those not necessary for themed exhibits). If breeding stops in the collared peccary population, the population is projected to decline from 86 to 53 specimens in 5 years, and to 32 specimens in 10 years (based on the current age structure). A small collared peccary population can be maintained for institutions that have designated Southwestern-themed exhibits, and breeding and recruitment can be monitored to meet these demographic and exhibit needs, but genetic management is not necessary.

Pygmy hog	PHASE IN	NR	Upgrade	Conservation	Need Program Leader
<i>Porcula salvanius</i>			to PHASE IN	Support	

The pygmy hog is the smallest of the suids and is considered highly endangered. For several years a local NGO, Ecosystems India and the Indian Government have successfully established a captive breeding program with the intentions of reintroducing the species back into the wild. A number of institutions are working on a potential import of founder animals for an AZA population.

Cape bushpig	PHASE OUT	NR	Downgrade		
<i>Potamochoerus larvatus koiropotamus</i>			to PHASE OUT		

This species was listed as NR Not Recommended in the 2001 RCP.

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

Currently there are animals in one AZA institution.

This species is to designated a PHASE OUT of AZA collections due to incredibly low population numbers and a lack of interested institutions.

Current N.A. Population: **2.3.0** In **1** Institutions (2005 Space Survey)

Anticipated 3-5 Year Population: **2.2.0** In **3** Institutions (2005 Space Survey)

Table 8: Program Recommendations Change Justification Summary Cont.

	2008 Program Recommendation	2001 Program Recommendation	Program Change	Program Role	2008 Program Leader
Bearded pig	PMP	DERP	Upgrade	Flagship Species	Yvette Kemp
<i>Sus barbatus barbatus</i>			DERP to PMP		San Diego Zoo
					beardedpigs@cox.net

In November, 2001 this DERP program status was elevated to PMP status, in accordance with AZA policy. Whereby any program with an AZA approved studbook will be maintained as a PMP or SSP. This population's gene diversity is already below 90%. Given estimated population parameters and the current population size projections indicate that gene diversity will drop below 10% of its current level within one generation. In order to meet genetic goals, additional founders are necessary for this population. The population is also at demographic risk due to the small population size. genetic goals (90% GD over 100 years) will not be met. The TAG will investigate importing founders from other regions and identify future additional spaces for this species in order to increase the target size. The TAG recommends upgrading this population to a PMP in order to monitor these efforts and maintain a long-term viable population.

Babirusa*Babirusa babirusa celebensis***Wild Conservation Status**Geographic Range **Sulawesi Island**IUCN **Vulnerable**CITES **Appendix I**USFWS **Endangered****Current North America population** 14.22.0 In 11 Institutions (2005 Space Survey)

21.25.0 In 13 Institutions (2007 SSP)

Current AZA Program

Current Population Management Program: **SSP**
 Current Population Manager: **Penny Kalk**
 Bronx Zoo
pkalk@wcs.org

Regional Studbook
Jeff Holland
 Los Angeles Zoo
Jeff.Holland@lacity.org

Most Recent Publish Date: **2007****2006****Other Regional Populations**

Europe 35
 S. Africa 2
 Asia 16

AZA TAG Program Recommendations

Recommended Program: **SSP**
 Program Role: **Conservation Support**
 Anticipated 3-5 Year Population: **22.31.29** In 20 Institutions (2005 Space Survey)
 Three Year Target population: **100**

Current Field Conservation Programs

Field Conservation Program: Bogani Nani Wartabone National Park, Sulawesi, Indonesia Protection/ Surveillance
www.wcs.org/international/Asia/Indonesia/BoganiNani www.wcs.org/international/Asia/Indonesia/sulawesi
 Wildlife Crime Unit, Sulawesi, Indonesia www.wcs.org/international/Asia/Indonesia/WCU
 Babirusa reintroduction to Tangkoko Nature reserve, Sulawesi, Indonesia feasibility study.

Field Program Coordinator: Dr. Nick Brickle nbrickle@wcs.org

North American Contact: Penny Kalk pkalk@wcs.org

Comments

The TAG recommends continued support of field surveys in Sulawesi. The potential of bringing new founder animals from Indonesia and Singapore Zoo needs to be explored. Founder animals are breeding at the Surabaya Zoo.

Chacoan peccary

Catagonus wagneri

Wild Conservation Status

Geographic Range **Gran Chaco of Paraguay, Bolivia and Argentina**

IUCN **Endangered**

CITES **Appendix I**



Photo Credit: Brent Huffman

Current North America population **15.24.0** In **7** Institutions (2005 Space Survey)

15.30 In **9** Institutions (2008 Studbook)

Current AZA Program

Current Population Management Program: **SSP**
 Current Population Manager: **Dennis Meritt**
 De Paul University
dmeritt@depaul.edu

Regional Studbook
Michael Quick
 Sedgwick County Zoo
mquick@scz.org

Most Recent Publish Date: **2007**

2007

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **SSP**
 Program Role: **Conservation Support**
 Anticipated 3-5 Year Population: **15.38.23** In **25** Institutions (2005 Space Survey)
 Three Year Target population: **75**

Current Field Conservation Programs

Field Conservation Program: "Proyecto Tagua"

Field Program Coordinator:

North American Contact: Dennis Meritt dmeritt@depaul.edu

Comments

TAG recommends continued support for in-situ projects in range country. The Chacoan peccary should replace the Collared peccary wherever feasible. Establish population in Europe and assist European zoos with imports from Paraguay.

Pygmy hippopotamus
Hexaprotodon liberiensis liberiensis

Wild Conservation Status

Geographic Range **Liberia, Guinea, Sierra Leone, Ivory Coast**

IUCN **Endangered**

CITES **Appendix II**



Current North America population **14.23** In **15** Institutions (2008 SSP Master Plan)
10.12.0 In **8** Institutions (ISIS (*H.l. liberiensis* only))

Current AZA Program

Current Population Management Program: **SSP**
 Current Population Manager: **Matt Hohne**
 Disney's Animal Kingdom
Matthew.hohne@disney.com

Regional Studbook
Michelle Maher
 Omaha's Henry Doorly Zoo
p.hippo@omahazoo.com

Most Recent Publish Date: **Scheduled for 2008** **2001**

Other Regional Populations

Europe 93
 S. Africa 44
 Asia 20
 ARAZPA 4

AZA TAG Program Recommendations

Recommended Program: **SSP**
 Program Role: **Conservation Support**
 Anticipated 3-5 Year Population: **17.23.17** In **25** Institutions (2005 Space Survey)
 Three Year Target population: **57**

Current Field Conservation Programs

Field Conservation Program: Gola Forest-Sierra Leone Project, Liberia Pygmy hippo Conservation Program
 Field Program Coordinator: Royal Society for the Protection of Birds & Conservation Society of Sierra Leone /FFI
 North American Contact: Matt Hohne Matthew.hohne@disney.com

Comments

The TAG suggests that institutions looking to support Pygmy hippo Conservation contact Matt Hohne, Pygmy Hippo SSP Coordinator for more information on the two TAG approved Conservation Projects in Sierra Leone and Liberia.

Hippopotamus

Hippopotamus amphibius kiboko

Wild Conservation Status

Geographic Range **Kenya and Somalia**

IUCN **Vulnerable**
 CITES **Appendix II**



Current North America population

1.6.0 In **4** Institutions (2005 Space Survey)

1.8.0 In **7** Institutions (ISIS (*H.a. kiboko* only))

Current AZA Program

Current Population Management Program: **PMP**
 Current Population Manager: **John Davis**
 Riverbanks Zoo and Garden
jdavis@riverbanks.org

Regional Studbook
John Davis
 Riverbanks Zoo and Garden
jdavis@riverbanks.org

Most Recent Publish Date: **2006**

2007

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **SSP**
 Program Role: **Conservation Support**
 Anticipated 3-5 Year Population: **1.5.1** In **6** Institutions (2005 Space Survey)
 Three Year Target population: **101 (*H.a.amphibius* + *H.a.kiboko*)**

Current Field Conservation Programs

Field Conservation Program: Weichau Hippo Sanctuary Project - Ghana
 Field Program Coordinator: Donna Sheppard Calgary Zoo Sanctuary
 North American Contact: Donna Sheppard dsheppard@yahoo.com

Comments

The TAG recommends that the two subspecies of hippos currently residing in AZA institutions be managed as one due to the low number of hippos in AZA institutions. The TAG has further recommended that the Hippo SSP determine which institutions can breed hippos and which institutions can hold hippos. The TAG is encouraging institutions holding hippos to support the Weichau Hippo Sanctuary Project in Ghana. This project is coordinated by Donna Sheppard- Calgary Zoo Sanctuary Advisor dsheppa@yahoo.com.

Hippopotamus

Hippopotamus amphibius amphibius

Wild Conservation Status

Geographic Range **East Africa and West to Gambia**

IUCN **Vulnerable**
CITES **Appendix II**



Current North America population **32.56.0** In **36** Institutions (2005 Space Survey)
38.70.1 In **41** Institutions (2006 PMP)

Current AZA Program

Current Population Management Program: **PMP**
Current Population Manager: **John Davis**
Riverbanks Zoo and Garden
jdavis@riverbanks.org

Regional Studbook
John Davis
Riverbanks Zoo and Garden
jdavis@riverbanks.org

Most Recent Publish Date: **2006**

2007

Other Regional Populations

Europe	148	ARAZPA	14
S. Africa	8		
S. America	9		
Asia	23		

AZA TAG Program Recommendations

Recommended Program: **SSP**
Program Role: **Conservation Support**
Anticipated 3-5 Year Population: **23.60.14** In **43** Institutions (2005 Space Survey)
Three Year Target population: **101 (*H.a.amphibius* + *H.a.kiboko*)**

Current Field Conservation Programs

Field Conservation Program: Weichau Hippo Sanctuary Project - Ghana
Field Program Coordinator: Donna Sheppard Calgary Zoo Sanctuary
North American Contact: Donna Sheppard dsheppard@yahoo.com

Comments

Current holding and future holding estimates represent those animals listed as *Hippopotamus amphibius* and those animals listed as *Hippopotamus amphibius amphibius* in ISIS. The TAG recommends that the two subspecies of hippos currently residing in AZA institutions be managed as one due to the low number of hippos in AZA institutions. The TAG has further recommended that the Hippo SSP determine which institutions can breed hippos and which institutions can hold hippos. The TAG is encouraging institutions holding hippos to support the Weichau Hippo Sanctuary Project in Ghana. This project is coordinated by Donna Sheppard- Calgary Zoo Sanctuary Advisor dsheppa@yahoo.com.

Visayan warty pig *Sus cebifrons*

Wild Conservation Status

Geographic Range **Philippines (Visayan Islands)**

IUCN **Critical**

CITES **Not Listed**



Current North America population **11.12.0** In **3** Institutions (2005 Space Survey)

18.20.0 In **7** Institutions (2007 SSP)

Current AZA Program

Current Population Management Program: **SSP**
 Current Population Manager: **Curby Simerson**
 San Diego Zoo
csimerson@sandiegozoo.org

Regional Studbook
Stephanie DeGesero
 Abilene Zoological Gardens
zoopersteph@yahoo.com

Most Recent Publish Date: **2007**

2007

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **SSP**
 Program Role: **Conservation Support**
 Anticipated 3-5 Year Population: **24.25.48** In **19** Institutions (2005 Space Survey)
 Three Year Target population: **75**

Current Field Conservation Programs

Field Conservation Program: Visayan Warty Pig Recovery Project
 Field Program Coordinator: William Oliver , Philippines Flora and Fauna International
 North American Contact: Curby Simerson, San Diego Zoo ; Jeff Holland, Los Angeles Zoo Jeff.Holland@lacity.org

Comments

This highly endangered species is a priority for the TAG. The TAG and the warty pig SSP are encouraging institutions to consider working with this species in order to assist the SSP in achieving a healthy and viable population in North America. The SSP is associated with the Conservation of the species in the Philippines through collaborative work with Philippines FFI. All institutions working with this species are required to support the Conservation efforts for the species in the Philippines. The reintroduction of this species is scheduled to take place within the next two years and support for this effort is needed.

Husbandry Guidelines: <http://www.glenoakzoo.org/PPHTAG/visayanwarty.htm>

TAG Subgroup: **Eurasian Suids**

Collared peccary

Pecari tajacu

Wild Conservation Status

Geographic Range

IUCN **low risk/lc (out of date)**
CITES **Appendix II**



Current North America population 21.21.4 In 14 Institutions (2005 Space Survey)
39.47.0 In 25 Institutions (2007 Studbook)

Current AZA Program

Current Population Management Program: **DERP**
Current Population Manager: **Jim Haigwood III**
Los Angeles Zoo
Jim.Haigwood@lacity.org

Regional Studbook
Jim Haigwood III
Los Angeles Zoo
Jim.Haigwood@lacity.org

Most Recent Publish Date:

2007

Other Regional Populations

Europe 294
S. America 52
ARAZPA 14

AZA TAG Program Recommendations

Recommended Program: **PMP**
Program Role: **Education and Display**
Anticipated 3-5 Year Population: **11.12.4 In 17 Institutions (2005 Space Survey)**
Three Year Target population: **53 (All *Pecari tajacu* spp.combined)**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

All Collard peccary subspecies are managed as one PMP population. This species is not considered threatened or endangered. The TAG has recommended that the PMP manage the collared peccaries for the sole purpose of providing a stable and healthy population for those institutions maintaining this species due to a zoogeographic theme. Those institutions that are not committed to this species for this reason are highly encouraged to replace them with the endangered Chacoan peccary that is in great need of more spaces.

Collared peccary

Pecari tajacu angulatus

Wild Conservation Status

Geographic Range

IUCN **low risk/lc (out of date)**
CITES **Not Listed**



Current North America population

1.7.5 In **3** Institutions (2005 Space Survey)

2.8.0 In **5** Institutions (ISIS (*P.t. angulatus* only))

Current AZA Program

Current Population Management Program: **DERP**
Current Population Manager: **Jim Haigwood III**
Los Angeles Zoo
Jim.Haigwood@lacity.org

Regional Studbook
Jim Haigwood III
Los Angeles Zoo
Jim.Haigwood@lacity.org

Most Recent Publish Date:

2007

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **PMP**
Program Role: **Education and Display**
Anticipated 3-5 Year Population: **2.7.0** In **4** Institutions (2005 Space Survey)
Three Year Target population: **53 (All Pecari tajacu spp.combined)**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

All Collard peccary subspecies are managed as one PMP population. This species is not considered threatened or endangered. The TAG has recommended that the PMP manage the collared peccaries for the sole purpose of providing a stable and healthy population for those institutions maintaining this species due to a zoogeographic theme. Those institutions that are not committed to this species for this reason are highly encouraged to replace them with the endangered Chacoan peccary that is in great need of more spaces.

Wild Conservation Status

IUCN **low risk/lc (out of date)**
CITES **Not Listed**

Current AZA Program

Regional Studbook
Jim Haigwood III
Los Angeles Zoo
Jim.Haigwood@lacity.org

Most Recent Publish Date: 2007

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **PMP**
 Program Role: **Education and Display**
 Anticipated 3-5 Year Population: **3.11.0 In 4 Institutions (2005 Space Survey)**
 Three Year Target population: **53 (All *Pecari tajacu* spp.combined)**

Current Field Conservation Programs

Field Conservation Program:
Field Program Coordinator:
North American Contact:

Comments

All Collard peccary subspecies are managed as one PMP population. This species is not considered threatened or endangered. The TAG has recommended that the PMP manage the collared peccaries for the sole purpose of providing a stable and healthy population for those institutions maintaining this species due to a zoogeographic theme. Those institutions that are not committed to this species for this reason are highly encouraged to replace them with the endangered Chacoan peccary that is in great need of more spaces.

Collared peccary

Pecari tajacu tajacu

Wild Conservation Status

Geographic Range

IUCN **low risk/lc (out of date)**
CITES **Appendix II**



Current North America population 1.2.0 In 2 Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program: **DERP**
Current Population Manager: **Jim Haigwood III**
Los Angeles Zoo
Jim.Haigwood@lacity.org

Regional Studbook
Jim Haigwood III
Los Angeles Zoo
Jim.Haigwood@lacity.org

Most Recent Publish Date:

2007

Other Regional Populations

Europe 55
S. America 5
Asia 2

AZA TAG Program Recommendations

Recommended Program: **PMP**
Program Role: **Education and Display**
Anticipated 3-5 Year Population: **1.3.0 In 3 Institutions (2005 Space Survey)**
Three Year Target population: **53 (All *Pecari tajacu* spp.combined)**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

All Collard peccary subspecies are managed as one PMP population. This species is not considered threatened or endangered. The TAG has recommended that the PMP manage the collared peccaries for the sole purpose of providing a stable and healthy population for those institutions maintaining this species due to a zoogeographic theme. Those institutions that are not committed to this species for this reason are highly encouraged to replace them with the endangered Chacoan peccary that is in great need of more spaces.

Common warthog

Phacochoerus africanus



Wild Conservation Status

Geographic Range **Northern Savanna and Sahel Region of West/North Africa**

IUCN

CITES

Current North America population **61.52.0** In **45** Institutions (2005 Space Survey)
41.56.3 In **38** Institutions (ISIS (*P.africanus* only))

Current AZA Program

Current Population Management Program: **PMP**
 Current Population Manager: **Lisa Smith**
 Zoo Atlanta
lsmith@zooatlanta.org

Regional Studbook
Lisa Smith
 Zoo Atlanta
lsmith@zooatlanta.org

Most Recent Publish Date: **Scheduled for 2008**

Scheduled for 2008

Other Regional Populations

Europe 60
 S. Africa 1
 Asia 4

AZA TAG Program Recommendations

Recommended Program: **PMP**
 Program Role: **Flagship Species**
 Anticipated 3-5 Year Population: **56.58.64** In **57** Institutions (2005 Space Survey)
 Three Year Target population: **225 (*P. africanus* + *P.a. sundevalli*)**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

P.africanus and *P.a.sundevalli* are managed as one PMP population. With the exception of a handful of *P.a.sundevalli* specimens the remaining warthogs in North America are of unknown origin. The *P.a.sundevalli* population in North America is too small to be a viable population over the long-term. Thus the TAG has agreed to manage all warthogs *P.africanus* and *P.a.sundevalli* as one population in order increase the genetic diversity of the entire North American warthog population. Any institution wanting to support warthog conservation should look to supporting the desert warthog through the Northern Rangeland Grevy's Zebra Trust or look to initiate in-situ conservation support for the Eritrean warthog (*P.africanus aeliani*).

Southern warthog

Phacochoerus africanus sundevallii

Wild Conservation Status

Geographic Range **Zimbabwe, Botswana, Namibia and Natal**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**



Current North America population

4.8.0 In **4** Institutions (2005 Space Survey)

8.8.2 In **7** Institutions (ISIS (*P.a.sundevallii* only))

Current AZA Program

Current Population Management Program: **PMP**
 Current Population Manager: **Lisa Smith**
 Zoo Atlanta
lsmith@zoatlanta.org

Regional Studbook
Lisa Smith
 Zoo Atlanta
lsmith@zoatlanta.org

Most Recent Publish Date: **Scheduled for 2008**

Scheduled for 2008

Other Regional Populations

S. Africa 195

AZA TAG Program Recommendations

Recommended Program: **PMP**
 Program Role: **Flagship Species**
 Anticipated 3-5 Year Population: **6.7.21** In **6** Institutions (2005 Space Survey)
 Three Year Target population: **225 (*P. africanus* + *P.a. sundevalli*)**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

P.africanus and *P.a.sundevallii* are managed as one PMP population. With the exception of a handful of *P.a.sundevallii* specimens the remaining warthogs in North America are of unknown origin. The *P.a.sundevallii* population in North America is too small to be a viable population over the long-term. Thus the TAG has agreed to manage all warthogs *P.africanus* and *P.a.sundevallii* as one population in order increase the genetic diversity of the entire North American warthog population. Any institution wanting to support warthog conservation should look to supporting the desert warthog through the Northern Rangeland Grevy's Zebra Trust or look to initiate in-situ conservation support for the Eritrean warthog (*P.africanus aeliani*).

Red river hog

Potamochoerus porcus

Wild Conservation Status

Geographic Range **West and Central Africa**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**



Current North America population **36.34.25** In **20** Institutions (2005 Space Survey)

73.64.0 In **33** Institutions (2007 PMP)

Current AZA Program

Current Population Management Program: **PMP**
 Current Population Manager: **Jeff Holland**
 Los Angeles Zoo
Jeff.Holland@lacity.org

Regional Studbook
Jeff Holland
 Los Angeles Zoo
Jeff.Holland@lacity.org

Most Recent Publish Date: **2007**

2007

Other Regional Populations

Europe 139
 Asia 9
 S. Africa 25

AZA TAG Program Recommendations

Recommended Program: **PMP**
 Program Role: **Flagship Species**
 Anticipated 3-5 Year Population: **37.58.95** In **38** Institutions (2005 Space Survey)
 Three Year Target population: **190**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This species is still considered to be widely distributed and therefore not threatened. However, it is possible that the species is being negatively impacted by the continued logging and hunting for bush meat in many of the range countries where it is found. A field status survey throughout its range would be an appropriate response. In captivity the species reproductive biology is still not completely understood. Further investigation into this aspect of its biology is necessary.

Husbandry Guidelines: http://www.glenoakzoo.org/PPHTAG/red_river_hog.htm

Red river hog PMP Transport Guidelines are Appendix VII: <http://www.glenoakzoo.org/PPHTAG/PPHTAGpdfs/RedRiverHogtransport.pdf>

TAG Subgroup: **Afrotropical Suids**

Bearded pig *Sus barbatus barbatus*

Wild Conservation Status

Geographic Range **Borneo**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**



Current North America population **10.7.7** In **4** Institutions (2005 Space Survey)

35.36.17 In **6** Institutions (2007 Studbook)

Current AZA Program

Current Population Management Program: **DERP**
 Current Population Manager: **Yvette Kemp**
 San Diego Zoo
beardedpigs@cox.net

Regional Studbook
Yvette Kemp
 San Diego Zoo
beardedpigs@cox.net

Most Recent Publish Date:

2007

Other Regional Populations

Europe 9
 Asia 15

AZA TAG Program Recommendations

Recommended Program: **PMP**
 Program Role: **Flagship Species**
 Anticipated 3-5 Year Population: **4.4.16** In **5** Institutions (2005 Space Survey)
 Three Year Target population: **30**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Individual identification is a priority for this species. A transponder should be inserted in each individual. The Bornean bearded pig is considered widespread but declining. Logging of the forests in Borneo have had a negative impact on the populations this species. In captivity little interest has been shown for this species however the TAG feels that this species is unique and charismatic enough to warrant a managed program to insure the survival of the species in North America over the next few years

Pygmy hog

Porcula salvanius

Wild Conservation Status

Geographic Range **Assam, India**

IUCN **Critical**

CITES **Appendix I**

USFWS **Endangered**



Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **PHASE IN**

Program Role: **Conservation Support**

Anticipated 3-5 Year Population: **6.9.13** In **4** Institutions (2005 Space Survey)

Three Year Target population: **50**

Current Field Conservation Programs

Field Conservation Program: **Pygmy Hog Captive Breeding Program**

Field Program Coordinator: **Dr. Goutam Naravan, Project Manager of Ecosystems India**

North American Contact:

Comments

The pygmy hog is the smallest of the suids and is considered highly endangered. For several years a local NGO, Ecosystems India and the Indian Government have successfully established a captive breeding program with the intentions of reintroducing the species back into the wild. Conservation support for this species should be directed to the Project Manager of Ecosystems India Dr. Goutam Naravan at ecosystems@sify.com

Giant forest hog

Hylochoerus meinertzhageni ivoriensis

Wild Conservation Status

Geographic Range **West Africa**

IUCN **low risk/lc**

CITES **Not Listed**



Photo Credit: Greg Robbins, LA Zoo

Current North America population

0.1.0 In **1** Institutions (2005 Space Survey)

0.1.0 In **1** Institutions (ISIS (*H.m. ivoriensis* only))

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **PHASE OUT**

Program Role: **In Situ FOCUS**

Anticipated 3-5 Year Population: **1.1.4** In **4** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

At the moment very little interest exists on forest hogs in Central and West Africa, where its conservation status is locally a matter of concern. If large populations seem to exist in some parts of the Congo Basin, most of the others - particularly those living outside protected areas - seem to pay a heavy tribute to deforestation, illegal hunting, and bush meat trade. A number of conservation projects would obviously be worth undertaking (pers. Comm. Jean-Pierre d'Huart, 2007). This is the smallest and most threatened subspecies of giant forest hog. Conservation measures should focus on protection of the remnant populations in the Guinea Savanna Zone of Guinea, Sierra Leone and Ivory Coast. Status surveys of these areas should be undertaken to determine the current status of this subspecies. The TAG would encourage any institution conducting field work in these countries to also look at the giant forest hog population.

Cape Bushpig*Potamochoerus larvatus koiropotamus***Wild Conservation Status**Geographic Range **Angola and South eastern Africa**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population****2.3.0** In **1** Institutions (2005 Space Survey)**4.5.1** In **1** Institutions (ISIS (*P.l. koiropotamus* only))**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **PHASE OUT**

Program Role:

Anticipated 3-5 Year Population: **2.2.0** In **3** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The species remains widely distributed and should not be regarded as threatened at the present time. Very few field studies have been conducted and many basic aspects of their systematics, biology and management requirements are poorly known and merit further investigation (Oliver, 1993).

European wild boar

Sus scrofa scrofa

Wild Conservation Status

Geographic Range **Europe**

IUCN **Not Listed**

CITES **Not Listed**



Current North America population **3.4.0** In 2 Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **PHASE OUT**

Program Role:

Anticipated 3-5 Year Population: **1.1.0** In 2 Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Institutions housing this species should rededicate the space for a TAG recommended species. The Eurasian Wild Pig of Europe is not threatened and is not considered a candidate for any particular in-situ conservation. Most range countries manage and regulate their populations for hunting purposes. At the present time the TAG has recommended that this species be phased out of the collections in North America, unless compelling reasons are presented to maintain a population for institutions that are committed to a zoogeographic theme.

*Several AZA institutions have listed domestic pigs (*Sus scrofa scrofa domestic*) as *Sus scrofa scrofa* the European or Eurasian wild boar. In December 2007, a survey was sent to those institutions listed as holding *Sus scrofa scrofa* with ISIS to clear up any taxonomic identification confusion.*

*This exercise resulted in many institutions resubmitting these animals to ISIS as *Sus scrofa scrofa domestic*.*

Results of the Eurasian Wild Boar Survey can be found in Appendix VIII.

Husbandry Guidelines: <http://www.glenoakzoo.org/PPHTAG/European%20Wild%20Boar.htm>

TAG Subgroup: **Eurasian Suids**

Giant forest hog

Hylochoerus meinertzhageni meinertzhageni

Wild Conservation Status

Geographic Range **East African Highlands**

IUCN **low risk/lc**

CITES **Not Listed**



Photo Credit: A.H. Shoemaker

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role: **In Situ FOCUS**

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The population of forest hogs in Ethiopia is currently attributed to this subspecies but could represent an as yet undescribed taxon (Oliver, 1993). Efforts to look at this should be made along with status surveys of the Ethiopian population. The TAG is investigating the possibilities of assisting and supporting this project. Currently there is only one project underway related to the forest hog. This project is a research project directed by Prof. Hans Klingel in the Queen Elizabeth National Park Uganda specifically geared towards ethology and ecology. This project has already produced a number of publications as well as a few Master theses by German researchers. The TAG is looking into gathering more information on this project. Additional status surveys should be conducted throughout the remainder of the H.m.meinertzhageni range in Sudan, Uganda, Rwanda, Burundi, Tanzania and Kenya.

Congo forest hog

Hylochoerus meinertzhageni rimator

Wild Conservation Status

Geographic Range **Central Africa**

IUCN **low risk/lc**

CITES **Not Listed**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role: **In Situ FOCUS**

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

At the moment very little interest exists on forest hogs in Central and West Africa, where its conservation status is locally a matter of concern. If large populations seem to exist in some parts of the Congo Basin, most of the others – particularly those living outside protected areas – seem to pay a heavy tribute to deforestation, illegal hunting, and bush meat trade. A number of conservation projects would obviously be worth undertaking (pers. Comm. Jean-Pierre d-Huart, 2007). Assess status and management needs and promote conservation of the most threatened western populations of this subspecies in northern Congo, north Gabon, southwestern Cameroon and the Nigeria/Cameroon border. It is sad that so little interest exist on Forest Hogs in Central and West Africa where its conservation status is locally a matter of concern. If large populations seems to subsist in some parts of the Congo Basin most of the others – particularly those living outside seem to pay a heavy tribute to deforestation, illegal hunting, and bush meat trade. A number of conservation projects would obviously be worth undertaking.

Desert warthog
Phacochoerus aethiopicus delamerei

Wild Conservation Status

Geographic Range **Northern Kenya and Somalia**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**

Recommended Program: **Not Recommended**

Program Role: **In Situ FOCUS**

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact: Martha Fischer fischer@stlzoo.org

Comments

Only in the last 15 years has it been realized that the desert warthogs are closely allied with the now extinct Cape warthog and that they are ecologically adapted to an arid environment. This realization makes them a very high priority for in-situ conservation. Field status surveys and protection of remaining habitat in northeastern Kenya, Somalia and possibly the Ogaden Region of Ethiopia are needed. Partnership projects with the Northern Rangelands Trust will also support the study and protection of the desert warthog.

Eritrean warthog
Phacochoerus africanus aeliani

Wild Conservation Status

Geographic Range **Eritrea, Djibouti and Somalia**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)
1.0.0 In **1** Institutions (ISIS *P.a. aeliani* only)

Current AZA Program

Current Population Management Program:
 Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**

Recommended Program: **Not Recommended**
 Program Role: **In Situ FOCUS**
 Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)
 Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact: Martha Fischer fischer@stlzoo.org

Comments

The Eritrean warthog is the most threatened subspecies of the common warthog. Field Status Surveys are necessary in order to determine the species status in Ethiopia and Djibouti. This would allow the development of a practical management plan for the future protection of the species.

Philippine warty pig *Sus philippensis*

Wild Conservation Status

Geographic Range **Philippines (Luzon and Mindanao island groups)**

IUCN **Vulnerable**

CITES **Not Listed**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role: **In Situ FOCUS**

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

*The Philippine warty pig is endemic to the Philippines and is rare and declining in most still-forested areas on the larger islands of Luzon, Mindoro, Samar, Leyete and Mindanao. Wild pigs of unknown origin are known to be found on the islands of Bohol and Sibuyan and a further investigation should be conducted to determine if these pigs are *Sus cebifrons* or *Sus philippensis*. The Philippine warty pig is endemic to the Philippines and is rare and declining in most still-forested areas on the larger islands of Luzon, Mindoro, Samar, Leyete and Mindanao. Wild pigs of unknown origin are known to be found on the islands of Bohol*

Eurasian wild boar
*Sus scrofa riukiuanus***Wild Conservation Status**Geographic Range **Japan (Ryukyu island chain)**IUCN **Vulnerable**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**Program Role: **In Situ FOCUS**Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This is the only subspecies of Sus scrofa that has been listed on the IUCN list where it has been listed as vulnerable since 1982. Field status surveys on all six islands within the Ryukyu Island chain are needed as is a concerted effort to try and protect the remaining populations.

Javan warty pig
*Sus verrucosus blouchi***Wild Conservation Status**Geographic Range **Bawean island**IUCN **Endangered**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**Program Role: **In Situ FOCUS**Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This endemic subspecies is found only on the island of Bawean and only within the Bawean Island Nature Reserve. Very few studies have been conducted on the status of this subspecies and therefore the benefit of a field status survey would be most helpful.

Javan warty pig

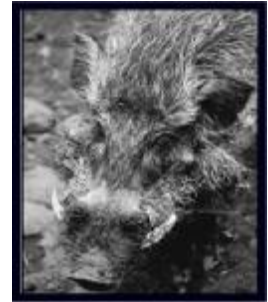
Sus verrucosus verrucosus

Wild Conservation Status

Geographic Range **Java**

IUCN **Endangered**

CITES **Not Listed**



Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role: **In Situ FOCUS**

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program: Javan Warty Pig Captive Breeding Project and Re-introduction

Field Program Coordinator: Dr. Gono Semiadi, Puslit Biology, LIPI & Resit Sozer, Cikananaga Wild Animal Rescue

North American Contact: Jeff Holland, Los Angeles Zoo

[testjavan warty pig project](#)

Comments

A conservation initiative is currently underway to conserve the few remaining populations of this species on Java. Considered highly endangered it is known to survive in a few fragmented populations across the island. A captive breeding program has been established at Cikananaga Wild Animal Rescue Center in West Java through the support of the Los Angeles Zoo Zoological Society for the Conservation of Species and Populations (ZGAP) and Research Center for Biology-LIPI in Bogor Indonesia. Additional support is needed to make this program successful. If your institution is interested in supporting the efforts to conserve this highly endangered species please contact Jeff Holland Project Coordinator at the Los Angeles Zoo – jeff.holland@lazo.org.

TAG Subgroup: **Eurasian Suids**

Golden babirusa
Babyrusa babyrussa babyrussa

Wild Conservation Status

Geographic Range **Sula and Buru Islands**

IUCN **Vulnerable**

CITES **Appendix I**

USFWS **Endangered**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Least known of the three subspecies of babirusa. Field status surveys of this subspecies population are necessary and the need for a captive management program needs to be assessed.

Togian Island's babirusa
Babyrousa babyrussa togeanensis

Wild Conservation StatusGeographic Range **Togian Islands**IUCN **Vulnerable**CITES **Appendix I**USFWS **Endangered****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Like Babyrousa babyrussa babyrussa very little is known about this subspecies. Field status surveys are necessary and the need for a captive management program needs to be assessed.

Hippo*Hippopotamus amphibius capensis***Wild Conservation Status**Geographic Range **Zambia and South Africa**IUCN **Vulnerable**CITES **Appendix II****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The five subspecies of hippos are virtually indistinguishable in the field and for the most part the hippo populations are treated on a geographical rather than a taxonomic basis. Future reviews of the species taxonomy may reveal regional genetic characteristics that merit sub-specific designation (Oliver, 1993). Conservation of all hippo populations in Africa is of concern due to the continent wide decline of these populations.

Hippo*Hippopotamus amphibius constrictis***Wild Conservation Status**Geographic Range **Angola and Namibia**IUCN **Vulnerable**CITES **Appendix II****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The five subspecies of hippos are virtually indistinguishable in the field and for the most part the hippo populations are treated on a geographical rather than a taxonomic basis. Future reviews of the species taxonomy may reveal regional genetic characteristics that merit sub-specific designation (Oliver, 1993). Conservation of all hippo populations in Africa is of concern due to the continent wide decline of these populations.

Hippopotamus

Hippopotamus amphibius tschadensis

Wild Conservation Status

Geographic Range **Chad and Nigeria**

IUCN **Vulnerable**

CITES **Appendix II**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The five subspecies of hippos are virtually indistinguishable in the field and for the most part the hippo populations are treated on a geographical rather than a taxonomic basis. Future reviews of the species taxonomy may reveal regional genetic characteristics that merit sub-specific designation (Oliver, 1993). Conservation of all hippo populations in Africa is of concern due to the continent wide decline of these populations.

Northern warthog
Phacochoerus africanus africanus

Wild Conservation Status

Geographic Range **Northern Savanna and Sahel Region of West/North Africa**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This subspecies is not considered threatened or endangered. However data collection on distribution and population status is necessary from south Central African Republic and The Democratic Republic of Congo. In addition comparative studies of the ecology and distribution of P.a.massaicus are necessary in West Africa.

Warthog*Phacochoerus africanus massaicus***Wild Conservation Status**Geographic Range **Eastern and Central Africa**IUCN **low risk/lc (out of date)**CITES **Appendix II****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This subspecies is not considered threatened or endangered. However data collection on distribution and population status is necessary from south Central African Republic and The Democratic Republic of Congo. In addition comparative studies of the ecology and distribution of P.a.massaicus are necessary in West Africa.

Bushpig*Potamochoerus larvatus hassama***Wild Conservation Status**Geographic Range **Eritrea, Northern Ethiopia and Southwestern Sudan**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The species remains widely distributed and should not be regarded as threatened at the present time. Very few field studies have been conducted and many basic aspects of their systematics, biology and management requirements are poorly known and merit further investigation (Oliver, 1993).

East Malagasy bushpig

Potamochoerus larvatus hova

Wild Conservation Status

Geographic Range **Eastern Madagascar**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This subspecies was almost certainly introduced to Madagascar and the Comoro Islands. The origins and distinctiveness of the subspecies is problematic. The eastern "race" P.l.hova closely resembles the P.l. kiropotamus but is smaller in size than the mainland form and the larger P.l. larvatus from western Madagascar and Mayotte. The species remains widely distributed and should not be regarded as threatened at the present time. Very few field studies have been conducted and many basic aspects of their systematics, biology and management requirements are poorly known and merit further investigation (Oliver, 1993).

Malagasy bushpig

Potamochoerus larvatus larvatus

Wild Conservation Status

Geographic Range **Comoro Islands and Western Madagascar**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**



Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This subspecies was almost certainly introduced to Madagascar and the Comoro Islands. The origins and distinctiveness of the subspecies is problematic. The eastern "race" P.l.hova closely resembles the P.l. kiropotamus but is smaller in size than the mainland form and the larger P.l. larvatus from western Madagascar and Mayotte. The species remains widely distributed and should not be regarded as threatened at the present time. Very few field studies have been conducted and many basic aspects of their systematics, biology and management requirements are poorly known and merit further investigation (Oliver, 1993).

Bearded pig
Sus barbatus ahoenobarbus

Wild Conservation Status

Geographic Range **Philippines (Balbac, Palawan and Calamian islands)**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This subspecies is the smallest of the three, it is endemic to the Philippines and found only on the islands of Calamian, Balbac and Palawan. Like Sus barbatus oi it is also far less numerous than the nominate species. Field status surveys are required to determine the distribution and status of this subspecies in order to initiate effective conservation measures. The development of a proper captive breeding program should be considered.

Bearded pig
*Sus barbatus oi***Wild Conservation Status**

Geographic Range

IUCN **Low risk/not threatened**
CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

Asia 6

AZA TAG Program RecommendationsRecommended Program: **Not Recommended**
Program Role:
Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)
Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This subspecies found on the island of Sumatra and in peninsular Malaysia is far less numerous than the prominate species. Field status surveys are required to determine the distribution and status of this subspecies in order to initiate effective conservation measures. The development of a proper captive breeding program should be considered.

Negros Island warty pig
*Sus cebifrons negrinus***Wild Conservation Status**Geographic Range **Philippines (Negros Island)**IUCN **Not Listed**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

Europe 24

AZA TAG Program RecommendationsRecommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Sulawesi warty pig *Sus celebensis*

Wild Conservation Status

Geographic Range **Sulawesi, Togian Islands and other outlying islands**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**



Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

This species was common in north, central and eastern Sulawesi and extinct in south Sulawesi as of 1993. The species has been widely introduced to other islands within Indonesia (Oliver, 1993). It is apparent that this species has been domesticated and transported to these areas as a domestic or feral form (Oliver, 1993). Although the species is not considered threatened over much of its range wide scale deforestation for timber and conversion of land for agricultural purposes along with human population expansion have resulted in a significant contraction of this species former range. Field status surveys are needed in selected areas within its original known range as well as in selected areas where the species is known or believed to have been introduced. Studies on this species behavior and biology are necessary.

Eurasian wild boar
*Sus scrofa***Wild Conservation Status**

Geographic Range

IUCN **low risk/lc (out of date)**
CITES **Not Listed****Current North America population** **0.3.0** In **2** Institutions (2005 Space Survey)
28.38.1 In **34** Institutions (ISIS *S. scrofa* only)**Current AZA Program**Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**
Program Role:
Anticipated 3-5 Year Population: **0.2.5** In **3** Institutions (2005 Space Survey)
Three Year Target population: **0****Current Field Conservation Programs**Field Conservation Program:
Field Program Coordinator:
North American Contact:**Comments**

Eurasian wild pig
*Sus scrofa affinis***Wild Conservation Status**Geographic Range **Southern India and Sri Lanka**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

Eurasian wild boar
*Sus scrofa algira***Wild Conservation Status**Geographic Range **North Africa**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

Eurasian wild pig
*Sus scrofa attila***Wild Conservation Status**Geographic Range **Former Soviet Central Asia**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

European wild boar
*Sus scrofa coreanus***Wild Conservation Status**Geographic Range **Korea**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

Europe 1

AZA TAG Program RecommendationsRecommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Eurasian wild pig
*Sus scrofa cristatus***Wild Conservation Status**Geographic Range **Northern India, Burma and Western Thailand**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

*Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of *Sus scrofa*.*

Eurasian wild pig
*Sus scrofa davidi***Wild Conservation Status**Geographic Range **Iran**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

Eurasian wild boar
*Sus scrofa leucomystax***Wild Conservation Status**Geographic Range **Japan**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

Asia 5

AZA TAG Program RecommendationsRecommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

*Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of *Sus scrofa*.*

Eurasian wild boar
*Sus scrofa lybicus***Wild Conservation Status**Geographic Range **Middle East**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

Eurasian wild boar
*Sus scrofa majori***Wild Conservation Status**Geographic Range **Italy**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

Europe 1

AZA TAG Program RecommendationsRecommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Eurasian wild boar
*Sus scrofa meridionalis***Wild Conservation Status**Geographic Range **Europe**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

Eurasian wild pig
*Sus scrofa moupinensis***Wild Conservation Status**Geographic Range **Southeast China and Vietnam**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

Eurasian wild pig
*Sus scrofa nigripes***Wild Conservation Status**Geographic Range **Former Soviet Central Asia**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

*Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of *Sus scrofa*.*

Eurasian wild pig
*Sus scrofa sibiricus***Wild Conservation Status**Geographic Range **Mongolia**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

Eurasian wild pig
*Sus scrofa taiwanus***Wild Conservation Status**Geographic Range **Taiwan**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

Eurasian wild pig
*Sus scrofa ussuricus***Wild Conservation Status**Geographic Range **Former Soviet Far East**IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

*Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of *Sus scrofa*.*

Indonesian/ Banded wild pig
*Sus scrofa vittatus***Wild Conservation Status**

Geographic Range **Malay Peninsula, Sumatra, Java, Bali and offshore islands**

IUCN **low risk/lc (out of date)**

CITES **Not Listed**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Considered widespread and locally abundant to potentially at risk. At the present time there are no known conservation initiatives for any of the various subspecies of Sus scrofa.

White-lipped peccary
*Tayassu***Wild Conservation Status**

Geographic Range

IUCN **low risk/lc (out of date)**CITES **Not Listed****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

White-lipped peccary

Tayassu pecari

Wild Conservation Status

Geographic Range

IUCN **low risk/lc (out of date)**
CITES **Appendix II**



Photo Credit: Brent Huffman

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

Europe 87
S. America 23

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**
Program Role:
Anticipated 3-5 Year Population: **1.4.4** In **3** Institutions (2005 Space Survey)
Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:
Field Program Coordinator:
North American Contact:

Comments

White-lipped peccary

Tayassu pecari albirostris

Wild Conservation Status

Geographic Range **Brazil, Peru (east), Bolivia, Paraguay, Argentina (north)**

IUCN **low risk/lc (out of date)**

CITES **Appendix II**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The white-lipped peccary is not considered seriously threatened. However data has suggested that most of the remaining populations of T.p.rigens and T.p.spiradens of southern Mexico and Central America are threatened to varying degrees while the population of T.p.rigens in El Salvador is already extinct. There is a lack of data on the current distribution and status of T.p.equatorius. Any conservation initiatives should be focused on these three subspecies. A small population of white-lipped peccaries is currently being maintained in a few European Zoos. At the present time the TAG is not recommending this species for inclusion in any North American Zoological Institutions. Any institution interested in working with a peccary species is encouraged to consider the Chacoan peccary.

White-lipped peccary

Tayassu pecari equatorius

Wild Conservation Status

Geographic Range **Southwest Colombia and Northwest Ecuador**

IUCN **low risk/lc (out of date)**

CITES **Appendix II**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The white-lipped peccary is not considered seriously threatened. However data has suggested that most of the remaining populations of T.p.rigens and T.p.spiradens of southern Mexico and Central America are threatened to varying degrees while the population of T.p.rigens in El Salvador is already extinct. There is a lack of data on the current distribution and status of T.p.equatorius. Any conservation initiatives should be focused on these three subspecies. A small population of white-lipped peccaries is currently being maintained in a few European Zoos. At the present time the TAG is not recommending this species for inclusion in any North American Zoological Institutions. Any institution interested in working with a peccary species is encouraged to consider the Chacoan peccary.

White-lipped peccary

Tayassu pecari pecari

Wild Conservation Status

Geographic Range **Eastern Colombia, Venezuela, Guiana, Surinam, Brazil**

IUCN **low risk/lc (out of date)**

CITES **Appendix II**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The white-lipped peccary is not considered seriously threatened. However data has suggested that most of the remaining populations of T.p.rigens and T.p.spiradens of southern Mexico and Central America are threatened to varying degrees while the population of T.p.rigens in El Salvador is already extinct. There is a lack of data on the current distribution and status of T.p.equatorius. Any conservation initiatives should be focused on these three subspecies. A small population of white-lipped peccaries is currently being maintained in a few European Zoos. At the present time the TAG is not recommending this species for inclusion in any North American Zoological Institutions. Any institution interested in working with a peccary species is encouraged to consider the Chacoan peccary.

White-lipped peccary

Tayassu pecari ringens

Wild Conservation Status

Geographic Range **Southern Mexico, Guatemala, Belize, Honduras, El Salva-**

IUCN **low risk/lc (out of date)**

CITES **Appendix II**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The white-lipped peccary is not considered seriously threatened. However data has suggested that most of the remaining populations of T.p.rigens and T.p.spiradens of southern Mexico and Central America are threatened to varying degrees while the population of T.p.rigens in El Salvador is already extinct. There is a lack of data on the current distribution and status of T.p.equatorius. Any conservation initiatives should be focused on these three subspecies. A small population of white-lipped peccaries is currently being maintained in a few European Zoos. At the present time the TAG is not recommending this species for inclusion in any North American Zoological Institutions. Any institution interested in working with a peccary species is encouraged to consider the Chacoan peccary.

White-lipped peccary

Tayassu pecari spiradens

Wild Conservation Status

Geographic Range **Nicaragua, Costa Rica, Panama and northern Colombia**

IUCN **low risk/lc (out of date)**

CITES **Appendix II**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations

AZA TAG Program Recommendations

Recommended Program: **Not Recommended**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

The white-lipped peccary is not considered seriously threatened. However data has suggested that most of the remaining populations of T.p.rigens and T.p.spiradens of southern Mexico and Central America are threatened to varying degrees while the population of T.p.rigens in El Salvador is already extinct. There is a lack of data on the current distribution and status of T.p.equatorius. Any conservation initiatives should be focused on these three subspecies. A small population of white-lipped peccaries is currently being maintained in a few European Zoos. At the present time the TAG is not recommending this species for inclusion in any North American Zoological Institutions. Any institution interested in working with a peccary species is encouraged to consider the Chacoan peccary.

TAG Subgroup: **Neotropical Tayassuids**

Pygmy hippopotamus
Hexaprotodon liberiensis heslopi

Wild Conservation Status

Geographic Range **Nigeria**

IUCN **Not Listed**

CITES **Not Listed**

Current North America population **0.0.0** In **0** Institutions (2005 Space Survey)

Current AZA Program

Current Population Management Program:
Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**

Recommended Program: **Extinct**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)

Three Year Target population: **0**

Current Field Conservation Programs

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

Known only from the Niger Delta east to the vicinity of the Cross River in Nigeria (Corbet, 1969). Most likely extinct but Oates (in litt.) reports that residents in the Niger Delta still know of the species, so it may survive (Oliver, 1993). Subspecies determination is necessary.

Cape Warthog*Phacochoerus aethiopicus aethiopicus***Wild Conservation Status**Geographic Range **Extinct/South Africa**IUCN **Extinct**CITES **Extinct****Current North America population** **0.0.0** In **0** Institutions (2005 Space Survey)**Current AZA Program**

Current Population Management Program:

Current Population Manager:

Most Recent Publish Date:

Other Regional Populations**AZA TAG Program Recommendations**Recommended Program: **Extinct**

Program Role:

Anticipated 3-5 Year Population: **0.0.0** In **0** Institutions (2005 Space Survey)Three Year Target population: **0****Current Field Conservation Programs**

Field Conservation Program:

Field Program Coordinator:

North American Contact:

Comments

AZA WPPH TAG

Position Statement on Specimen Disposition

The Wild Pig, Peccary and Hippo Taxon Advisory Group will support the relocation of available breeding specimens and/or specimens not required for the management of core populations guided by this advisory group, if the following guidelines are considered.

Potential, acceptable recipients are identified and selected in accordance with AZA Accession/De-accession Policy as adopted in 2000 by Association of Zoos and Aquariums. All specimen dispositions will be carried out in accordance with the AZA Code of Professional Ethics.

Follow local, state, provincial and federal guidelines, restrictions and regulations, as applicable.

The best interests of the animal specimens and/or species are considered.

Track and monitor to the best of the Advisory Group's ability in applicable studbooks and/or stock registers specimens removed from core populations. Species managers may define specimens not required for core population management using the following criteria.

The specimen is a species or sub-specific hybrid to be managed outside of the core population.

The specimen is genetically redundant or carries undesirable or life-threatening genetic traits.

There is a shortage of holding, exhibit, or management space appropriate to the needs of the animal at the institutional or national level in accord with SSP, PMP, or TAG guidelines.

The specimen is sterile, due to natural cause or surgical alteration, and cannot fulfill any function of value to its core population.

The specimen(s) exhibit(s) stereotypic behavior that consistently impede their ability to successfully reproduce or fulfill any function of value to the core population or are consistently incompatible with other animals or exhibit inappropriate and uncorrectable behaviors which threaten their own welfare or the welfare of other animals.

Euthanasia may be a consideration for animals that fall under the criteria listed above. Managerial euthanasia of healthy animals should be a last option after all other alternatives for placement have been exhausted. It is not the recommendation of the Wild Pigs and Peccaries TAG at this time to euthanize healthy animals managed under an SSP or PMP, however, live animals may be disposed of in a humane and merciful fashion if other modes of removal are not feasible. Euthanasia may be used for aged, deformed, or medically compromised animals or those which are suitable for neither breeding nor exhibition. Euthanasia will be used only as a last resort and will be done in accordance with the Report of the American Veterinary Medical Association (AVMA. Panel on Euthanasia (JAVMA, Volume 202, No. 2, pp. 229-249, January 15, 1993)).

WPPH TAG 2007 Conservation Program Survey Results

1) List any and all projects that are specific for the conservation of wild pigs peccaries or hippos that your institution is working on or supporting.

<u>Institution</u>	<u>Respondent</u>	
Adventure Aquarium	Ann-Marie Bisagno	This month we are focusing on hippo conservation. Rebecca Lewiston from the International Hippo Foundation is doing a talk here and all the proceeds will go towards that organization. We also have donation boxes in our gift shop & we sell hippo cookies all year round.
Audubon Institute	Joe Forys	We have no pig, peccary, or hippo specific conservation projects that we are working on or are involved in. (I am working on it and would love to have the feedback from the meetings to give a shopping list if you will for projects we can work with).
AZA Species Coordinator Chacoan Peccary	Dennis Meritt Jr. PhD	As AZA - SSP Coordinator for Chacoan peccary I raise annual funds for and manage a captive propagation center in the Chaco of Paraguay. The project is known as "Proyecto Tagua" and it has been in operation at Fortin Toledo Boqueron Chaco Paraguay since 1980. Here the three extant species of peccary are exhibited and managed. Chacoan peccary are managed for release to the wild and as a genetic insurance policy against continuing threats to the species. The site also serves as an information center for Chacoan fauna. There are several projects underway in addition to the Tagua work. These include an annual census of resident and migratory birds using capture-band-release methods including the use of traps and mist nets. This is a never before attempted population assessment of resident birds northern Neotropical migrants and austral migrants that pass through the site or otherwise use it annually. The project Director. Juan Campos DVM is studying the natural history and behavior of the capybara at and near the Toledo site in his pursuit of a PhD. In the Chaco the capybara is at the extreme limits of its range and somehow has adapted to life in a semi-arid seasonally wet and seasonally dry habitat. Juan is studying their movements their genetics and their habitat requirements. He is using various techniques including trapping telemetry with implants and fecal collection to gain various insights. We are near completion of a long-range plan to purchase the Finca at Toledo its' various outbuildings and the land surrounding it. Our hope is to continue to develop the site as a center for ecological studies of Chacoan flora and fauna. Limited facilities are currently available for interested zoo biologists and others with an interest in the flora and fauna to assist with various studies using the Finca as a base of operations. We currently manage some 200 hectares of protected habitat adjacent to the site and have excluded domestic livestock through the judicious use of fencing.
Beardsley Zoo	Rob Tomas	We are slated bring in a group of Chacoan peccary in the late spring. Hopefully establish a breeding group.
Brookfield Zoo	Ann Petric	In 2006 via the PP&H specialist group, we supported a project for the pygmy hogs.
Calgary Zoo	Mona Keith	The Calgary Zoo supports the Weichau Hippo Sanctuary in Ghana, West Africa. We send thousands of dollars their way. We've been involved with fresh water wells and solar panels for many of the nearby villages. Also conservation education for the villagers. We have sent delegations there and have had several of the Chiefs here to open our new Hippo exhibit in 2003 etc.

1) List any and all projects that are specific for the conservation of wild pigs peccaries or hippos that your institution is working on or supporting.

<u>Institution</u>	<u>Respondent</u>	
Cheyenne Mountain Zoo	Roxanna Breitigan	We are not working on any conservation project for these species.
Cosley Zoo	Angie Dosch	At this time, Cosley Zoo is not involved in any project specific for the conservation of wild pigs, peccaries or hippos.
Disney's Animal Kingdom	Steve Castillo	Disney's Animal Kingdom is not involved in any projects at this time.
Disney's Animal Kingdom	Matt Hohne	Support for Virunga National Park Rangers, DRC The proposed action to be taken is to provide funding for Salary bonuses for RangersPatrol Rations, Uniforms, Boots and Patrol Tents for the elite ranger force of Virunga National Park.
Fresno Chaffee Zoo	Andrew T. Snider	We've just been approved as a new partner in the Chacoan peccary SSP program and will be receiving animals in the near future. We are also involved in the warthog PMP.
Houston Zoo	Peter Riger	Houston Zoo is currently not supporting any field efforts for these species
L.A. Zoo	Jeff Holland	Visayan warty pig Conservation (\$4,000.00 annually) Javan warty pig recovery project (\$5,000.00 allocated if we can get this off the ground)
Lincoln Park Zoo	Megan Wilson	LPZ is not participating in any conservation projects with these animals in the wild.
Louisiana Purchase Gardens & Zoo	Lola D. Curtis	We have no projects at this time. Currently we have a single female Nile hippo. We do not have room for a second hippo in this nighthouse. We also have two minor breed domestic pigs--Ossabaw Island pigs.
Miami Metrozoo	Steve Conners	The last contribution we made was to Dennis Merrit's Chacoan peccary project 3 years ago.
Minnesota Zoo	Tony Fisher	We have just built a new Visayan Warty pig exhibit and would like to support a field conservation project in connection with this. Please direct me to a worthy project.
OKC Zoo	Laura Bottoro	Only SSPs and PMPs.
Omaha Zoo	Dan Cassidy	We are currently not doing and pig or hippo conservation projects. I am personally not aware of any.

1) List any and all projects that are specific for the conservation of wild pigs peccaries or hippos that your institution is working on or supporting.

<u>Institution</u>	<u>Respondent</u>	
Palm Beach Zoo	Gwen Lovett	Construction of a Biological Station in Mbaracayu Forest Paraguay The biological station for the Atlantic Forest of the interior in the Mbaracayu Forest Nature Reserve was constructed in order to be the home base for biological research studies including the monitoring of the status of threatened species that live within the station's limits. Projects include a study on the bush dog. In an effort to expand construction of this station requests for assistance with funding arose. In response to this request the Palm Beach Zoo donated \$5000 in 2001.
Philadelphia Zoo	Chris Bartos	Working with Adventure Aquarium in Camden NJ to host a fundraising lecture at the end of March about hippo conservation by Dr. Rebecca Lewison from the International Hippo Foundation. Will be contributing Zoo funds to the Foundation.
Reid Park Zoo	Scott Barton	Reid Park Zoo currently doesn't have any wild pigs, peccaries or hippos and aren't involved in any conservation programs specific to those taxa.
San Diego Zoo	Curby Simerson	Planned duration of support: 10 years Program Description: Support to FFI for the Philippines Biodiversity Conservation Programs Reintroduction of Threatened Endemic Species in the West Visayas. (deer, pigs, cloud rats, horn bills, and others). Funds for support of breeding centers, surveys, development of new protected areas and other conservation activities. \$10,000 annually.
St. Louis Zoo	Martha Fischer	Ex situ conservation programs: Babirusa SSP VW Pig SSP Chacoan Peccary SSP RR Hog PMP Warthog PMP Nile Hippo PMP "Ex situ research: Babirusa and RR Hog reproductive cycle tracking with fecal hormones In situ conservation: nothing specific to pigs peccaries or hippos although Grevy's Zebra conservation activities through Grevy's Zebra Trust in Kenya and Ethiopia and community conservation activities through Northern Rangelands Trust in Kenya both benefit the common and desert warthog.
Toronto Zoo	Maria Franke	PYGMY HIPPO & MANATEE CONSERVATION PROJECT IN THE IVORY COAST Pygmy hippos and a variety of other IUCN Red List species occur within two protected areas and the coastal wetland that lies between them in Ivory Coast "West Africa. These two protected areas are the Azagny National Park and the Port Gauthier Classified Forest (ANP and PGCF). There is already an ongoing WCS West African manatee conservation project at this site "and we aim to expand this to the survey and the protection of Pygmy hippos. Total contribution for 2006-2007 \$4000.00

WPPH TAG Conservation Programs.wdb - Non-PPH Program

2) List any and all conservation projects that are not specific for wild pigs peccaries or hippos but have an impact on one or more of the WPPH species that your institution is working on or supporting.

<u>Institution</u>	<u>Respondent</u>	
Audubon Institute	Joe Forys	We have worked with habitat preservation projects with Hornbills in Sulawesi and other areas of Indonesia (babirusa), Sunbears in Borneo (Bearded pigs) and a lot of work with ZCOG in Latin America but I am not sure if it benefited Peccaries or not.
Beardsley Zoo	Rob Tomas	None at this time.
Brookfield Zoo	Ann Petric	Since 1994, we have supported International Rhino Foundation and the Okapi Conservation Project annually. Though these projects focus on large mammals they support habitat which is occupied with many other species of wildlife including pigs and hippos. Additionally, these projects work with local communities to help them live more sustainably and achieve a more positive relationship with nature.
Cheyenne Mountain Zoo	Tracy Leeds	AFRICAN ELEPHANT CONSERVATION THROUGH IEF
Cheyenne Mountain Zoo	Roxanna Breitigan	CMZ gives funds to the Bushmeat Crisis Task Force.
Cosley Zoo	Angie Dosch	None of our projects impact the WPPH species.
De Granby Zoo	Julie Séguin	Frankfurt Zoological Society/Africa Conservation Fund: Project to protect the Virunga National Park in Congo (the park itself and wildlife such as hippos and gorillas) by gathering international support and provide desperately needed patrol equipment and salary directly to the field. Reports from the team of rangers can be tracked on the weblog www.wildlifedirect.org/congo-rangers
Dickerson Park	Kesha Schreiber	Possibly- RainForest protection in Guatemala.
Disney's Animal Kingdom	Steve Castillo	Disney's Animal Kingdom is not involves in any at this time.
Emporia Zoo	Steve Trebilcock	WE CONTRIBUTE TO "CBSG = BABIRUSA

2) List any and all conservation projects that are not specific for wild pigs peccaries or hippos but have an impact on one or more of the WPPH species that your institution is working on or supporting.

<u>Institution</u>	<u>Respondent</u>	
Happy Hollow Park & Zoo	Valerie Riegel	Happy Hollow Park & Zoo has established a commitment to work with a group of Rangers called the Advance Force in the Democratic Republic of the Congo (DRC). The Advance Force are the frontline of protection for the last remaining populations of Mountain Gorillas in Virunga National Park and most recently, the last remaining populations of hippos in the Congo. The Rangers were meant to be deployed only in emergencies, yet in the Virunga that means all the time. Recently they were dispatched to deal with the hippo slaughter on Lake Edward, the Ugandan Militias in the Northern forests and the rebel uprising in the Miken gorilla sector, all at the same time! ☐
Houston Zoo	Peter Riger	a) The Houston Zoo supports the work of the IUCN/SSC Tapir Specialist Group and a number of researchers focusing their efforts on Lowland and Baird Tapirs in Latin America and specifically in Brazil. These species share habitat and ranges with Peccary species.
Louisville Zoo	Steve Wing	Dian Fossey Foundation Bushmeat Crisis Task Force
Palm Beach Zoo	Gwen Lovett	A Public/Private Partnership to Understand and Conserve Jaguar Habitat in the Yucatan Mexico. Jaguar SSPA newly developed camera-trapping technique will help researchers gain a better understanding of the numbers of jaguars and other animals in the Yucatan Mexico. Overall the project will work to build partnerships between public and private land-holders and to build sustainable land use practices. This in turn should help reverse the continuing trend of degradation of resources necessary for the survival of the jaguar and numerous other animal and plant species in the area. The Palm Beach Zoo has donated \$8570 to fund the camera-trapping aspect of this project run by the Jaguar SSP.
Philadelphia Zoo	Chris Bartos	The Zoo significantly supports the Kinabatangan Orangutan Conservation Project and Borneo Elephant Conservation Unit both of which protect land and wildlife in Borneo. Bornean bearded pigs are common in this area and are protected under the "umbrella" of these other projects.
Reid Park Zoo	Scott Barton	We support elephant work in Tarangire and Grevy's zebra program in northern Kenya, both of which effect warthogs too. Currently our only Asian program is for hornbills, and I don't think it affects any wild pig conservation.
Riverbanks Zoo	John Davis	Riverbanks Zoo's conservation support has been in Australia New Guinea and North America for the past couple of years.

2) List any and all conservation projects that are not specific for wild pigs peccaries or hippos but have an impact on one or more of the WPPH species that your institution is working on or supporting.

<u>Institution</u>	<u>Respondent</u>	
Rolling Hills Wildlife Adventure	Sandy Walker	Unknown. We support several large projects but I am unsure as to the impact on these species.
San Antonio Zoo	John Gramieri	We have made a three year pledge to the PAAZAB Patron Program. It supports African conservation organizations, but I cannot say for certain that it impacts any of the WPPH species.
San Diego Zoo	Curby Simerson	Planned duration of support: 10 years Program Description: Support to FFI for the Philippines Biodiversity Conservation Programs Reintroduction of Threatened Endemic Species in the West Visayas. (deer, pigs, cloud rats, horn bills, and others). Funds for support of breeding centers, surveys, development of new protected areas and other conservation activities. \$10,000 annually.
St. Louis Zoo	Martha Fischer	In situ conservation: nothing specific to pigs, peccaries or hippos, although Grevy's Zebra conservation activities through Grevy's Zebra Trust in Kenya and Ethiopia and community conservation activities through Northern Rangelands Trust in Kenya both benefit the common and desert warthog.
Sunset Zoo	Mark Ryan	The Paraguay Conservation Action Partnership (CAP Paraguay) is headquartered at Sunset Zoo and chaired by Sunset Zoo Director of Conservation and Research, Bob Klemm, PhD.
Toronto Zoo	Maria Franke	Conservation Projects that are not directly specific but species would be included: "MEBELI BAI STUDY Concentrating on gorillas but also doing a census on other animals that frequent the Bai including Red River Hogs. NOUABALE-NDOKI NATIONAL PARK Located in the north of the Republic of Congo this park is home to numerous species including pigs. "BUSHMEAT CRISIS TASK FORCE
WCS	Penny Kalk	CAMEROON (bush pigs red river hogs) <ul style="list-style-type: none"> • Biological monitoring of the Banyang-Mbo Forest Reserve • Conservation and community participation in Banyang-Mbo Wildlife Sanctuary • Survey and priority setting in the Cameroon/Nigeria highlands • Management of Mbam-Djerem National Park • Large mammal surveys and bushmeat studies around Mbam-Djerem National Park • CAMRAIL: Law enforcement of bushmeat transport on the railway

2) List any and all conservation projects that are not specific for wild pigs peccaries or hippos but have an impact on one or more of the WPPH species that your institution is working on or supporting.

<u>Institution</u>	<u>Respondent</u>	
WCS	Penny Kalk	<p>CONGO REPUBLIC (red river hogs)</p> <ul style="list-style-type: none"> • Nouabalé-Ndoki Project Nouabalé-Ndoki National Park (NNNP) • Large mammal distribution and relative abundance between NNNP and the village of Bomassa-Bon Coin • Nouabalé-Ndoki peripheral zone management • Impact of logging on mammal distribution seed dispersal and forest habitat • Biological surveys and monitoring in Nouabalé-Ndoki peripheral zone and greater landscape • Bushmeat offtake monitoring in logging concessions in the buffer zone of NNNP • Bushmeat offtake and human demographic monitoring in Bomassa-Bon Coin NNNP • Conservation of Konkouati-Douli National Park • Conservation and biological surveys of Lac Télé Community Reserve • Schools education program and environmental curriculum development • Odzala Kokoua Project • Bateke Plateau Project • Congo Wildlife Service Development Project • Congo portion of Lope/Chaillou Project
WCS	Penny Kalk	<p>DEMOCRATIC REPUBLIC OF CONGO (bush pigs)</p> <ul style="list-style-type: none"> • Elephant and large mammal monitoring in the Okapi Faunal Reserve • Okapi Faunal Reserve and community management zoning project • Ituri Forest Research and Training Center (CEFRECOF) • Botanical exploration of the Okapi Faunal Reserve • Large mammal surveys and support to management in Kahuzi Biega National Park • Re-establishment of Kahuzi Biega National Park infrastructure (recovery of park headquarters) • Exploration of the lowland sector and habitat mapping of Kahuzi Biega
WCS	Penny Kalk	<p>Dry Forests and Savannas (Chacoan peccaries)</p> <p>WCS has worked with the Isoseño Guaraní indigenous organization CABI since 1991-a partnership that resulted in the creation of the Kaa-lyá del Gran Chaco National Park in 1995. Kaa-lyá is the largest protected tropical dry forest in the world and the most biodiverse and well-preserved portion of the Gran Chaco ecoregion. WCS supports CABI in administering the vast protected area and in promoting biodiversity conservation and the sustainable use of natural resources within the neighboring Isoseño indigenous territory. WCS also supports research on maned wolves in Noel Kempff Mercado National Park wildlife-compatible ranching around the first private reserve in Bolivia at San Miguelito and the Chiquitano Forest Conservation Foundation. collecting sound field information in order to provide a clearer picture of management issues for local regional national and international stakeholders 3) translating field information into best management practices and 4) increasing awareness of biodiversity and conservation at the local level.</p>

2) List any and all conservation projects that are not specific for wild pigs peccaries or hippos but have an impact on one or more of the WPPH species that your institution is working on or supporting.

<u>Institution</u>	<u>Respondent</u>	
WCS	Penny Kalk	<p>Sulawesi Program (Babirusa)</p> <p>WCS Activities</p> <ul style="list-style-type: none"> ·Promoting law enforcement. Through its Sulawesi Wildlife Crime Unit WCS encourages law enforcement agencies to protect the protected wildlife species by legal prosecution with relevant data and information. WCS also maintains coordination and information exchange between stakeholders in law enforcement throughout Sulawesi. ·Reducing wildlife trade. WCS quantifies the consumption of wildlife species through monitoring wildlife trade in local markets. WCS also investigates the extent of wildlife hunting by patrolling the major roads that connect the hunting-fields and the markets. First hand information on hunting is collected through patrolling programs within the protected areas. · Raising public awareness on wildlife conservation. WCS designs and produces materials such as posters banners leaflets wildlife-shaped puppets and children 's wildlife comics runs conservation campaigns including school visits exhibitions puppet shows and library displays to raise public awareness on the importance of wildlife conservation. ·Conservation training. We seek to build capacity for conservation. We have trained school teachers forestry guards police officers prosecutors judges local NGOs mass media local people from villages near BNWNP and university students. Previous training topics have included wildlife identification conservation law policy and enforcement field conservation techniques and principles. · Park management through partnership. WCS has facilitated the establishment of Dewan Mitra a partnership approach to the management of BNWNP. Dewan Mitra provides a communication forum and data exchange between the stakeholders within the Bogani landscape ecosystems including BNWNP and surrounding areas
WCS	Penny Kalk	<p>WCS Madidi (Peru and Bolivia): Protecting Key Landscape Species (white-lipped peccary) Protecting a landscape as large and complex as Madidi is an extreme challenge. WCS focuses on protecting wide-ranging "landscape" species because if we can protect them we will succeed in addressing threats facing large swaths of critical habitats other wildlife and the local communities that are ultimately responsible for the magnificent landscape. WCS focuses on the following landscape species: jaguar spectacled bear white-lipped peccary Andean condor and vicuña. Each species plays a key ecological role in the landscape but also represents an economic opportunity and/or threat to local communities. Thus they are at the heart of our work.</p>
WCS	Penny Kalk	<p>Wildlife Crime Units (Protects Babirusa in Sulawesi)</p> <p>WCS Activities</p> <p>Wildlife Crime Units are a novel collaborative approach to wildlife law enforcement. The 'units' are formed from staff seconded from within BKSDA police and local environmental NGOs. This lies at the heart of the concept each participant brings their institutional mandate their strengths and respective authority and works together. The core team is backed further by media technical and legal experts and community alliances. Together the team:</p> <ul style="list-style-type: none"> · Forms a local collaboration of government and non-government agencies committed to tackling wildlife crime. · Investigates and monitors illegal hunting and wildlife sales · Strengthens law enforcement from arrest of suspects to evidence gathering and due legal process. · Provides legal and technical support and capacity building to outside partners. · Promotes public awareness of wildlife protection and laws by monitoring and publicizing legal proceedings and working with communities to carry out public awareness campaigns <p>Active Wildlife Crimes Units led by WCS are currently running in southern Sumatra and northern Sulawesi</p>

2) List any and all conservation projects that are not specific for wild pigs peccaries or hippos but have an impact on one or more of the WPPH species that your institution is working on or supporting.

<u>Institution</u>	<u>Respondent</u>	
Zoo Leon	Richard Sheffield	We are supporting financially and otherwise a conservation/education program led by Dr. Ivan Lira the new Director of Research at the Instituto de Historia Natural & Ecología in Tuxtla Gutierrez Chiapas . His principal area of field work has been with the Baird tapir as an umbrella species in the Zooque/Chimalapa jungle in western Chiapas near the borders of the states of Veracruz and Oaxaca . In this now unprotected region there are Tayassu albirotris & tajacu. We have had bimonthly reports of his field activities but so far nothing has been published. This project was suspended recently due to a change in Lira's place of employment but will shortly be reactivated. We also support the conservation projects of ZCOG.

WPPH TAG Conservation Programs.wdb - Inst. Support

3) What do you feel the TAG could do to increase institutional support for wild pig peccary or hippo conservation projects?

<u>Institution</u>	<u>Respondent</u>	
Adventure Aquarium	Ann-Marie Bisagno	Provide recommendations about specific groups to to donate money to.
Audubon Institute	Joe Forys	I think institutions should be required to participate. If, as I alluded to in #1, there was a list of good projects to choose from, it would be easier to go to the director and say I need X amount of \$\$ for this and Y amount for that. Participation could be on a sliding scale for facilities depending on size and budget. Obviously all zoos are not created equal. Opportunities for staff to participate in field work would be a nice addition as well.
AZA Species Coordinator Chacoan Peccary	Dennis Meritt Jr. PhD	Perhaps participants in management programs could be asked to provide funds to the limit their budgets and interests allow in support of TAG and SSP programs especially those like "Proyecto Tagua" that depend solely on donor support for annual operations. Through the generosity of the Sedgwick County Zoo Wichita Kansas SSP funds generated through donations are managed and distributed for operations of the project.
Brookfield Zoo	Ann Petric	Develop a relationship with the Specialist Group. Gain greater awareness of their concerns and needs. Make pig/hippo holders more aware of what's out there to support and how they can participate. Piggy-back with other projects that cover broader context.
Buffalo Zoo	Jerry Aquilina	Periodically publish on the list serve the projects that are in need of funding.
Cheyenne Mountain Zoo	Tracy Leeds	FIND A WAY TO GET PEOPLE TO CARE ABOUT THEM - WE ARE CURRENTLY WORKING ON A ZOO-WIDE PROJECT REGARDING THIS ISSUE - FOR ALL ANIMALS NOT JUST THE PIGGIES & HIPPOS. I'LL TRY TO REMEMBER TO LET YOU KNOW HOW IT COMES ALONG.
Cheyenne Mountain Zoo	Roxanna Breitigan	Give suggestions for what Zoos or keepers can do to help with issues relating to these animals. Concrete projects they can talk about or send money to.
Cosley Zoo	Angie Dosch	As a zoo that focuses on native Illinois wildlife and domestic farm animals, most of our conservation projects are for animals residing within the state of Illinois. There are a few exceptions if we can relate the conservation message to our animals in some way. We will be getting some American Guinea Hogs in the spring, and though not wild, would be our best possible link to conservation of wild pigs. However, I don't really have ideas on how the TAG can help. We are limited by our focus.□
De Granby Zoo	Julie Séguin	1. Make available to us a list of ex situ and in situ projects we can get involved in (eg. through e-newsletters or simply sending us relevant web links). 2. Sending us suggestions/examples of conservation projects currently ongoing at other institutions: this could facilitate partnerships or collaborative work between institutions on similar projects therefore giving these projects a greater positive impact.
Disney's Animal Kingdom	Steve Castillo	Disney has the Wildlife Conservation Program that oversees the different research projects that we support. I have not seen any proposals come through this avenue.
Disney's Animal Kingdom	Matt Hohne	1. Educate institutions of the need for conservation efforts"2. Highlight current plight of these species in Africa 3. Promote increased exhibition of these species (to tie into point #1)
Emporia Zoo	Steve Trebilcock	LET THE INSTITUTIONS KNOW MORE ABOUT CONSERVATION PROGRAMS THAT ARE LOOKING FOR HELP REGARDING THESE SPECIES - USE OTHER AZA LIST SERVES TO HELP ADVERTISE THESE PROGRAMS SO A WIDER GROUP OF INDIVIDUALS IN ANY INSTITUTION WILL BE AWARE OF THEM AND BE ABLE TO BRING THEM FORWARD AS EFFORTS THAT CAN BE ADDRESSED. KEEP IN MIND THAT PERSONNEL AT ALL LEVELS IN ANY INSTITUTION MAY CHANGE FROM TIME TO TIME AND JUST BECAUSE ONE GENERATION OF STAFF WAS AWARE OF PROGRAMS, DOESN'T MEAN THE NEXT WILL BE. REMINDERS SENT OUT ON A PERIODIC BASIS ARE NEVER A BAD IDEA.

3) What do you feel the TAG could do to increase institutional support for wild pig peccary or hippo conservation projects?

<u>Institution</u>	<u>Respondent</u>	
Fresno Chaffee Zoo	Andrew T. Snider	The pamphlet or brochure that Jim at the LA Zoo put out (or at least he supplied me with one) regarding support for Chacoan peccaries, Javan warty pigs, etc, was quite good and perhaps needs to be more widely read. Perhaps doing a presentation at the AZA National Conference on the use of pigs and peccaries in multi-species exhibits might get more institutions involved.
Happy Hollow Park & Zoo	Valerie Riegel	This survey is a good start. A published compilation of what is being done can spark interest for additional help or seed ideas for other projects, also include any projects out there looking for additional funding or support.
Hogle Zoo	Kim Davidson	Identify in-situ projects or send us lists of projects that are supported by the TAG "so we can better assess our conservation dollars and activities.
Honolulu Zoo	Richard Ball	I need to take the time to become more familiar with the TAG goals and seek support for it's programs.
Houston Zoo	Peter Riger	a) Species awareness and the issues in the regions they are distributed. Many zoos may not be aware of the conservation priorities for Visayan Warty Pigs, Babirusa, etc. The issues Hippopotamus face almost call for a very focused group for these species, something along the lines of an International Rhino Foundation had been suggested at one point recently. b) They could focus more on rodents which clearly support the environments of wild pig, peccary or hippo live withi
Jackson Zoological Park	David Wetzel	Our conservation budget is pretty tight right now and we just can't take on anything else. We do send some funds to an elephant project but I'm not sure if they are working in the range of pygmy hippos or not.
Kansas City Zoo	Liz Harmon	I think we might consider hippo conservation if there was a specific proposal that the TAG asked us to support.
L.A. Zoo	Jeff Holland	Promote the various projects that the TAG knows is out their via e-mail, TAG meeting updates, fliers to all pig holding institutions. Designate a coordinator for each proeject and that person is responsible for soliciting funds and coordinating the project or the funding of the project with the other institutions.
Lehigh Valley Zoo	Anthony J. LaPorte	I am not familiar with this TAG.
Lincoln Park Zoo	Megan Wilson	I think this TAG has done a great job in getting the word out particularly regarding wild pigs/peccaries (the "booklet" with photos that you sent out a while back was fantastic). I continue to pass along the information you provide "but for some reason these guys don't get the attention that they deserve.
Little Rock Zoo	W.K. Baker	I would recommend that the TAG send out a list of prioritized projects with a short descriptor and associated costs on an annual basis at the start of the calendar year.
Living Desert Zoo and Gardens State Park	Holly Payne	somehow increase institutional awareness of what conservation projects are being conducted, how individual institutions could become involved and what resources would be needed for an institution to become involved
Louisiana Purchase Gardens & Zoo	Lola D. Curtis	Perhaps you could let us know what is already being done and who is doing it. You might also let us know what NEEDS to be done. That would give us ideas and a potential selling point (for our governing bodies).
Louisville Zoo	Steve Wing	Maybe pick one or two projects (or a shopping list like the International Elephant Foundation) for zoos to pick from?
OKC Zoo	Laura Bottoro	Perhaps increase our exposure to some of the conservation issues that are affecting target species.
Oregon Zoo	Tony Vecchio	I think we need to have a much higher profile at the national and regional AZA conferences the AAZK AZH AZV and Directors meetings. We should be promoting pigs and peccaries as important conservation priorities and great exhibits. We should be working closely with the IUCN Pigs and Peccaries Specialist Group. It would be nice if they could supply us with a list of conservation programs in need of support (similar to what the IEF does with elephant conservation projects). We should also be working closely with them to help promote their work and to jointly develop the important conservation education messages that need to get to the public.
Palm Beach Zoo	Gwen Lovett	Have a list available of all approved projects that the TAG has reviewed and supports.

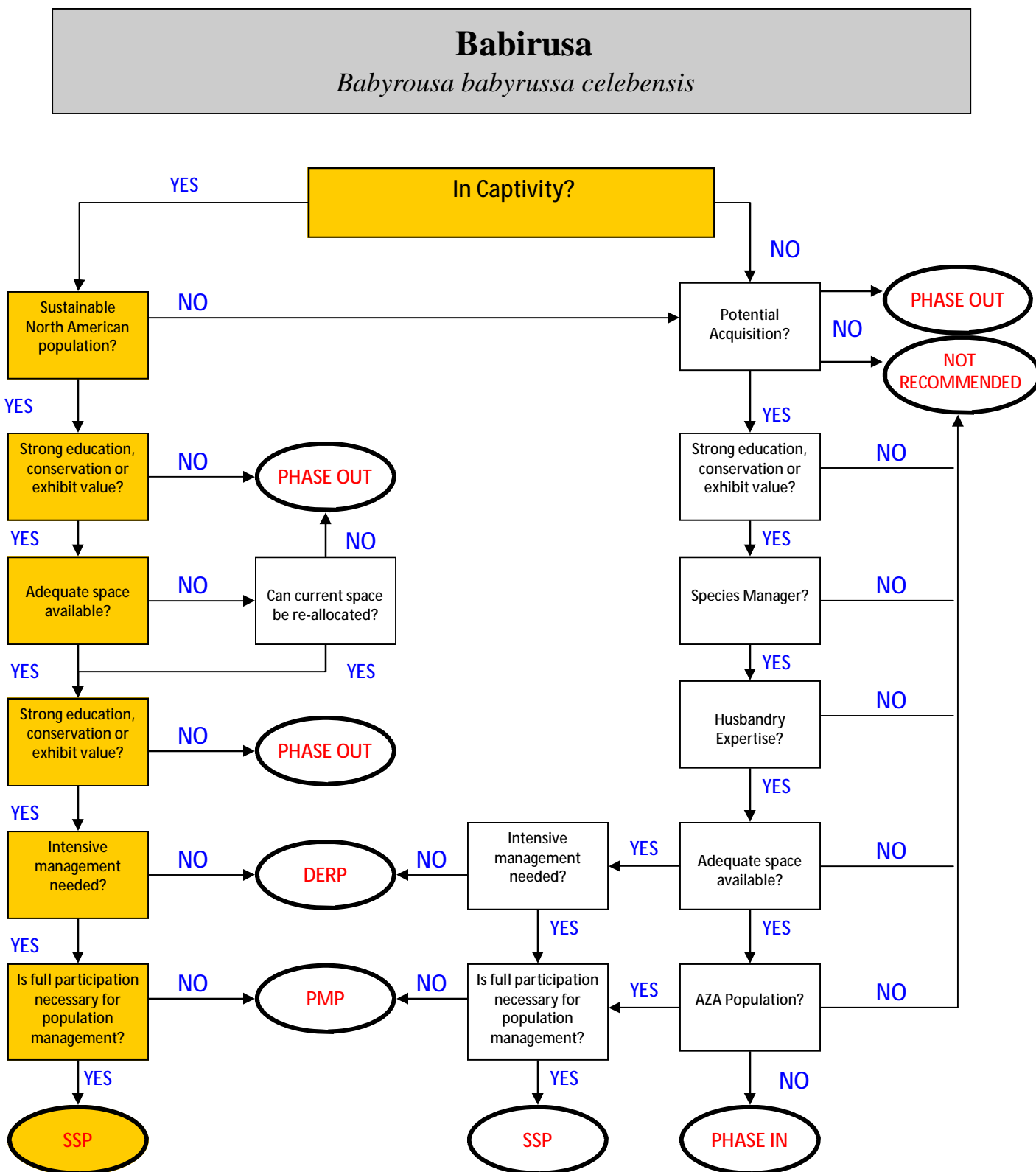
3) What do you feel the TAG could do to increase institutional support for wild pig peccary or hippo conservation projects?

<u>Institution</u>	<u>Respondent</u>	
Philadelphia Zoo	Chris Bartos	Provide a "menu" of projects that need support complete with a short description compelling photos contact information and amount of support needed/what that support will purchase. Invite some of the PIs from these projects to attend the national AZA meeting and present their projects as part of pig/peccary/hippo conservation session.
Reid Park Zoo	Scott Barton	<p>We have a new funding source for our in-situ conservation support, and right now we're primarily focused on species in our collection, as well as local conservation programs. We hope to add wild pig species and hippos in the future, and will be looking for opportunities to be involved at that time.</p> <p>Things that may help:</p> <p>Marketing: Many of us know the dire condition of many wild pig populations and the help they need, but many others are unaware. Could an article be done for Connect? The push for amphibian conservation and bird sustainability through presentations - including at the director's retreat - seems to be effective.</p> <p>For me, a list of excellent (TAG vetted and recommended?) projects in need of support would be helpful.</p> <p>These two ideas, marketing and specific recommended programs, seems to be very effective for St. Louis as they champion Grevy's zebra conservation</p>
Riverbanks Zoo	John Davis	Compile and approve research projects relevant to the species and distribute to holding institutions.
Riverside Zoo	Joe Clawson	The reason we are not involved is that although pigs are something that I like to see and display there are none at my zoo and none native to the area so it is a tough sell. I became interested in pigs by a book I read and would love to have a poster or booklet showing the wild pigs of the world and some of the challenges they face. I would use that to help convince my keepers and society that pigs are a worthy and interesting exhibit.
Roger Williams Zoo	Tim French	Provide recommendations and references for TAG endorsed projects.
Rolling Hills Wildlife Adventure	Sandy Walker	Perhaps it would be helpful to compile a list of successful mixed species exhibits that include pig peccary and hippo. I would be able to do minor exhibit alterations to house one of these species while new exhibit space is not an option. Just some thoughts.
San Antonio Zoo	John Gramieri	feel that the TAG steering committee has the best handle on those projects which best suit the needs of various species. Those that are listed on the website as endorsed by the TAG are certainly worthwhile, but unfortunately focus on rarely-held species. An expanded list of recommended options, covering those species more likely found in North American collections, could garner more support for those species for which zoos have institutional ties. Zoos that do not presently support conservation projects for WPPH species might be more inclined to back species that they hold, if provided this expanded means of direction.
Santa Fe Community College	Kathy Russell	I think you are already doing quite a bit to promote interest in the conservation projects. Perhaps an annual report that summarizes each of the projects that can be sent electronically. We are a small zoo so we can only fund a few projects. The projects are chosen on based on what how involved we are with a species.
Scovill Zoo	Nyan Mc Fadden	SEVERAL YEARS AGO (3-4) WE HAD CONTACTED SEVERAL PEOPLE WITHIN THE TAG BECAUSE WE WERE LOOKING TO FILL AN EXHIBIT WITH A SPECIES OF PIG. WE HAD A DIFFICULT TIME GETTING RESPONSES FROM SOME OF THE PEOPLE WE CONTACTED AND WE WERE HOPING TO GET A SPECIES OF HIGHER CONSERVATION STATUS BUT WERE RECOMMENDED OTHER OPTIONS. AS A RESULT THERE IS NOW A CERVID IN THE EXHIBIT INSTEAD. NOT LONG PRIOR TO THAT A NOTICE HAD BEEN SENT OUT THAT THE TAG WAS LOOKING FOR NEW HOMES FOR SEVERAL SPECIES OF SUIDS
St Augustine Alligator Farm	Amanda Whitaker	We have no pigs peccaries or hippos in our collection and we do not participate in any conservation projects.

3) What do you feel the TAG could do to increase institutional support for wild pig peccary or hippo conservation projects?

<u>Institution</u>	<u>Respondent</u>	
St. Louis Zoo	Martha Fischer	Select a few priority species (no more than 1 or 2) Identify one project for each priority species Identify an enthusiastic and tireless species and/or project champion who will relentlessly wave the flag for the species and/or project Identify potential partners (in situ – in-country organizations/personnel; ex situ – other TAGs, SSPs, Zoos, etc); Clearly identify and communicate conservation needs to institutions; Provide regular reporting of ongoing projects;
Sunset Zoo	Mark Ryan	Need a way for institutions to be more of projects they can participate in particularly smaller starter programs where they can tag on to other more experienced groups.
Tautphaus Park Zoo	Bill Gersonde	DISTRIBUTE MORE INFORMATION OF ISSUES PROJECTS ETC. RELATED TO THE ANIMALS ENVIRONMENT COUNTRY I NEED TO BE MORE INFORMED! LOVE THE VERY WELL DONE BROCHURE ON WHY WE SHOULD ADD A PIG SPECIES TO OUR ZOO SOMETHING LIKE THAT ALWAYS CATCHES A PERSONS EYE.
The Good Zoo at Oglebay	Joe Greathouse	Currently our institution only houses domestic species of swine so we would probably not be too involved with these projects until some point in the future.
Toronto Zoo	Maria Franke	The TAG could increase support by researching and establishing priority research projects that institutions could help fund. Distribute this information and institutions could directly support a project or filter monies to an in situ TAG fund that would distribute monies.
Tulsa Zoo	Paul Louderback	Sorry, no tangible suggestions
Zoo Leon	Richard Sheffield	All research projects require financing. The TAG could help by diffusing the nature and needs of related conservation projects that are being supported by participating institutions.
Zoo New England	Jeannine Jackle	In order to gain more support for PPH conservation projects the TAG needs to make projects more widely "advertised" and justify the projects as to why they should be supported when compared with other conservation priorities or projects.
ZOOAMERICA Wildlife Park	Dale Snyder	We are sponsoring weekends concentrating on different species. Maybe they could work on activities that all zoos could use to plan a day or weekend for the species.

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

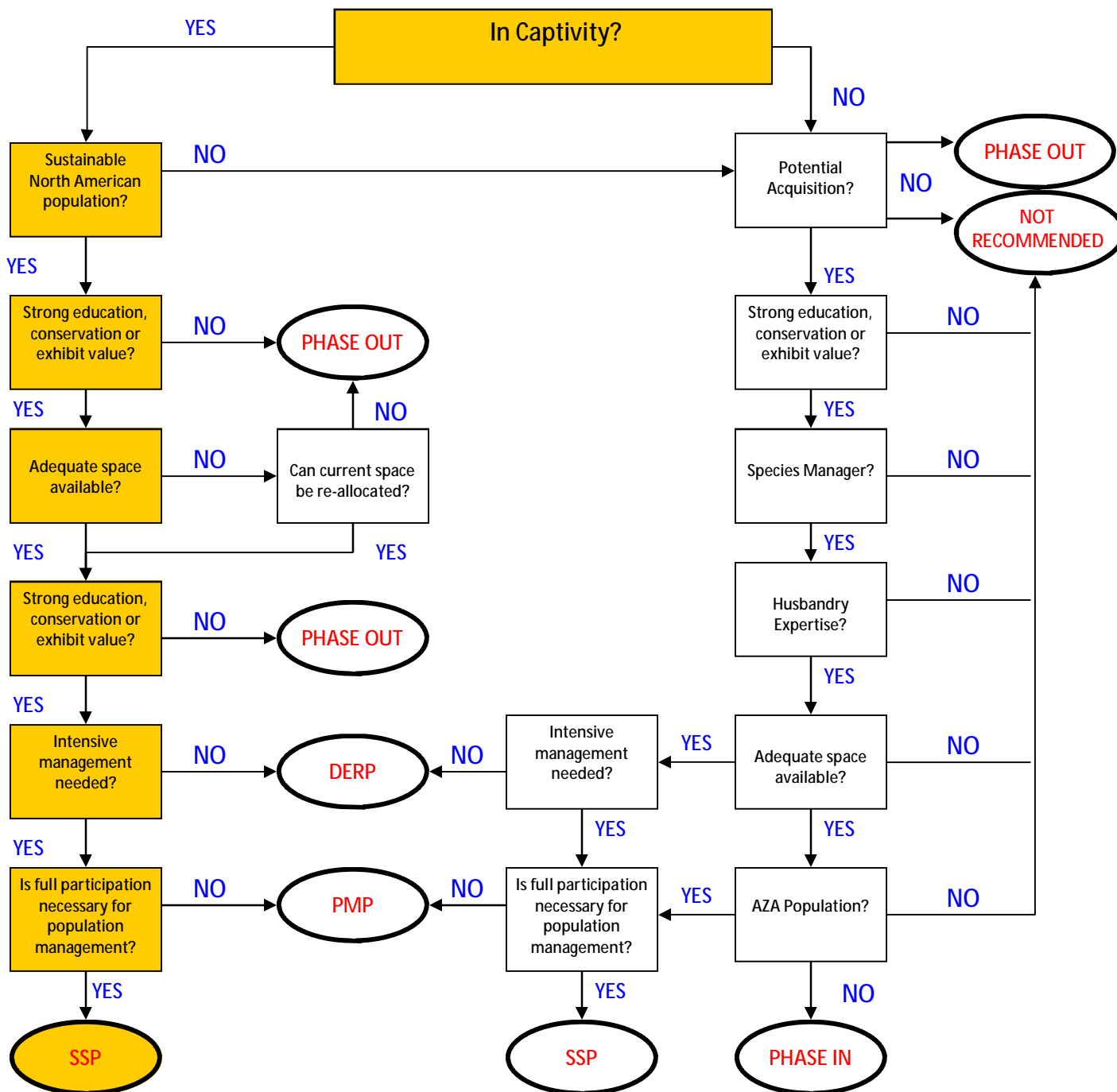


Current Program: SSP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Chacoan peccary *Catagonus wagneri*

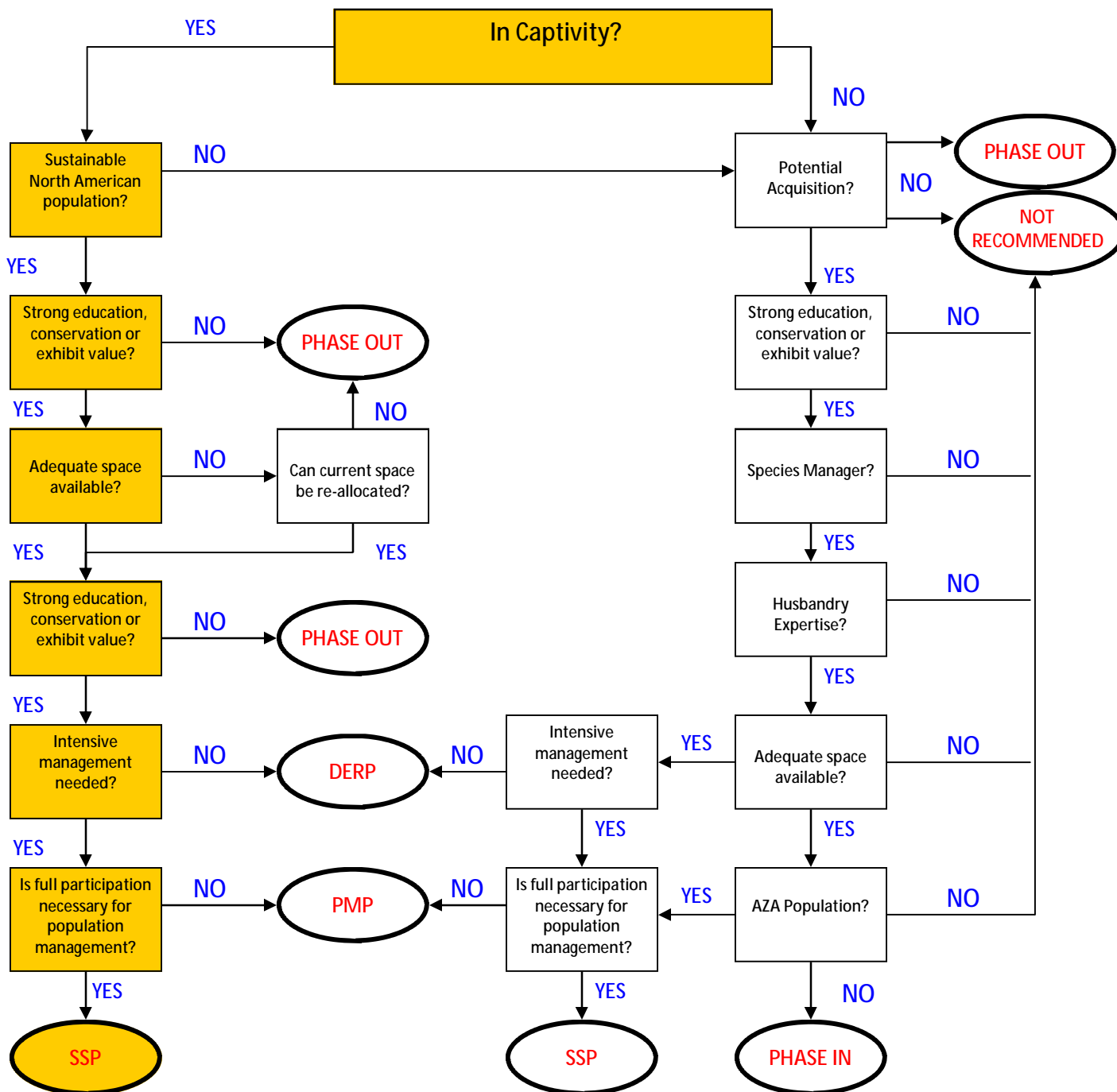


Current Program: SSP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Pygmy hippopotamus *Hexaprotodon liberiensis liberiensis*

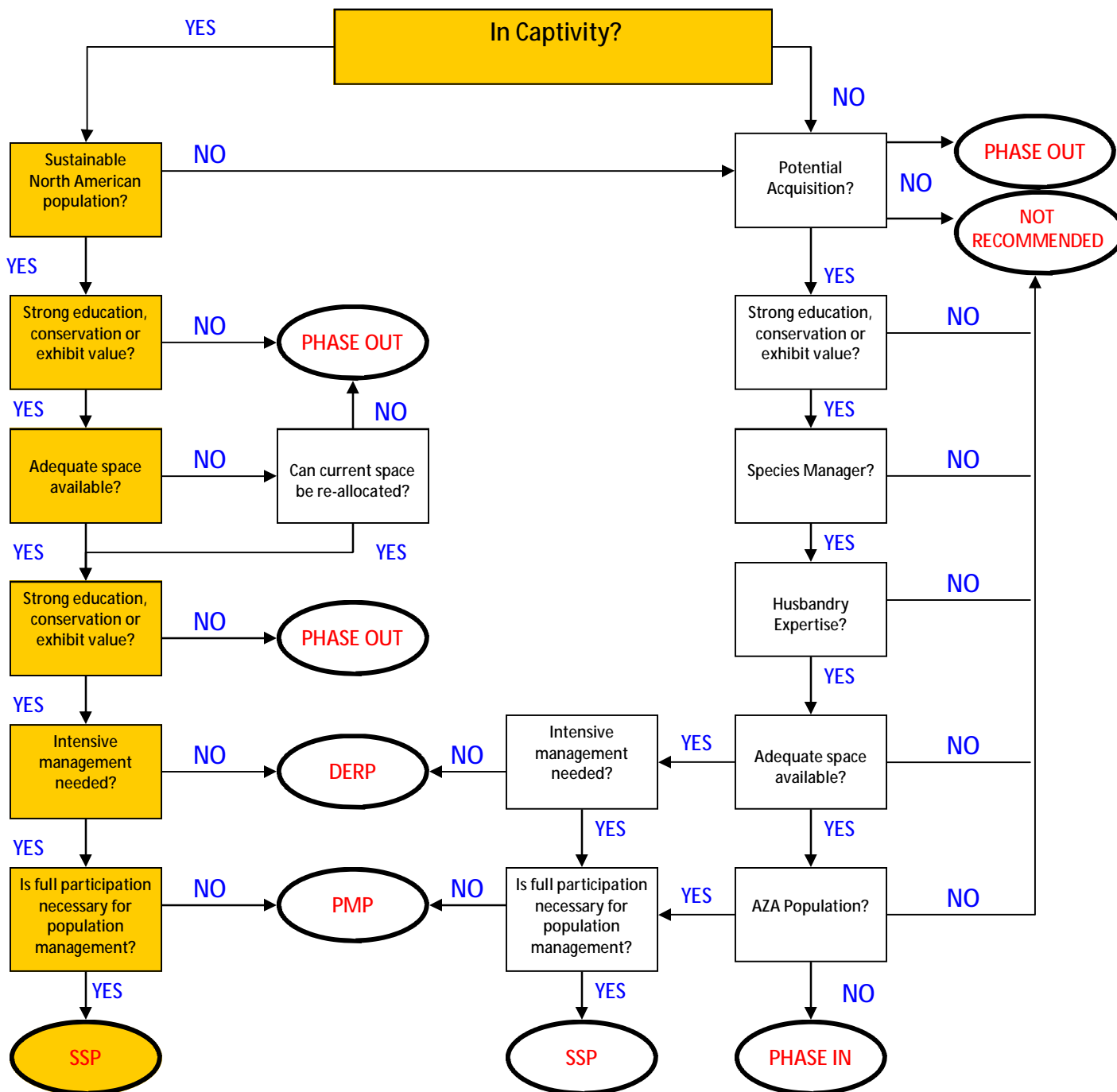


Current Program: SSP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Hippopotamus *Hippopotamus amphibius kiboko*

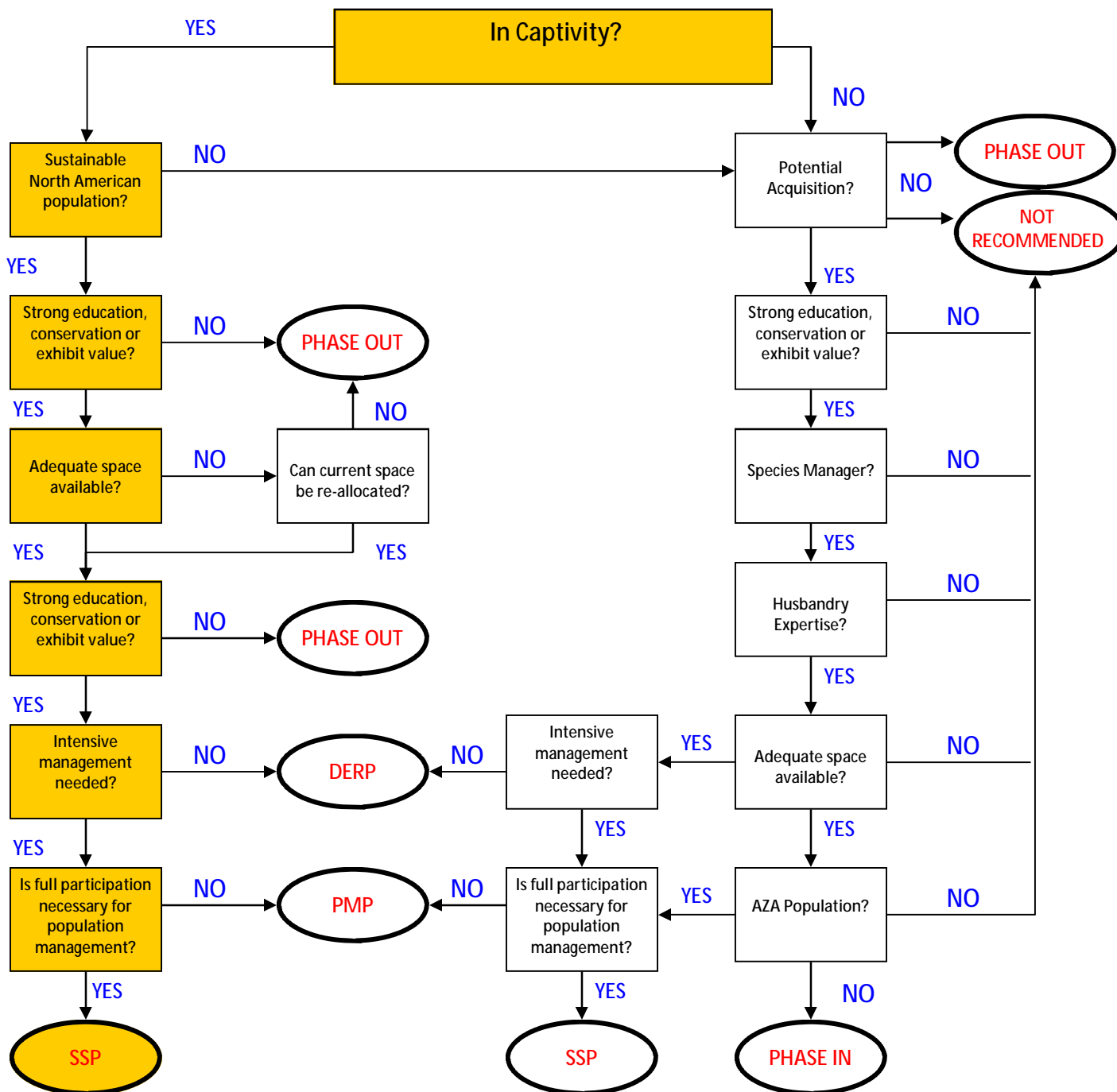


Current Program: PMP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Hippopotamus *Hippopotamus amphibius amphibius*

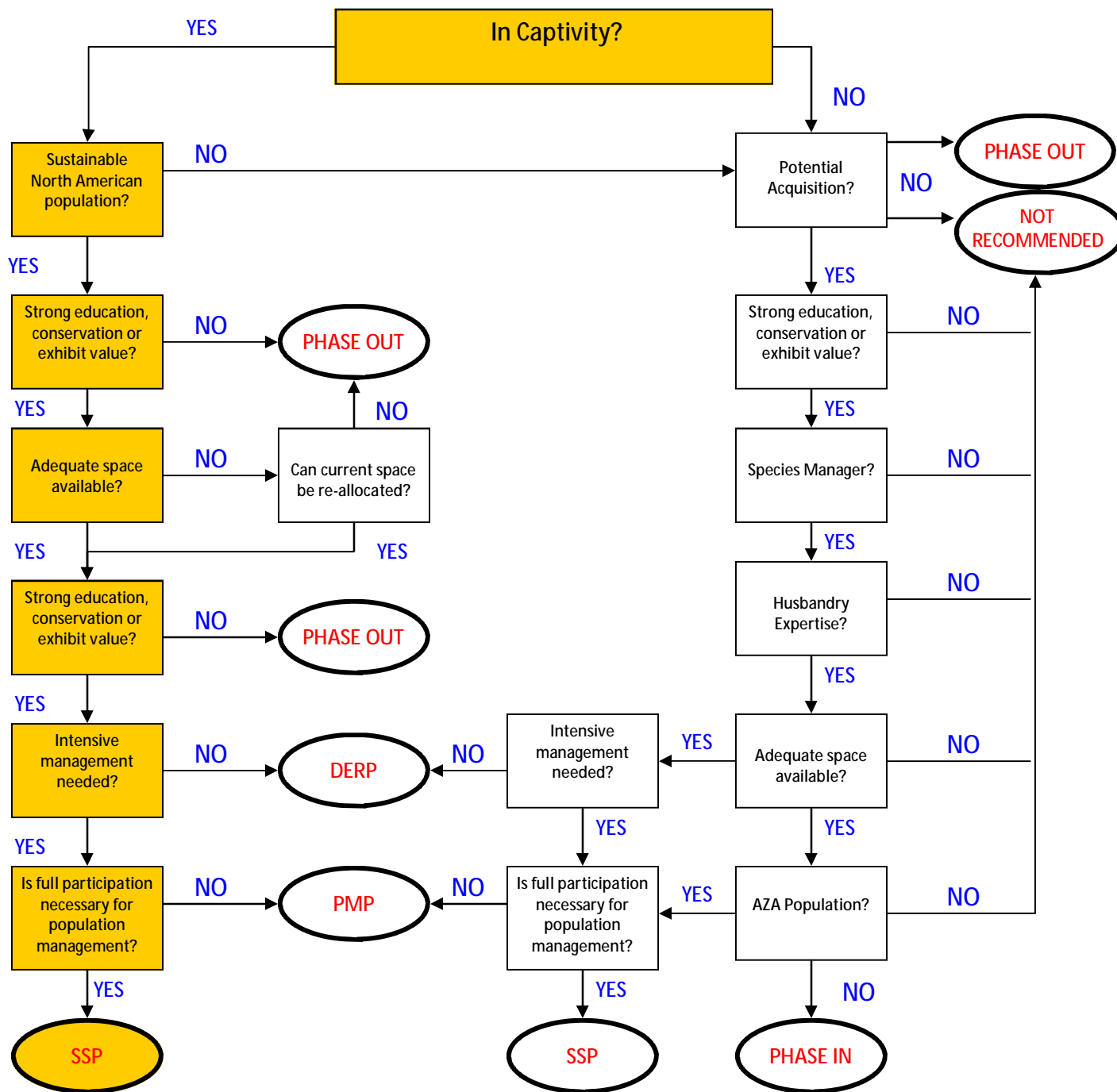


Current Program: PMP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Visayan warty pig *Sus cebifrons*



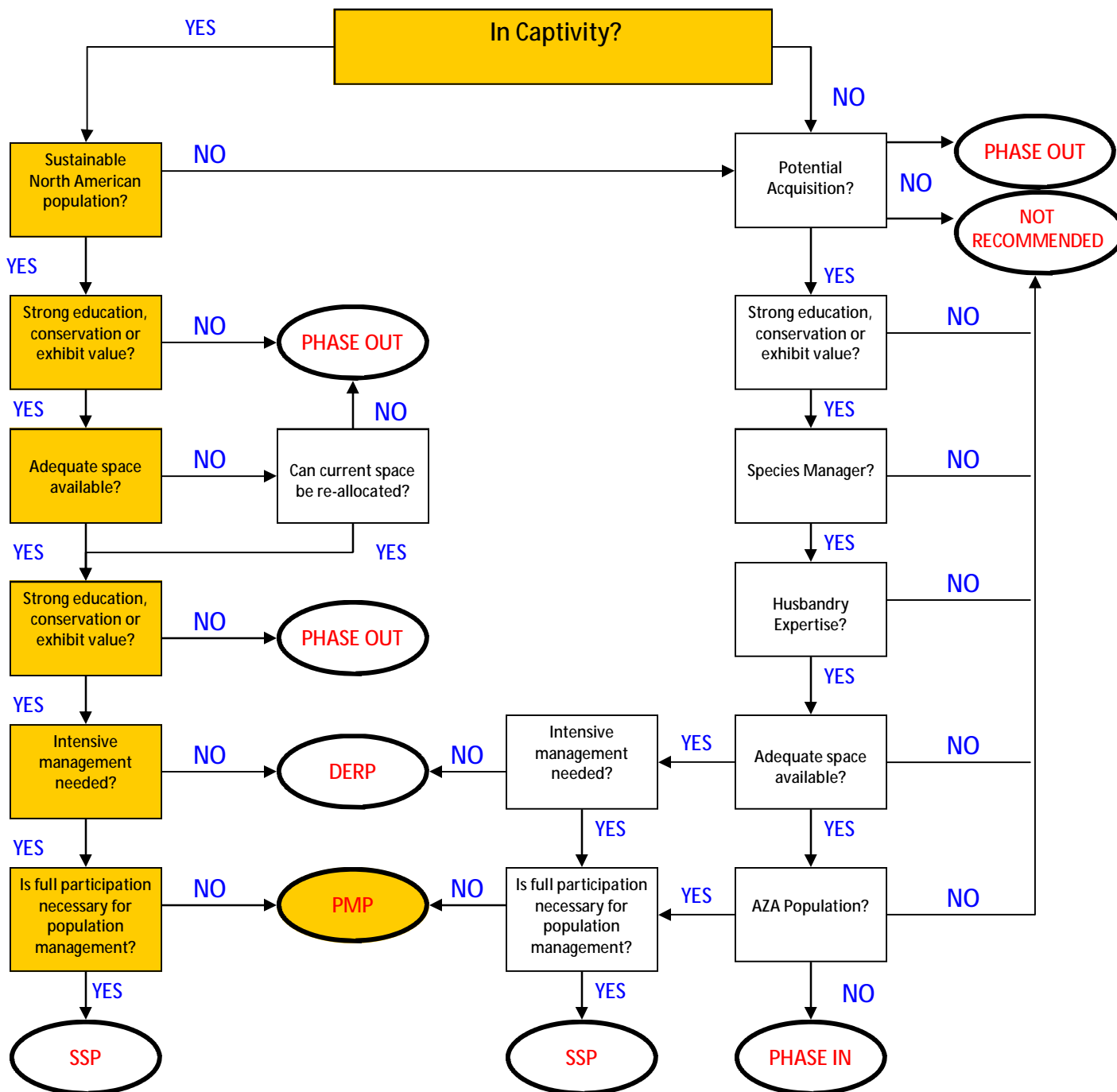
Current Program: SSP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Collared peccary

Pecari tajacu

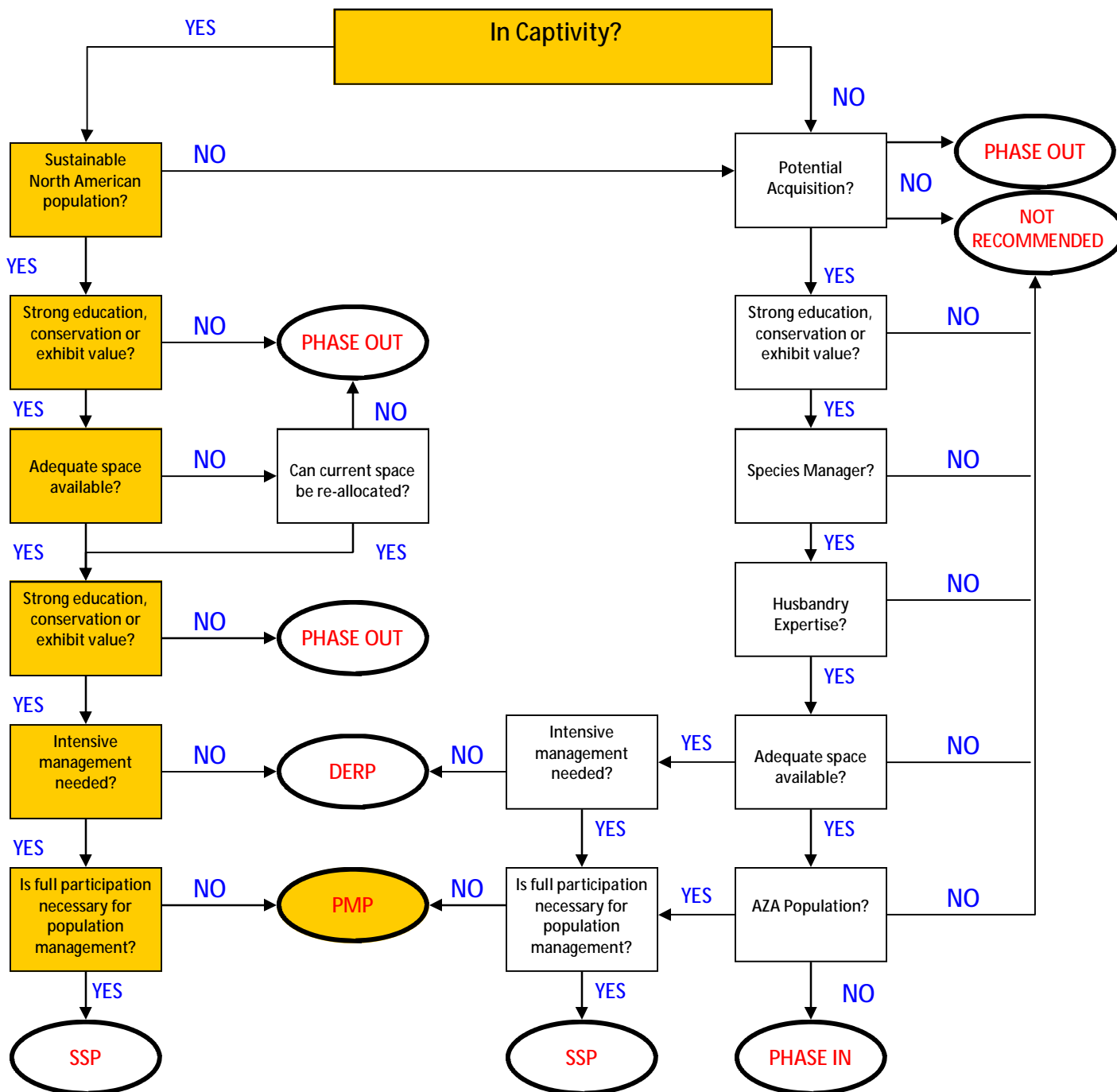


Current Program: DERP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Collared peccary *Pecari tajacu angulatus*

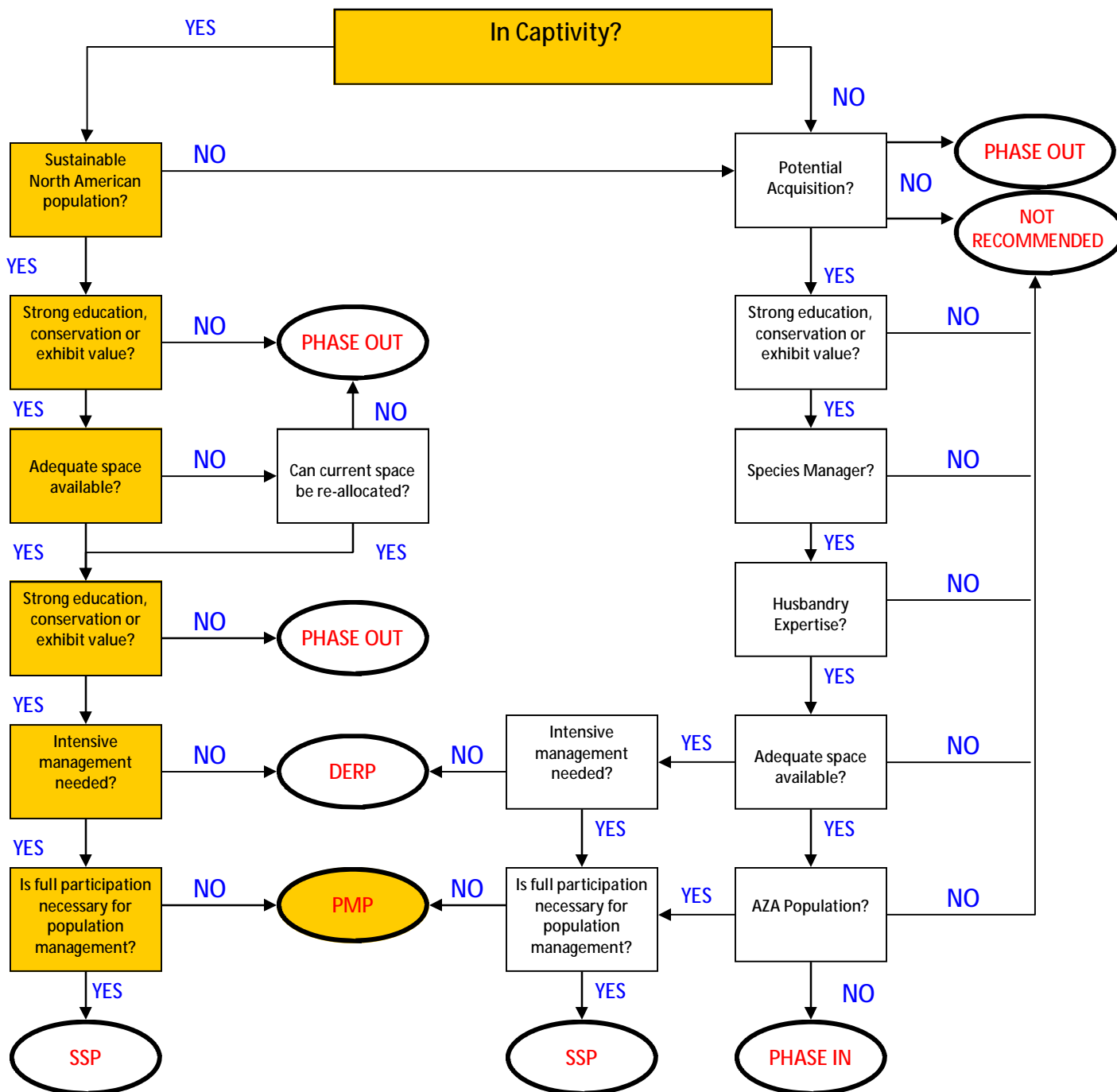


Current Program: DERP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Collared peccary *Pecari tajacu sonoriensis*



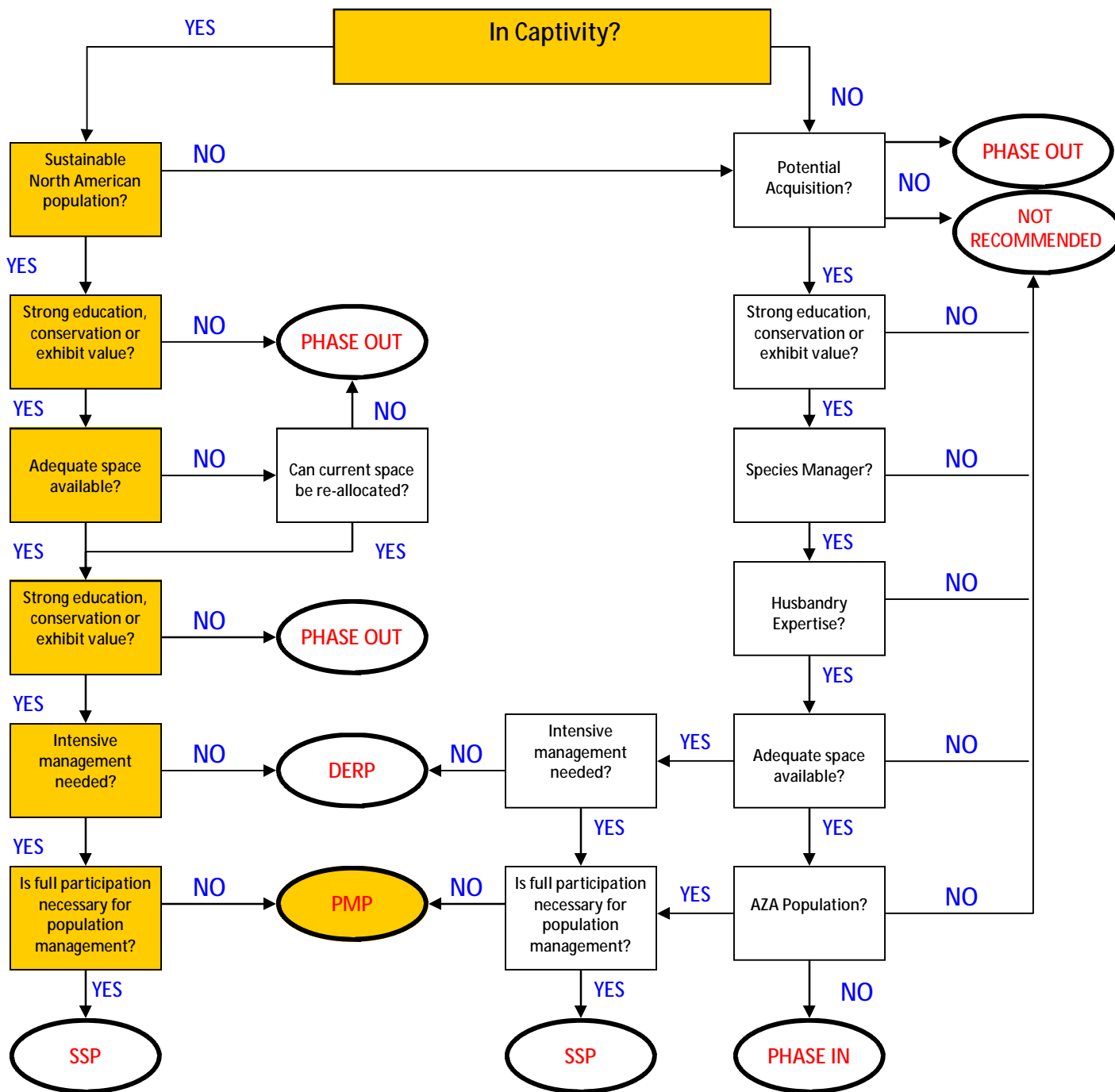
Current Program: DERP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Collared peccary

Pecari tajacu tajacu

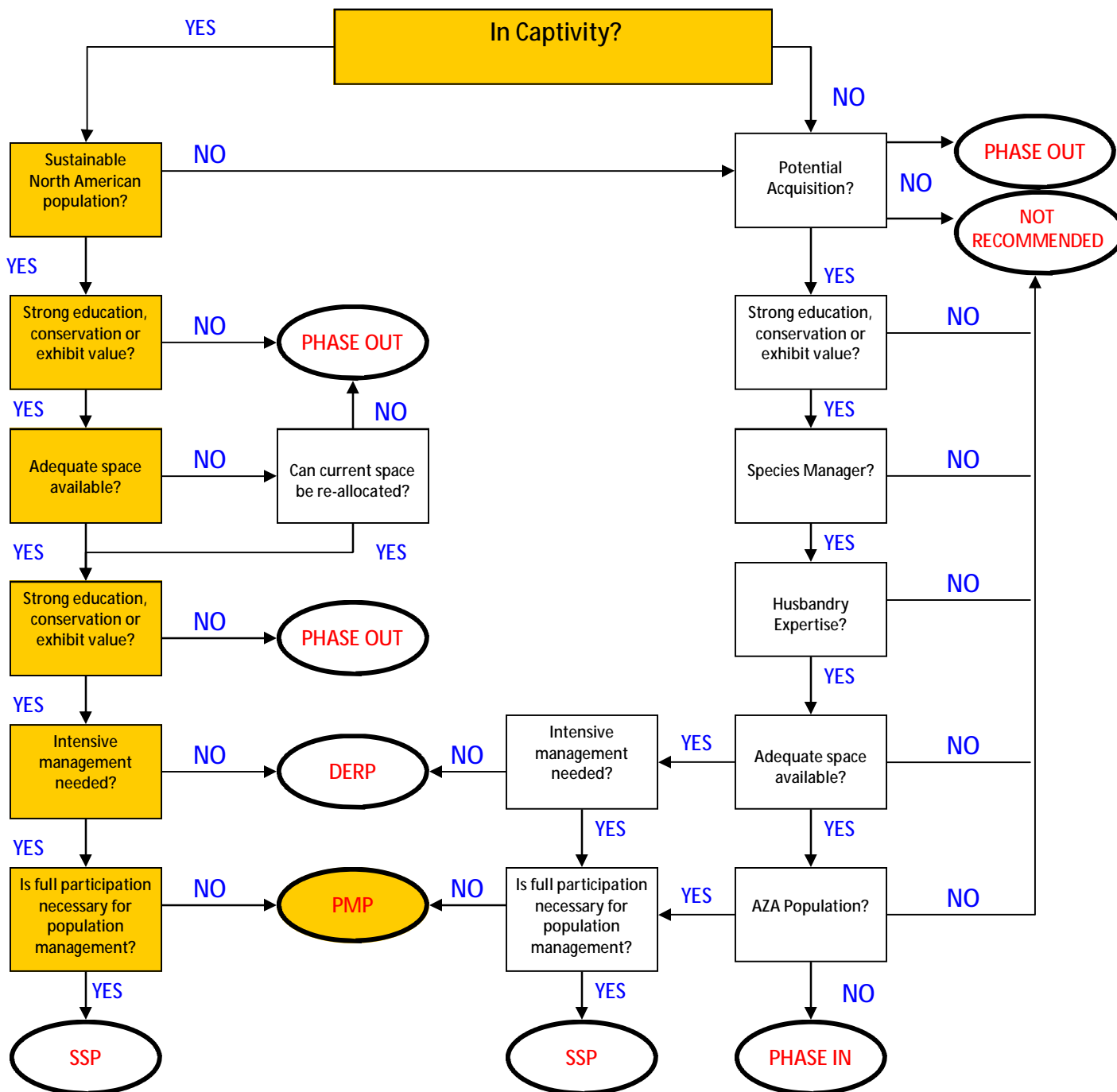


Current Program: DERP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Common warthog *Phacochoerus africanus*

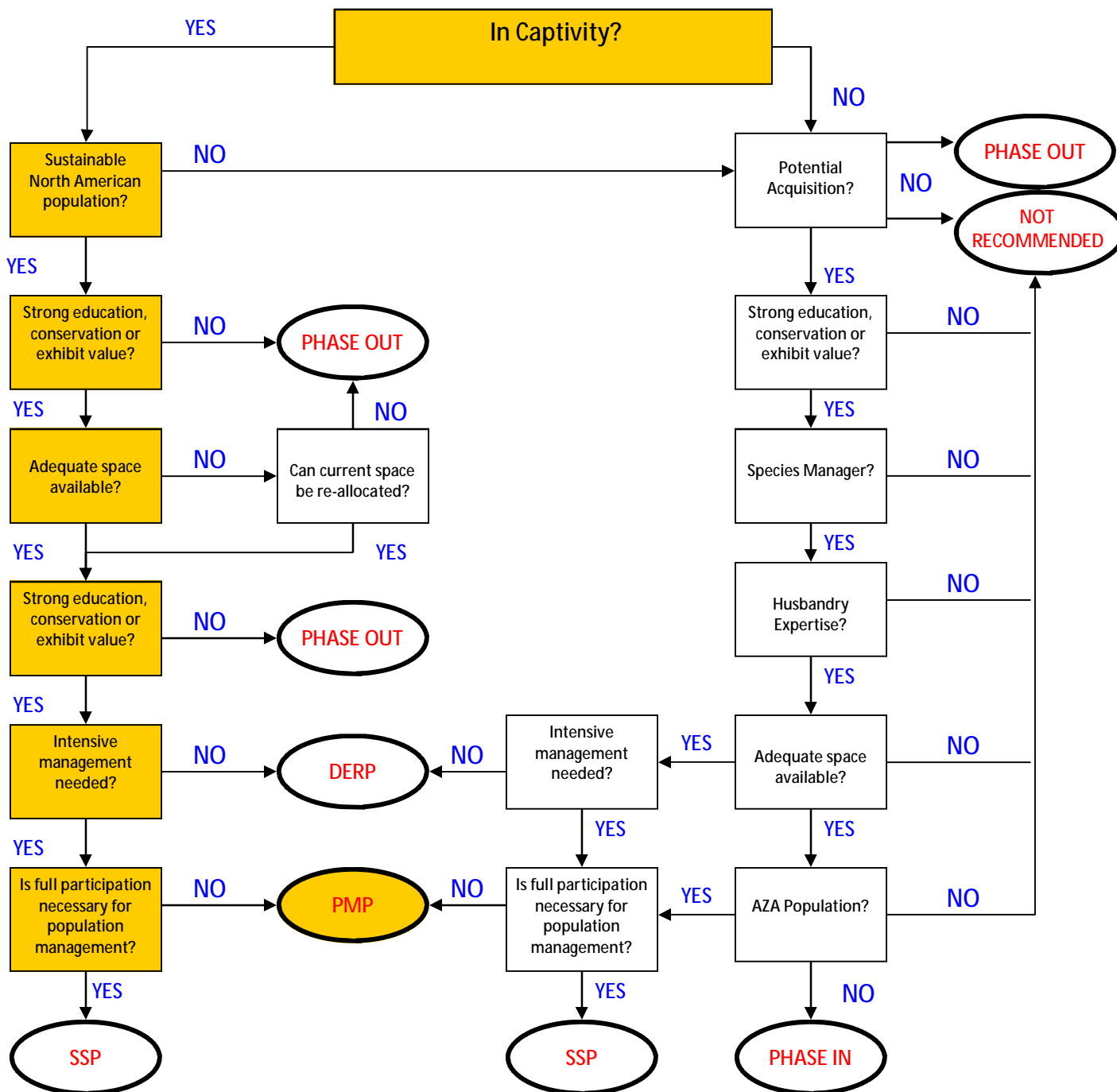


Current Program: PMP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Southern warthog *Phacochoerus africanus sundevallii*



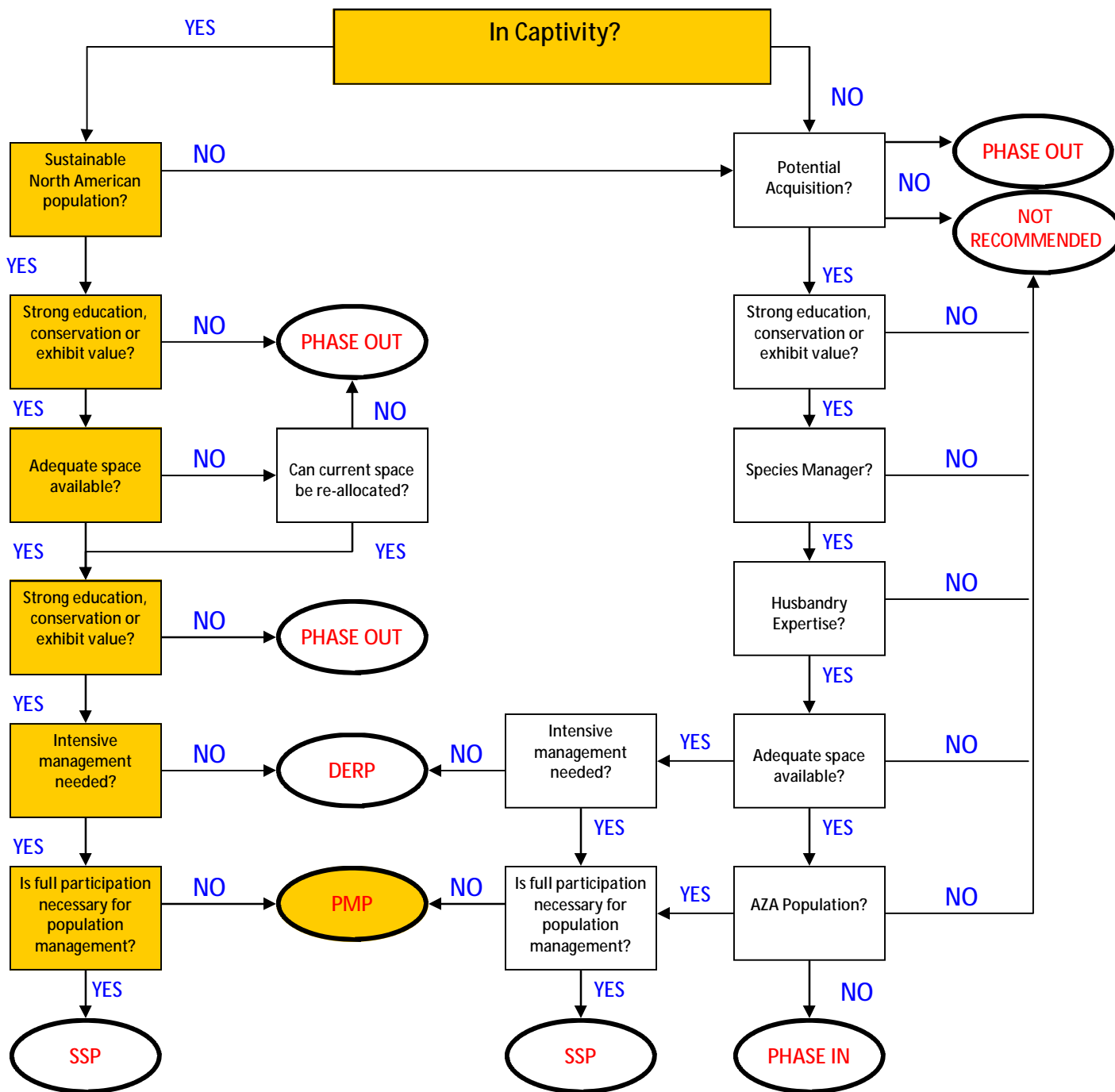
Current Program: PMP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Red river hog

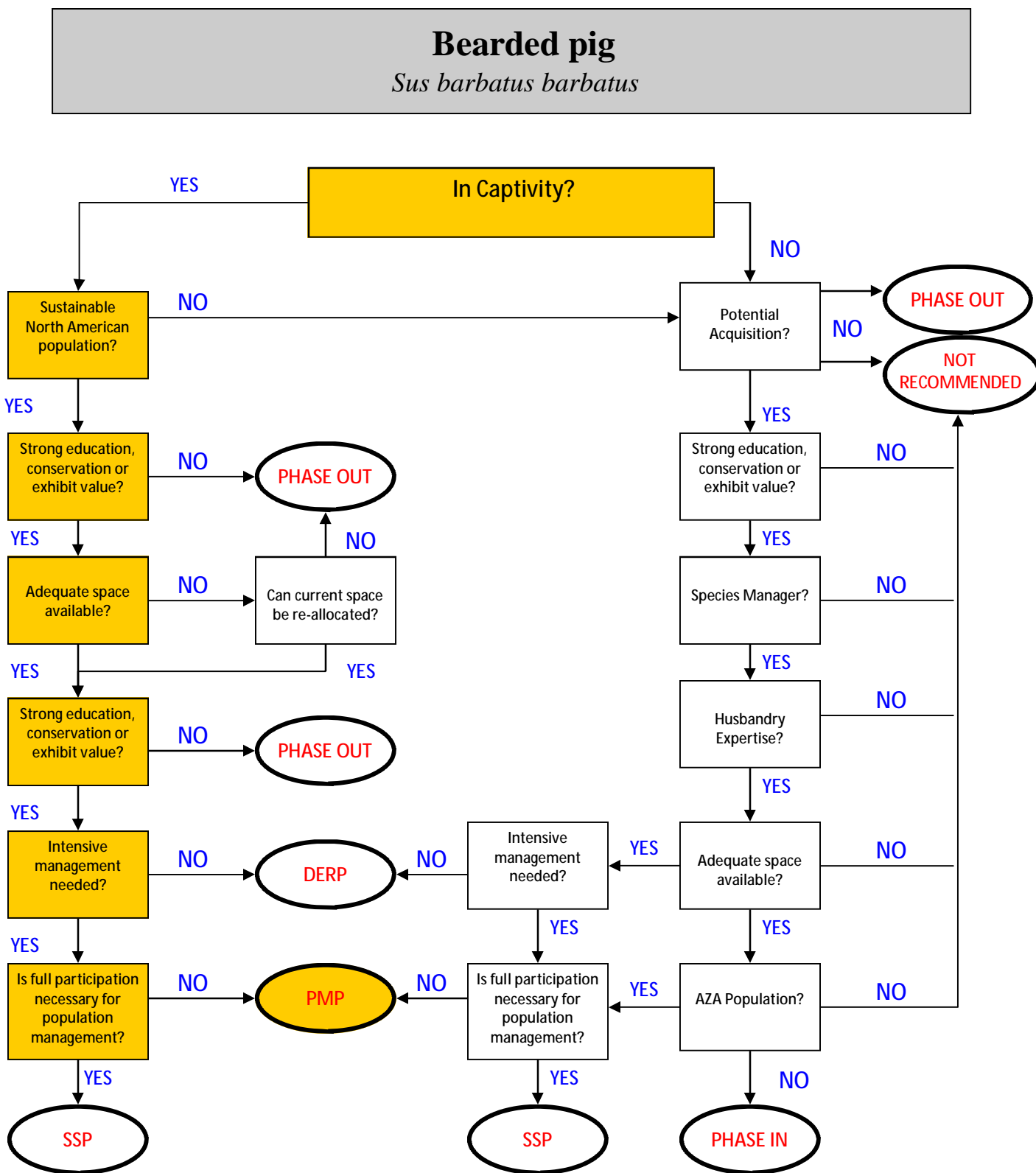
Potamochoerus porcus



Current Program: PMP

Revised for 2008 RCP

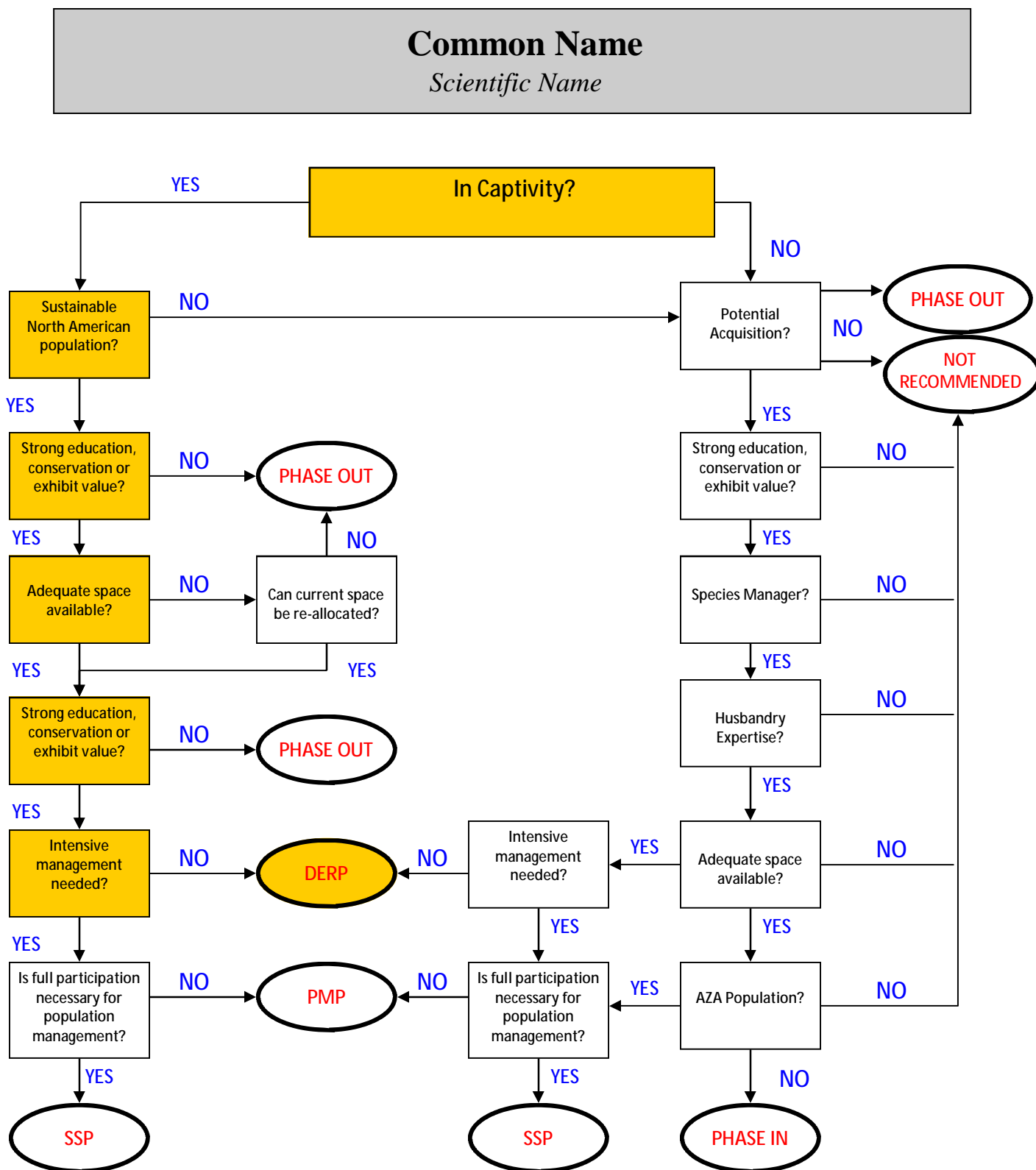
Wild Pig, Peccary and Hippo TAG Management Program Decision Tree



Current Program: DERP

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

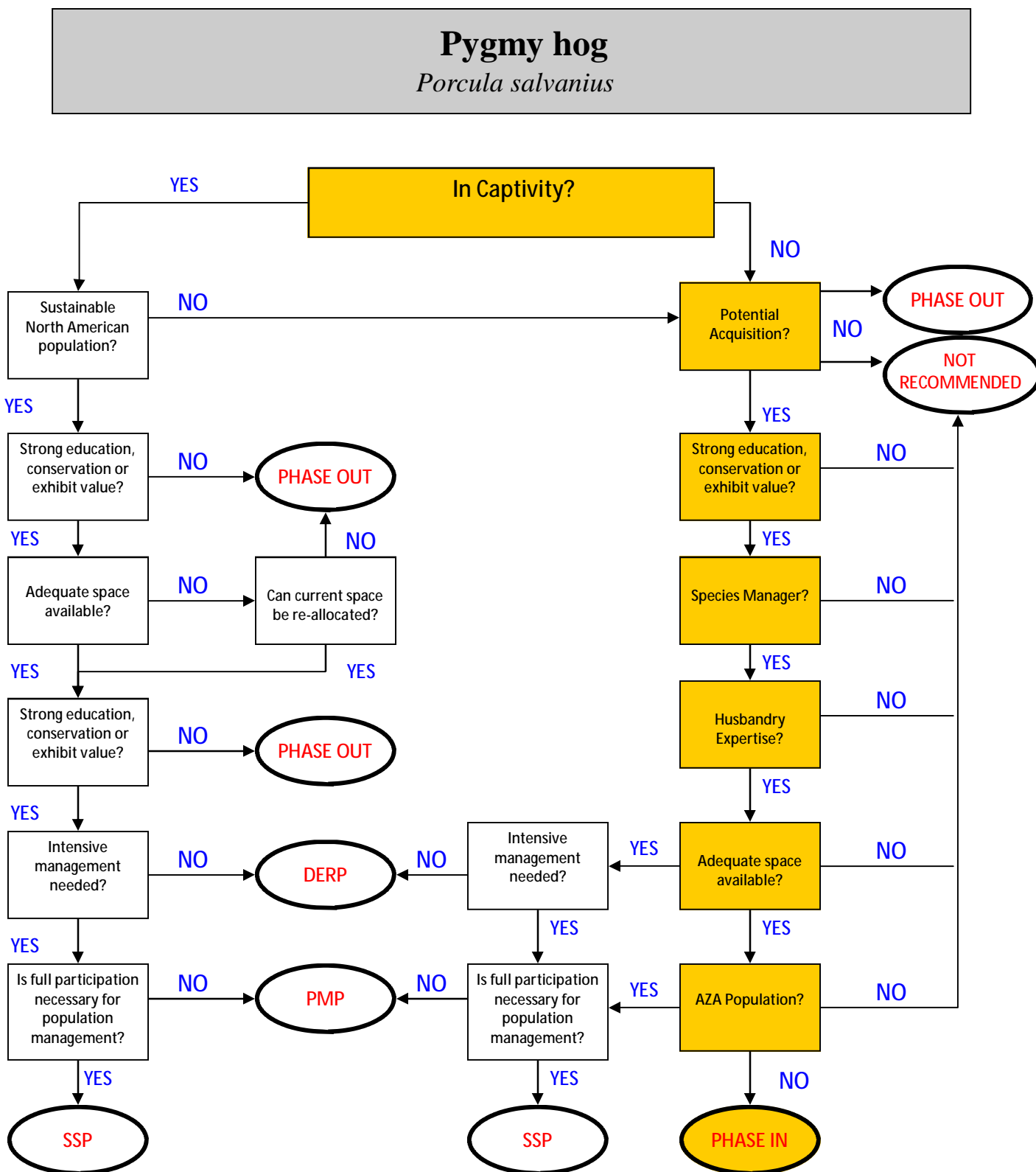


Current Program:

Revised for 2008 RCP

The WPPH TAG currently does not have any species that meet the DERP program selection criteria.

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree



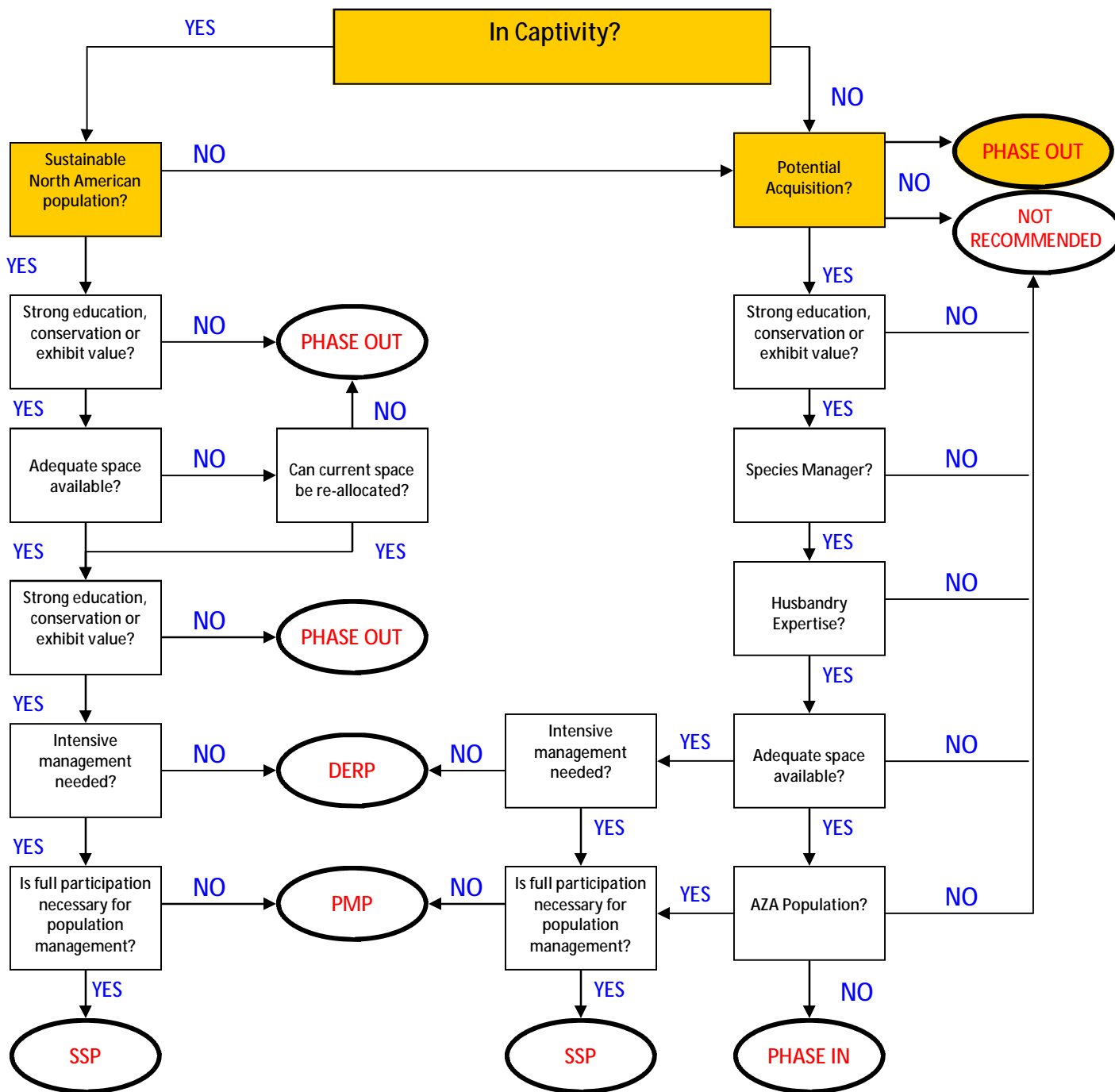
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Giant forest hog

Hylochoerus meinertzhageni ivoriensis



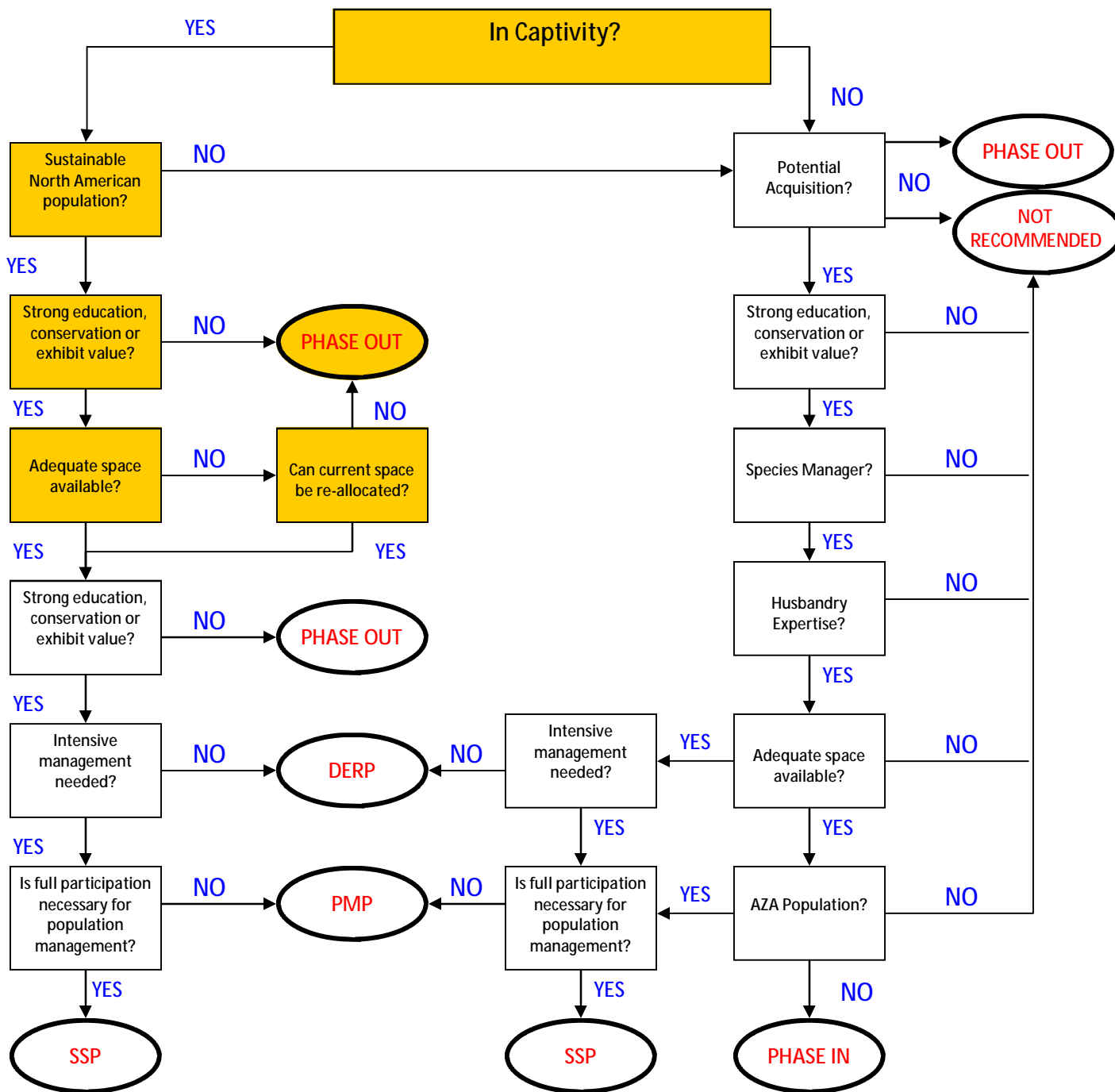
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Cape Bushpig

Potamochoerus larvatus koiropotamus



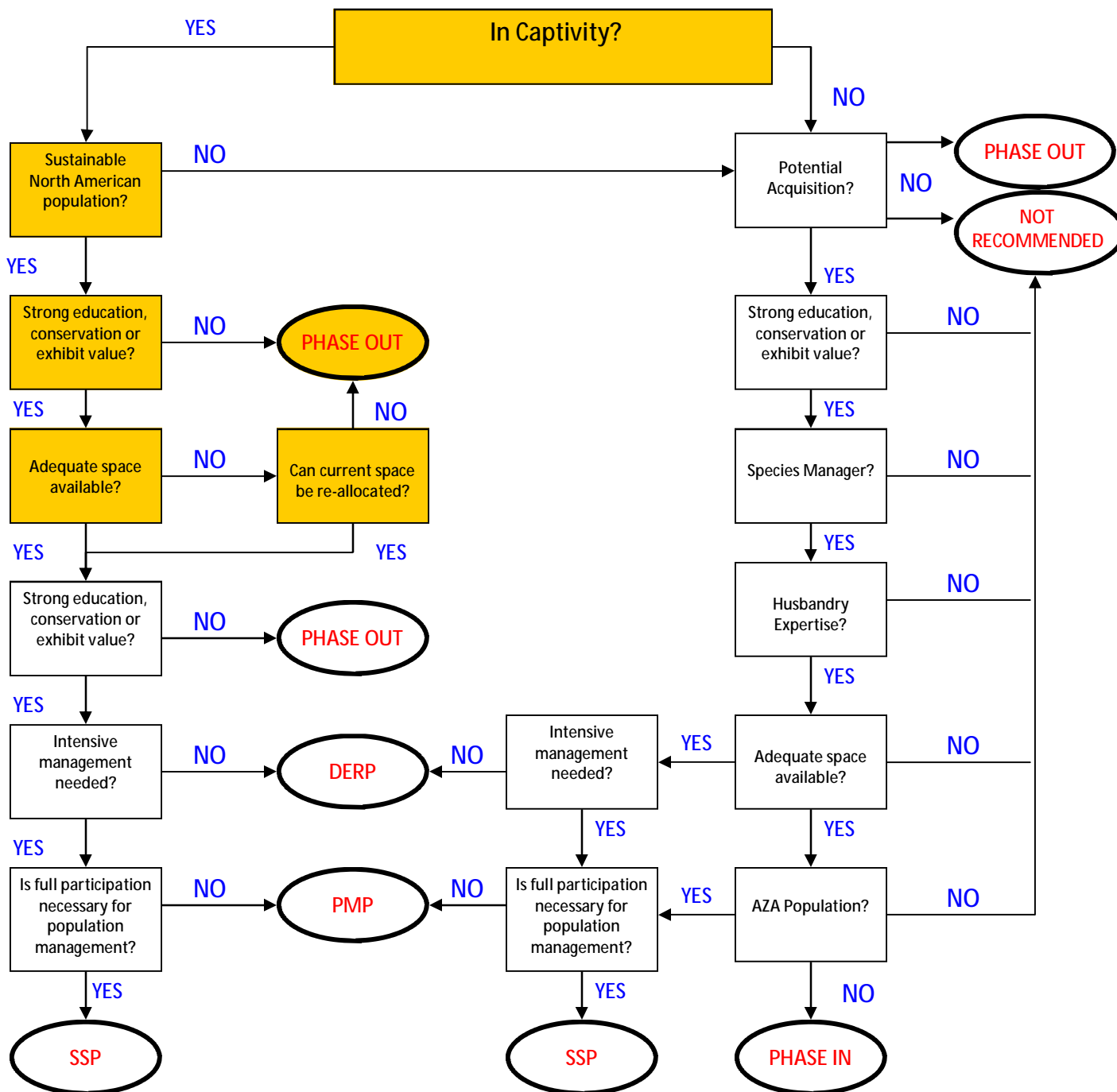
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

European wild boar

Sus scrofs scrofa

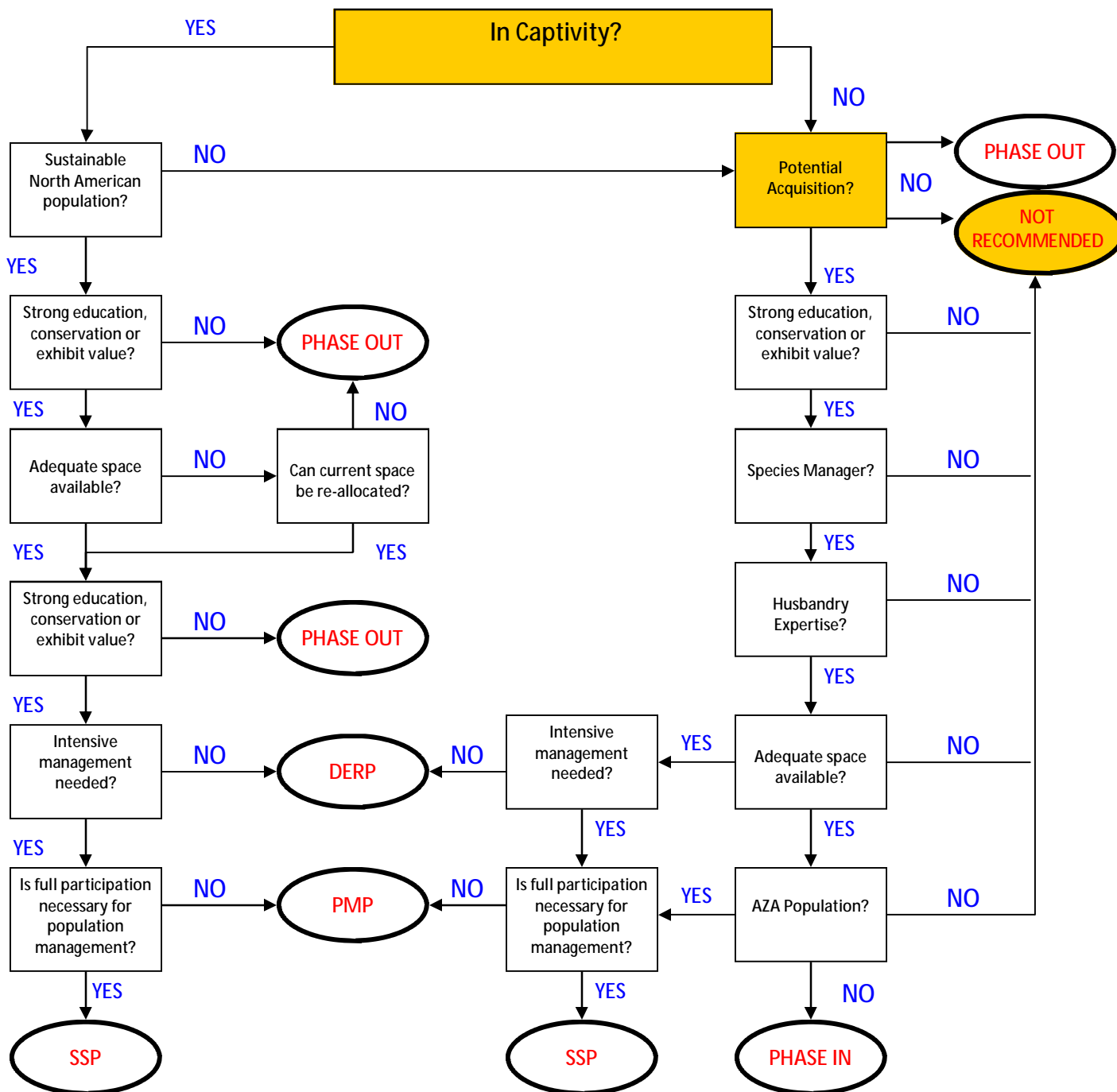


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Golden babirusa *Babrousa babyrussa babyrussa*



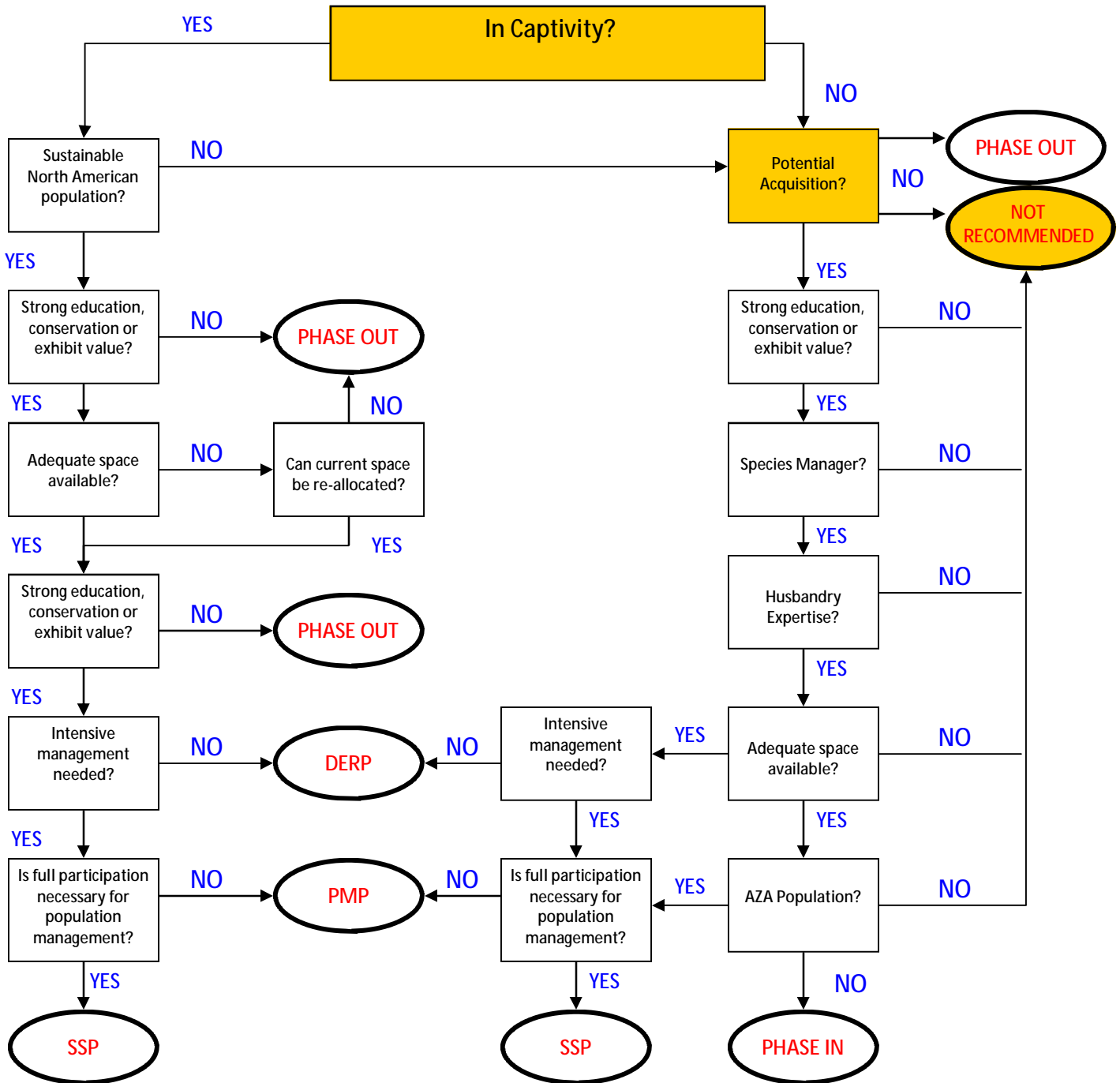
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Togian Island's babirusa

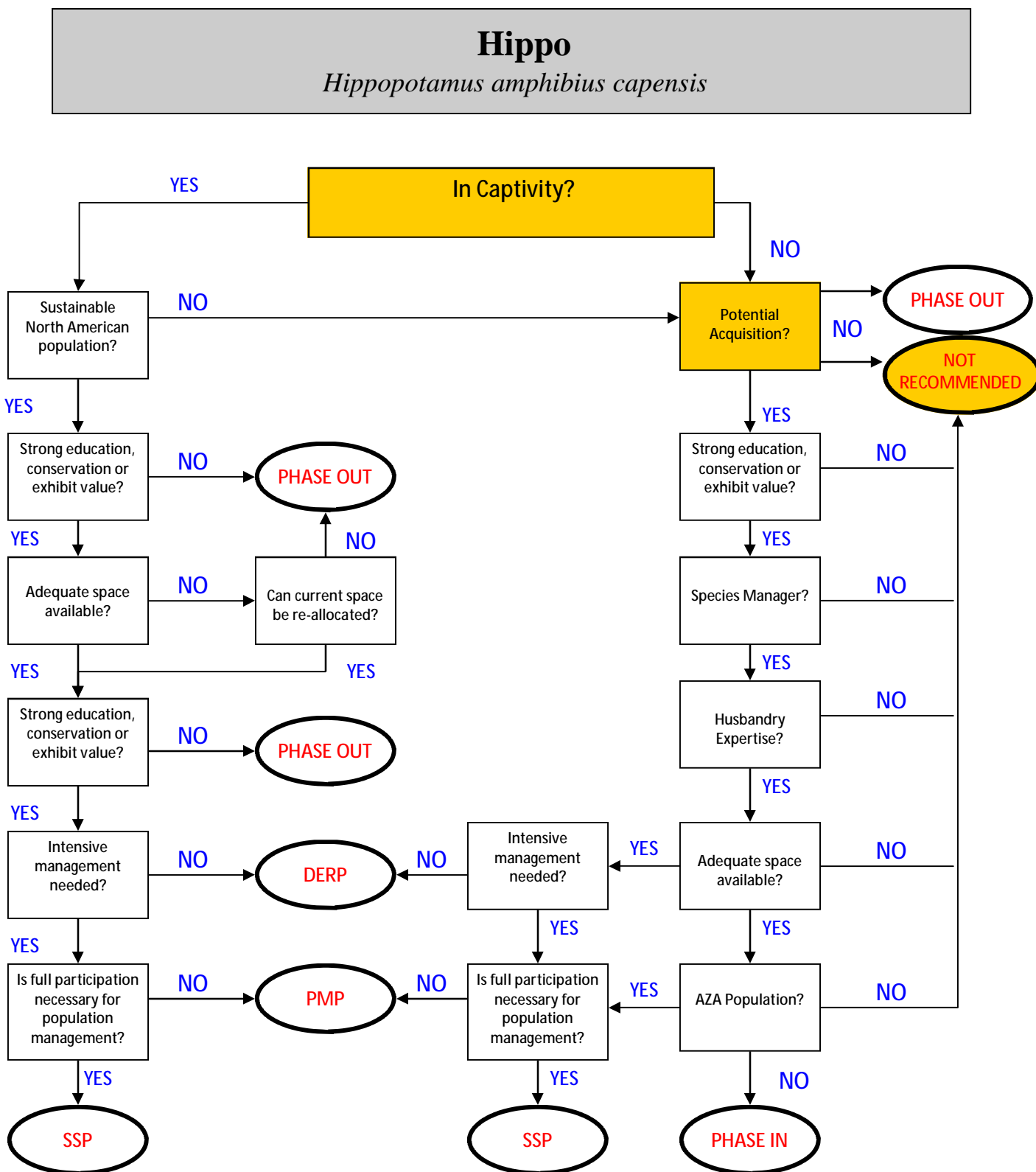
Babyrousa babyrussa togeanensis



Current Program:

Revised for 2008 RCP

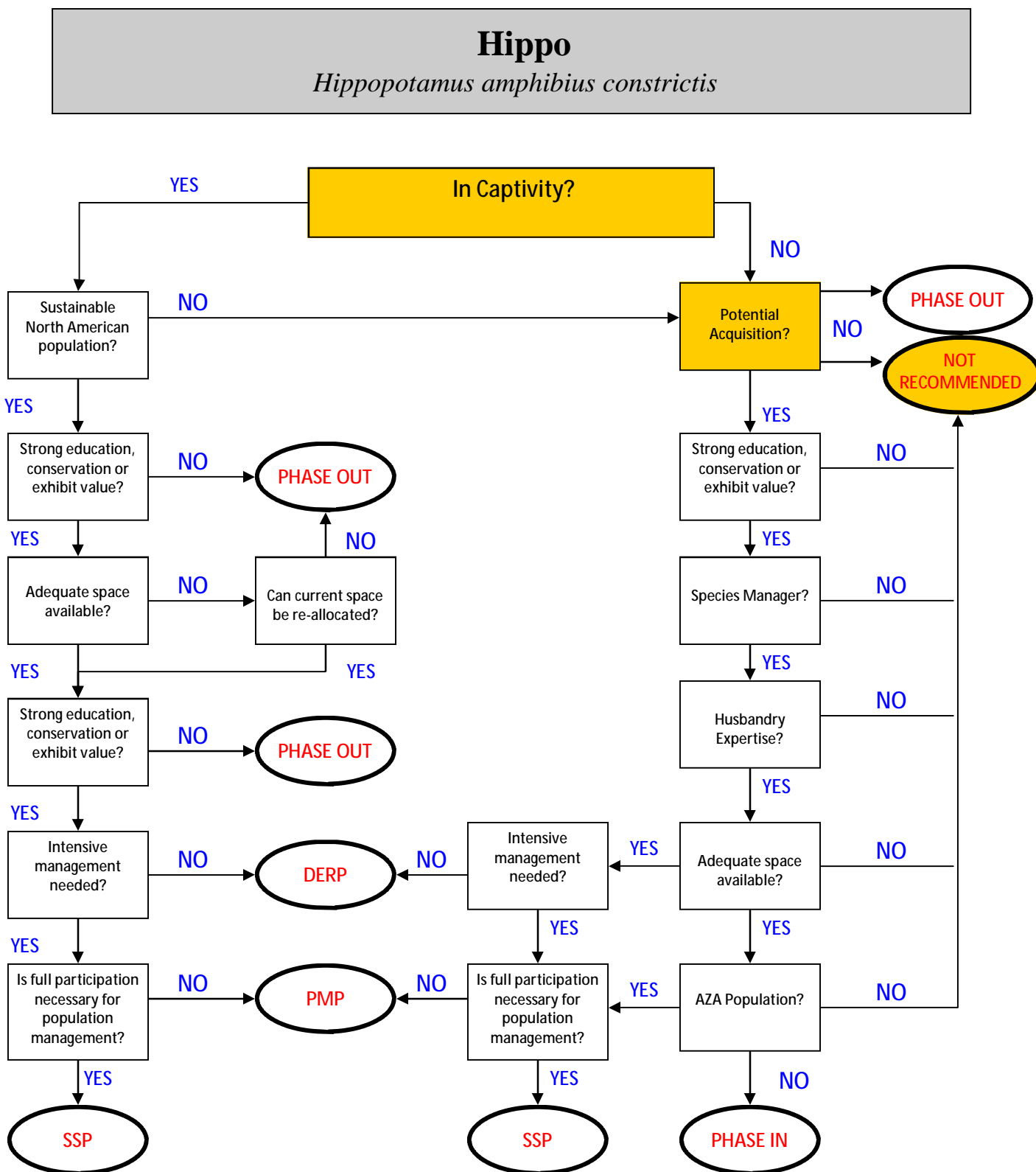
Wild Pig, Peccary and Hippo TAG Management Program Decision Tree



Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

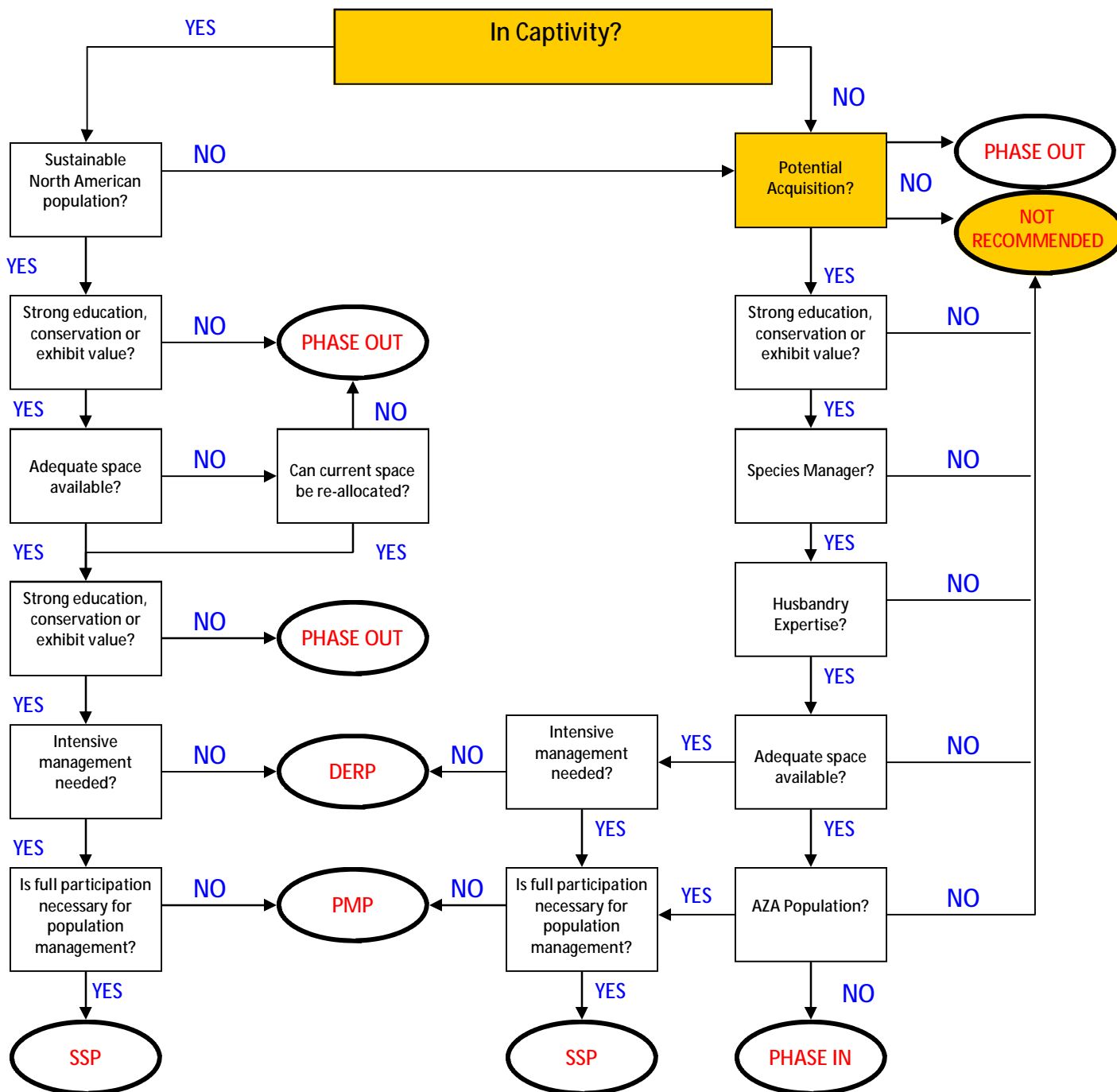


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Hippopotamus *Hippopotamus amphibius tschadensis*



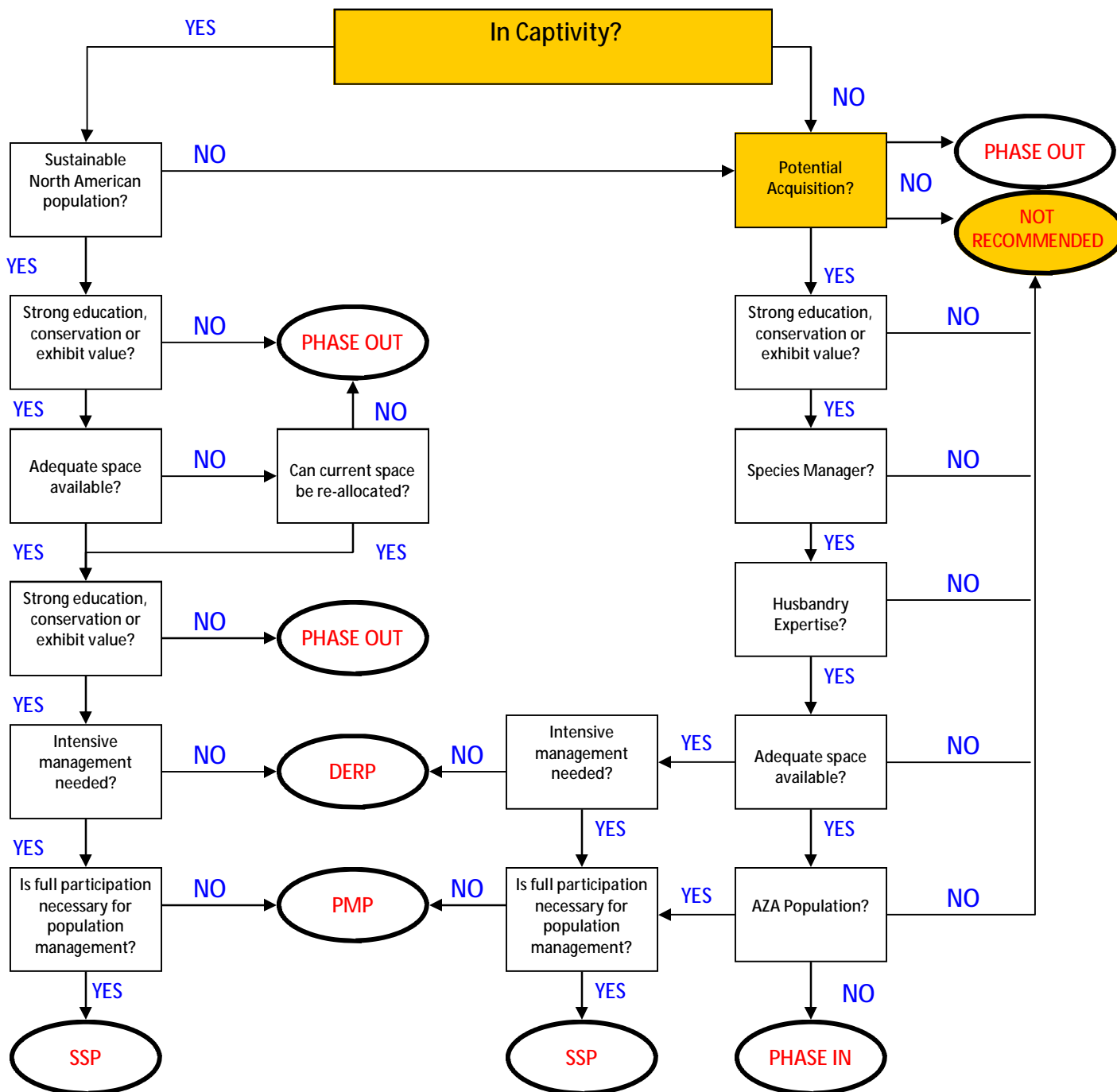
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Giant forest hog

Hylochoerus meinertzhageni meinertzhageni

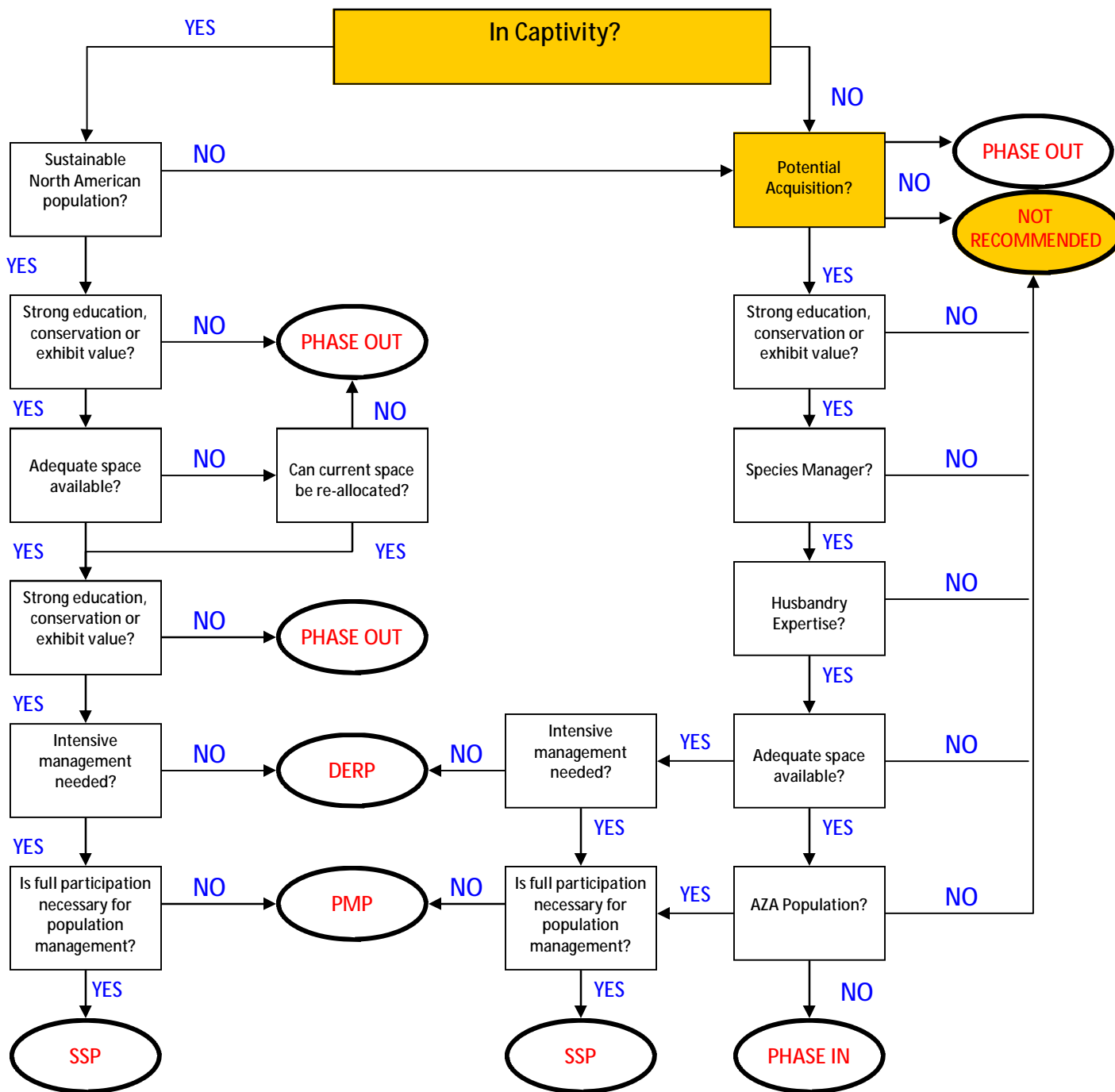


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Congo forest hog *Hylochoerus meinertzhageni rimator*

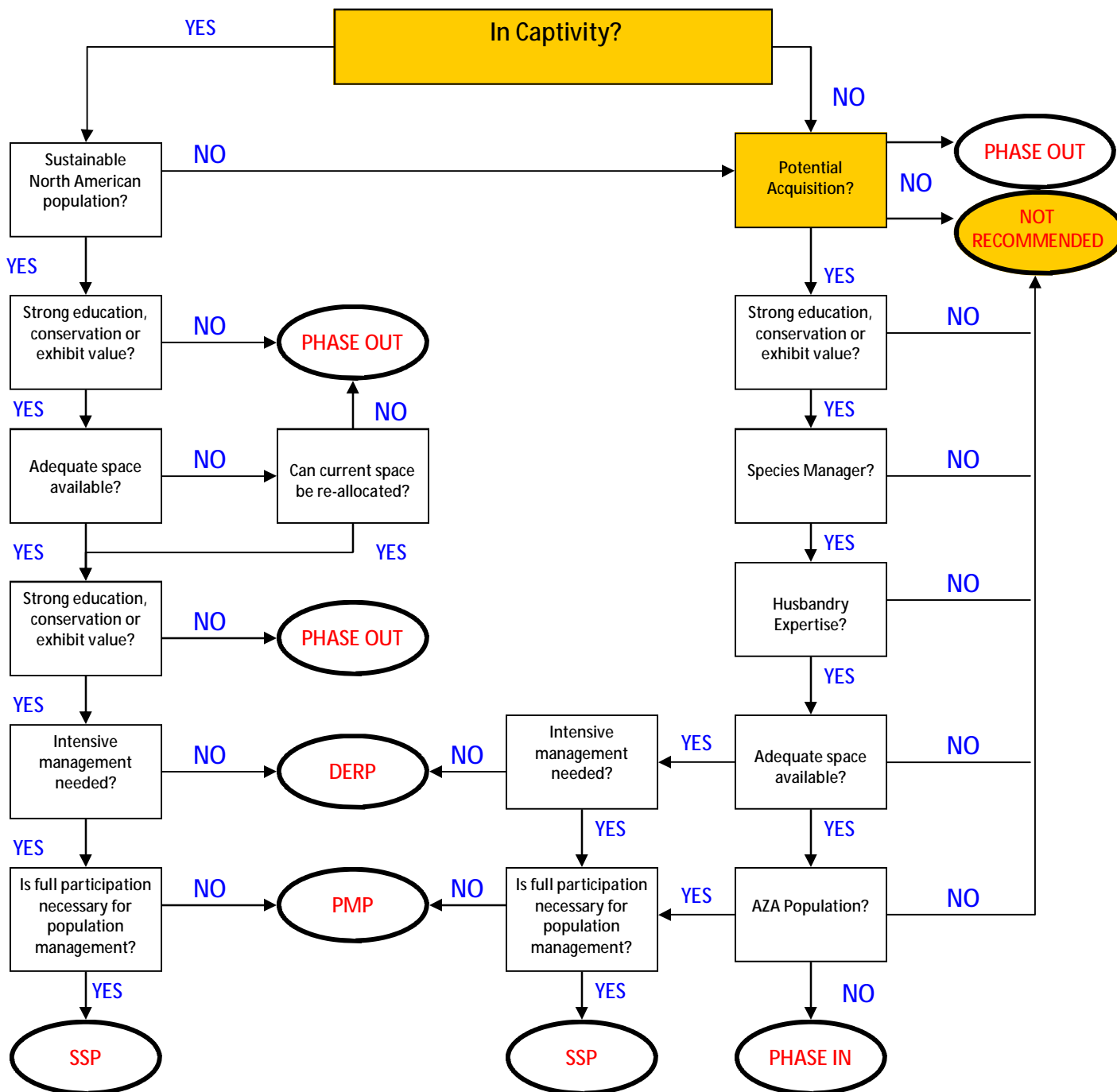


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Desert warthog *Phacochoerus aethiopicus delamerei*

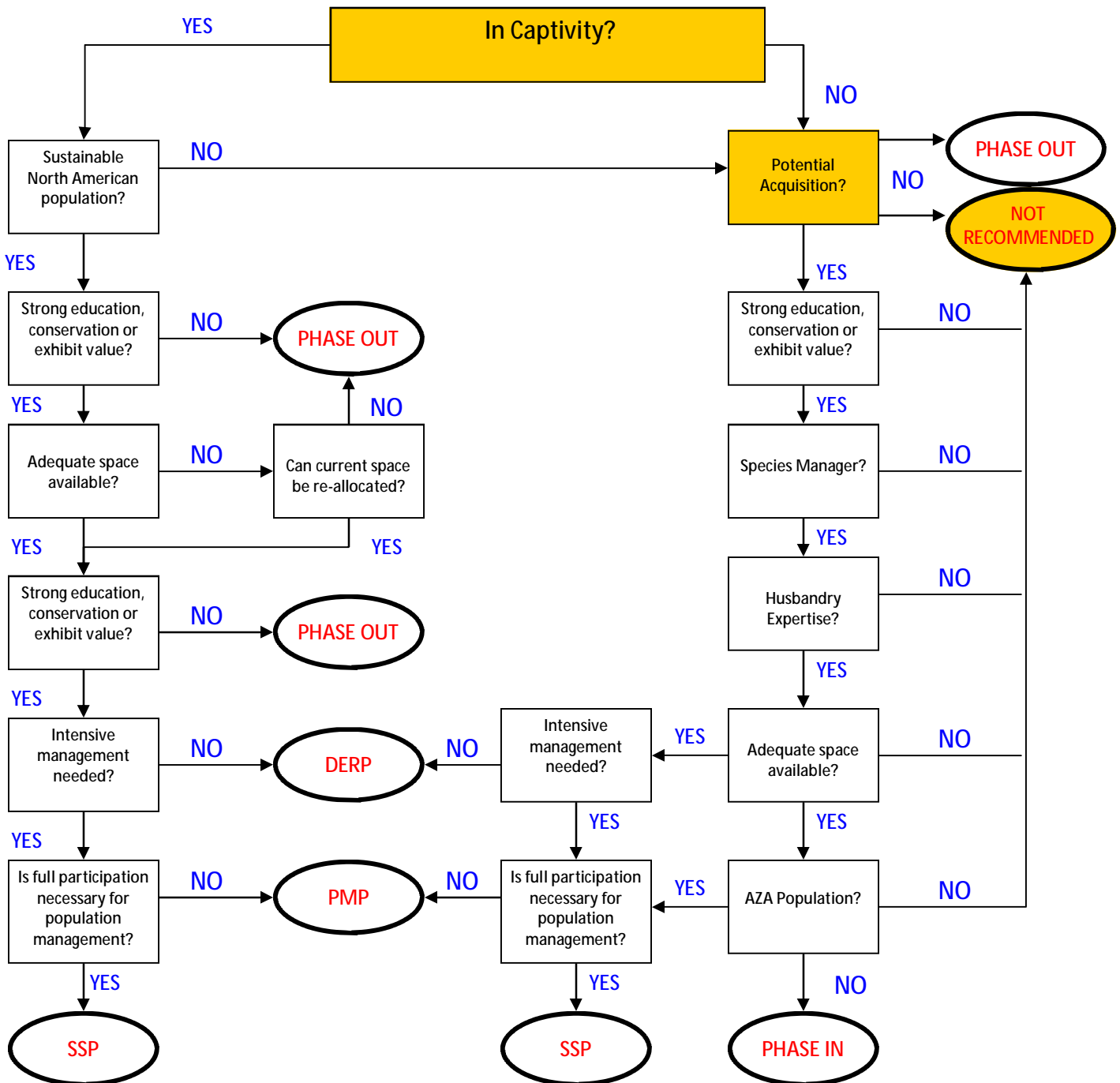


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eritrean warthog *Phacochoerus africanus aeliani*

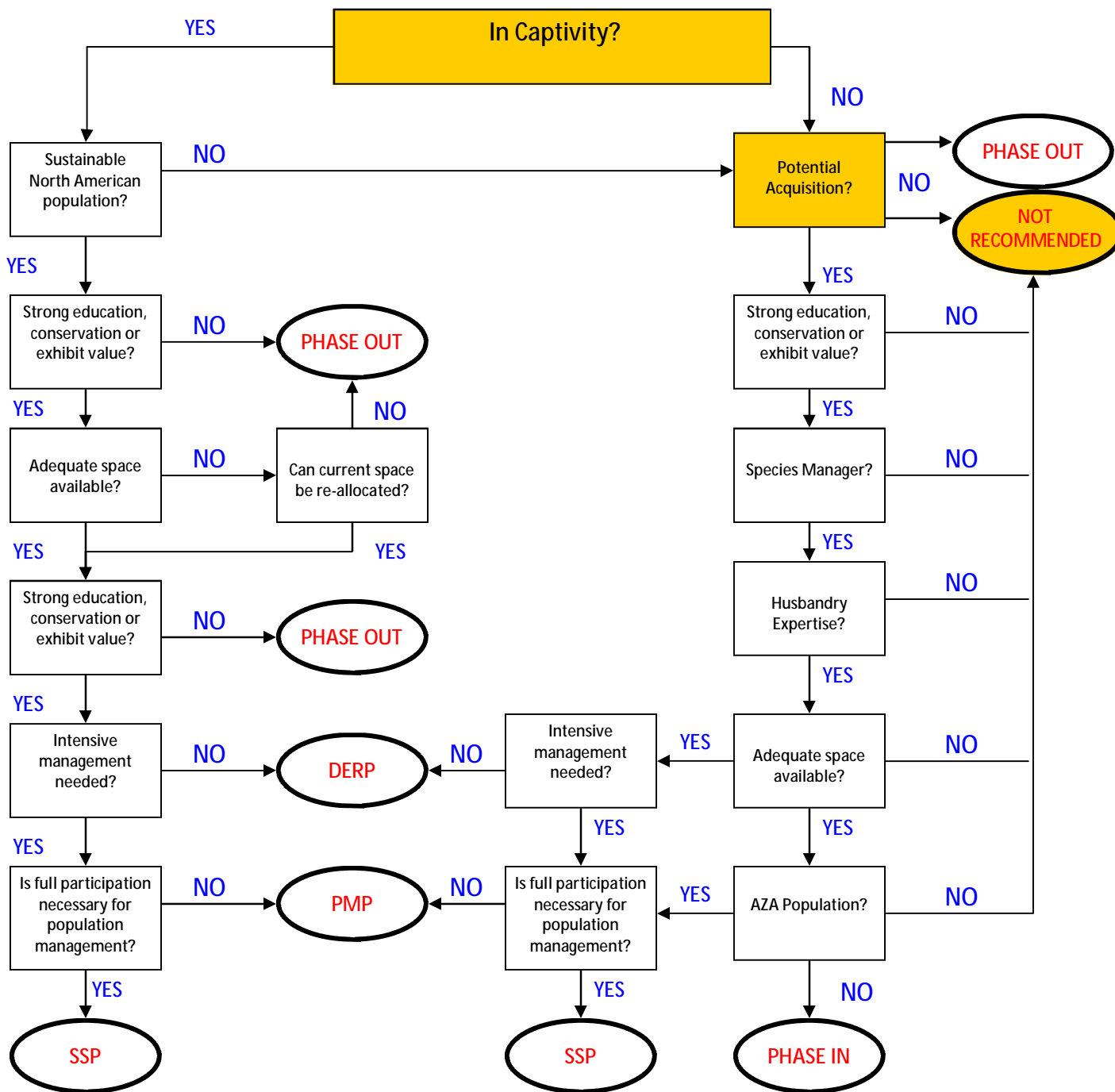


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Northern warthog *Phacochoerus africanus africanus*



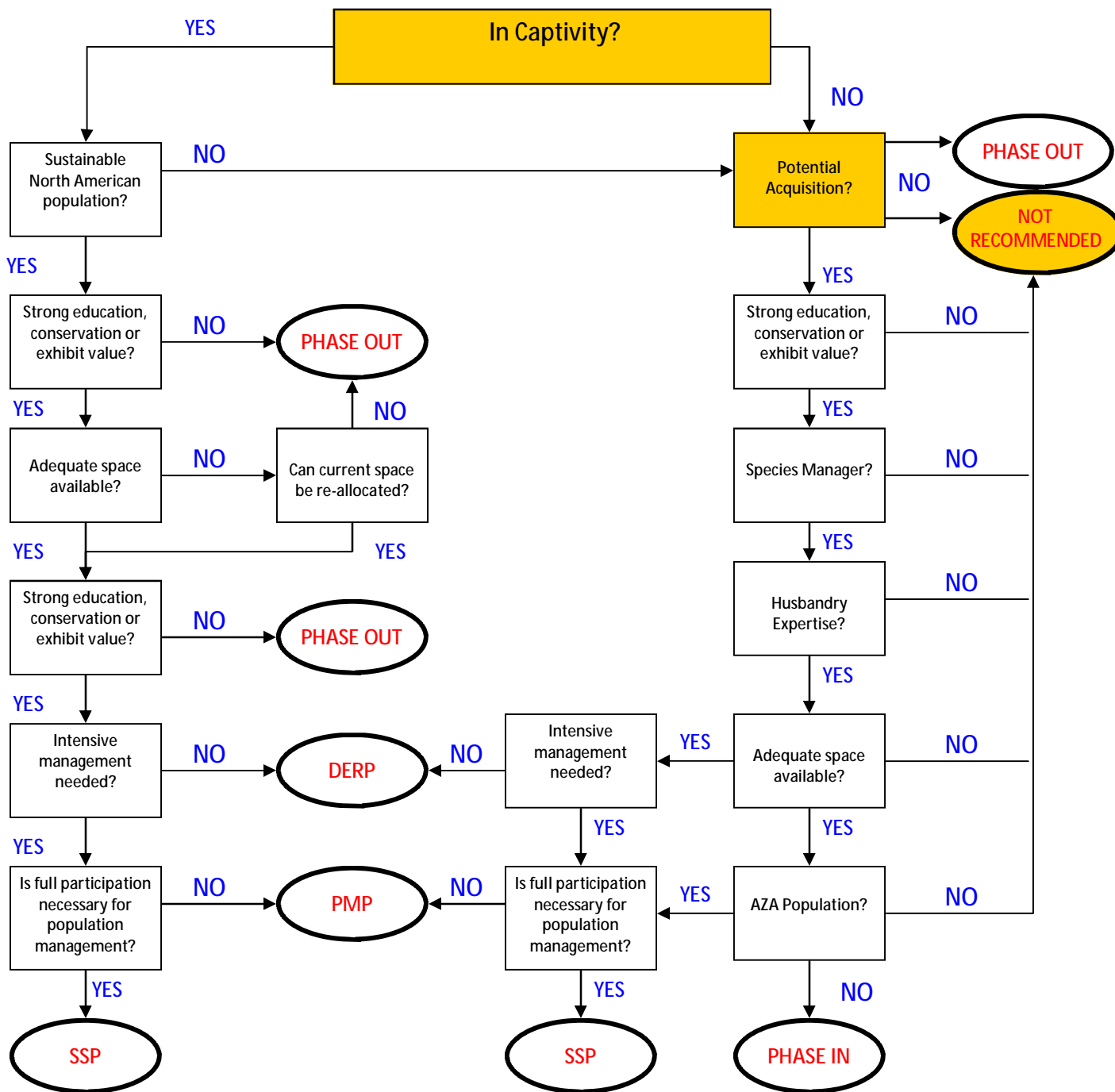
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Warthog

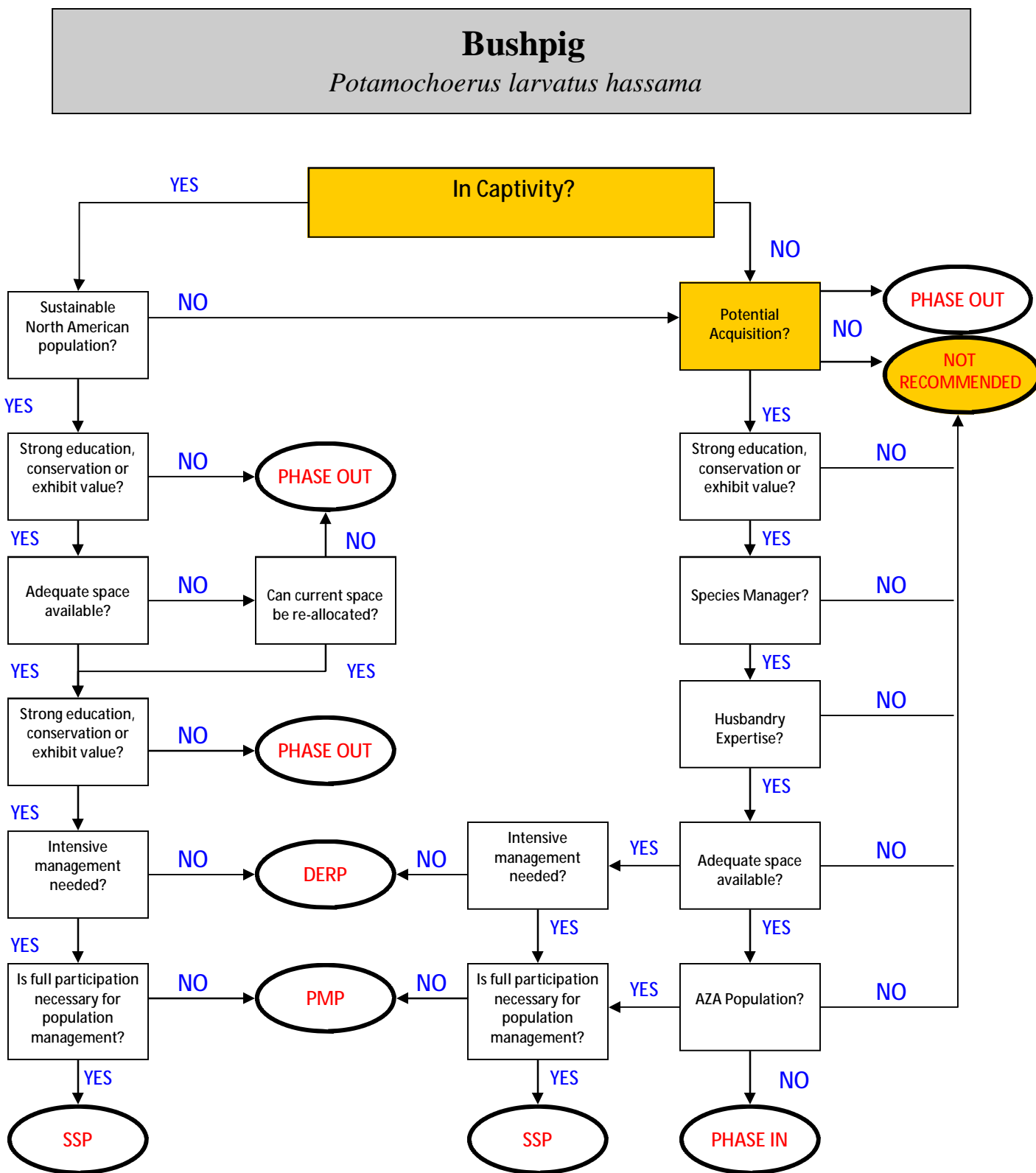
Phacochoerus africanus massaicus



Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree



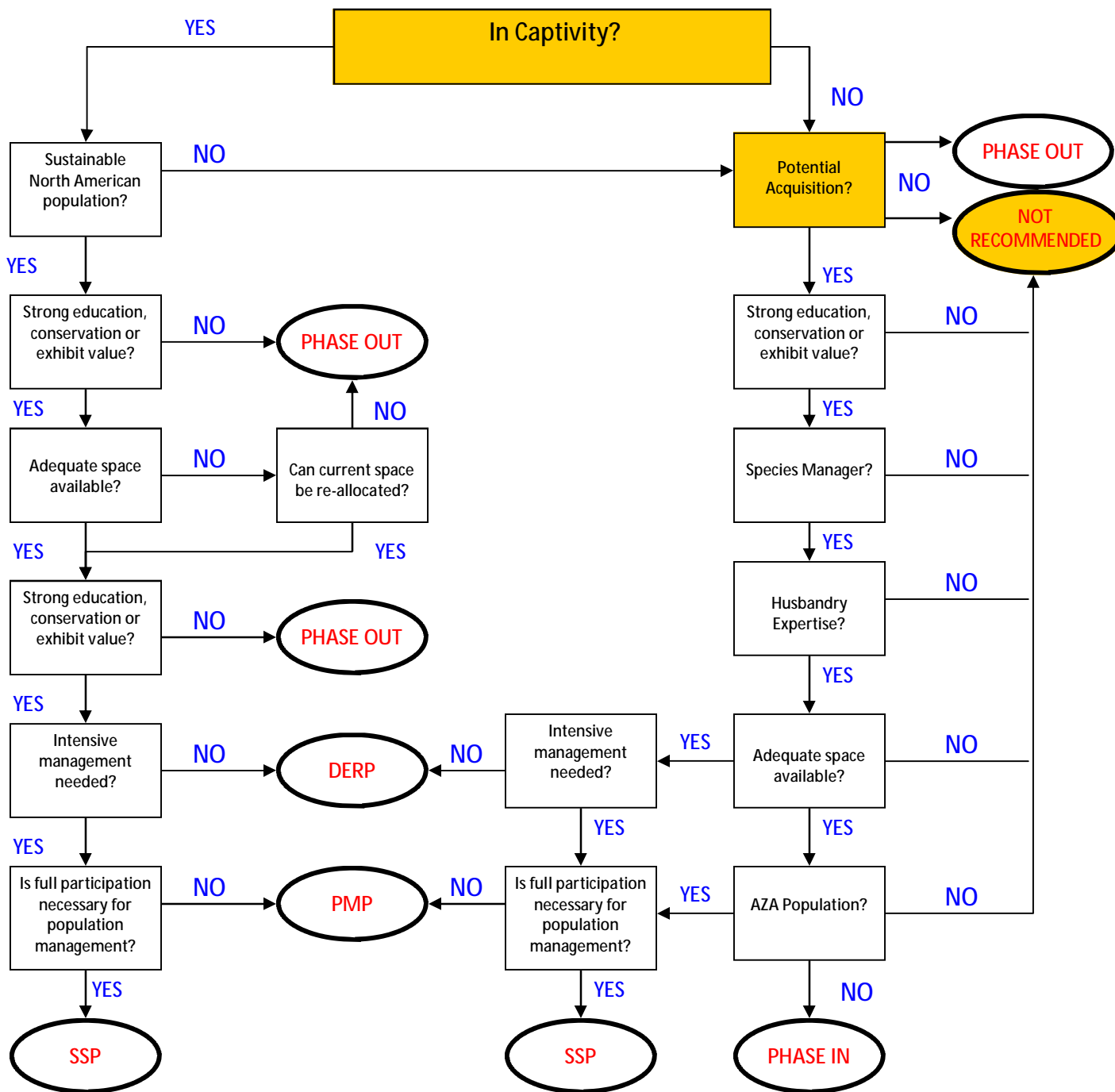
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

East Malagasy bushpig

Potamochoerus larvatus hova

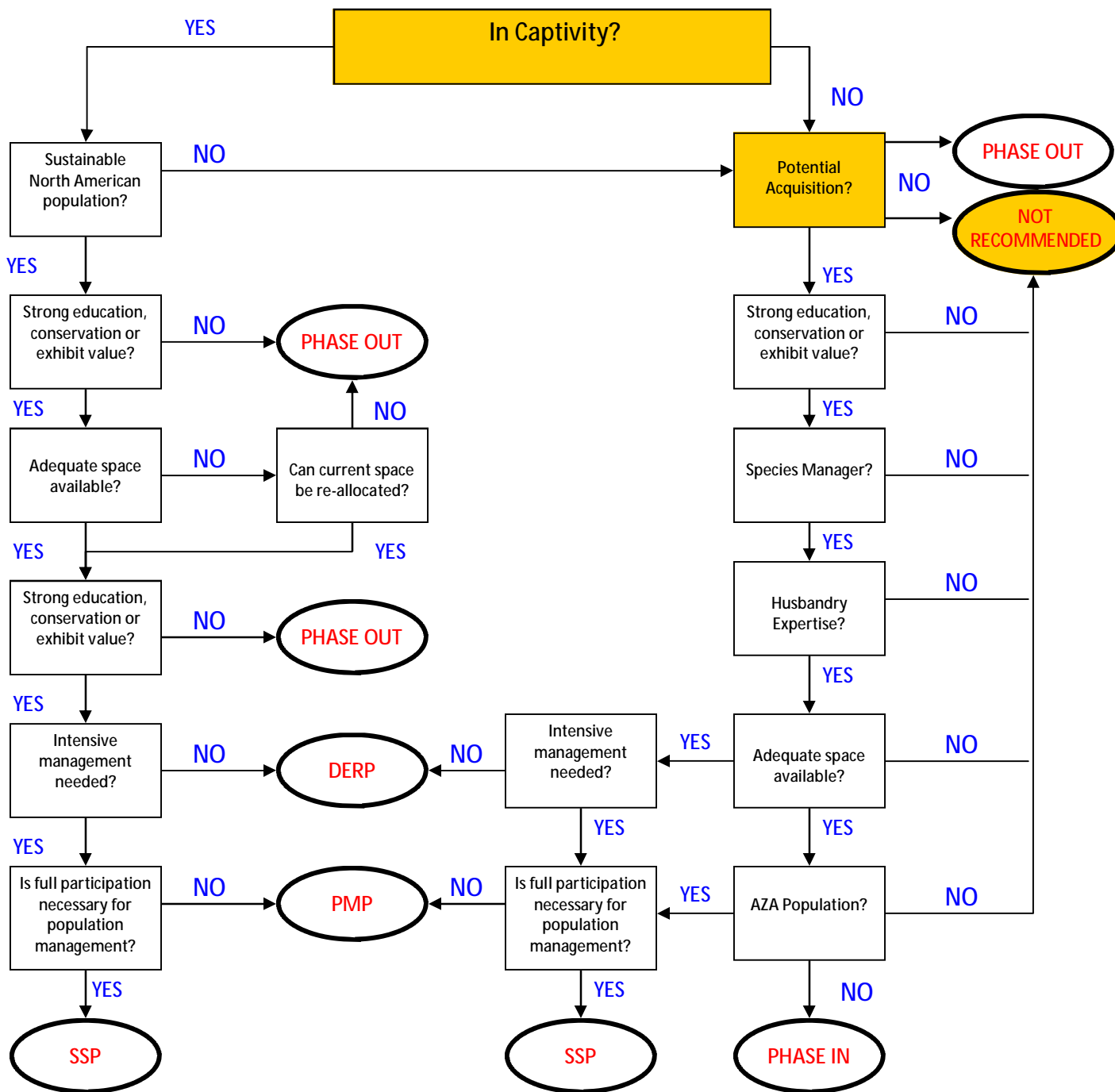


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

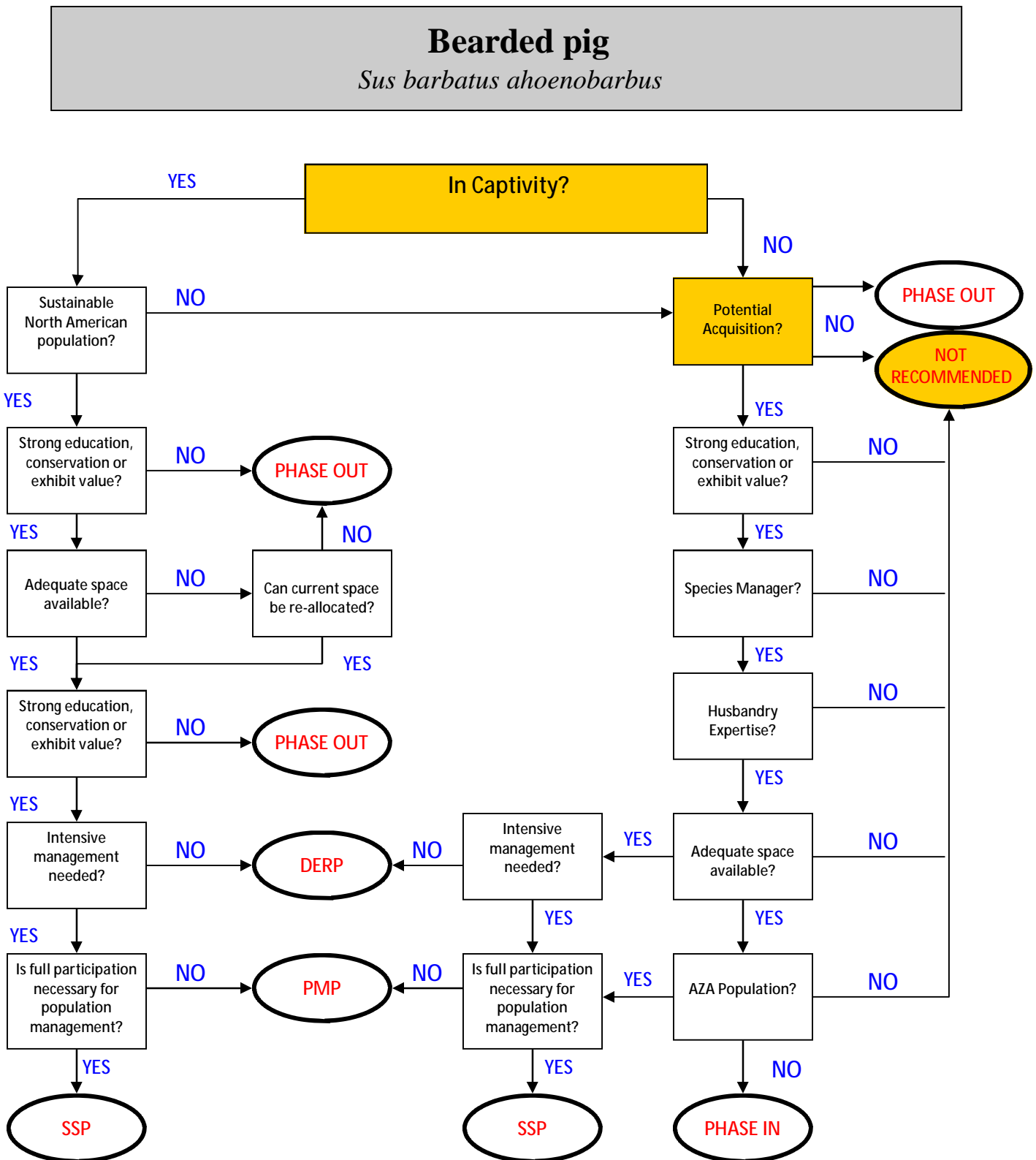
Malagasy bushpig *Potamochoerus larvatus larvatus*



Current Program:

Revised for 2008 RCP

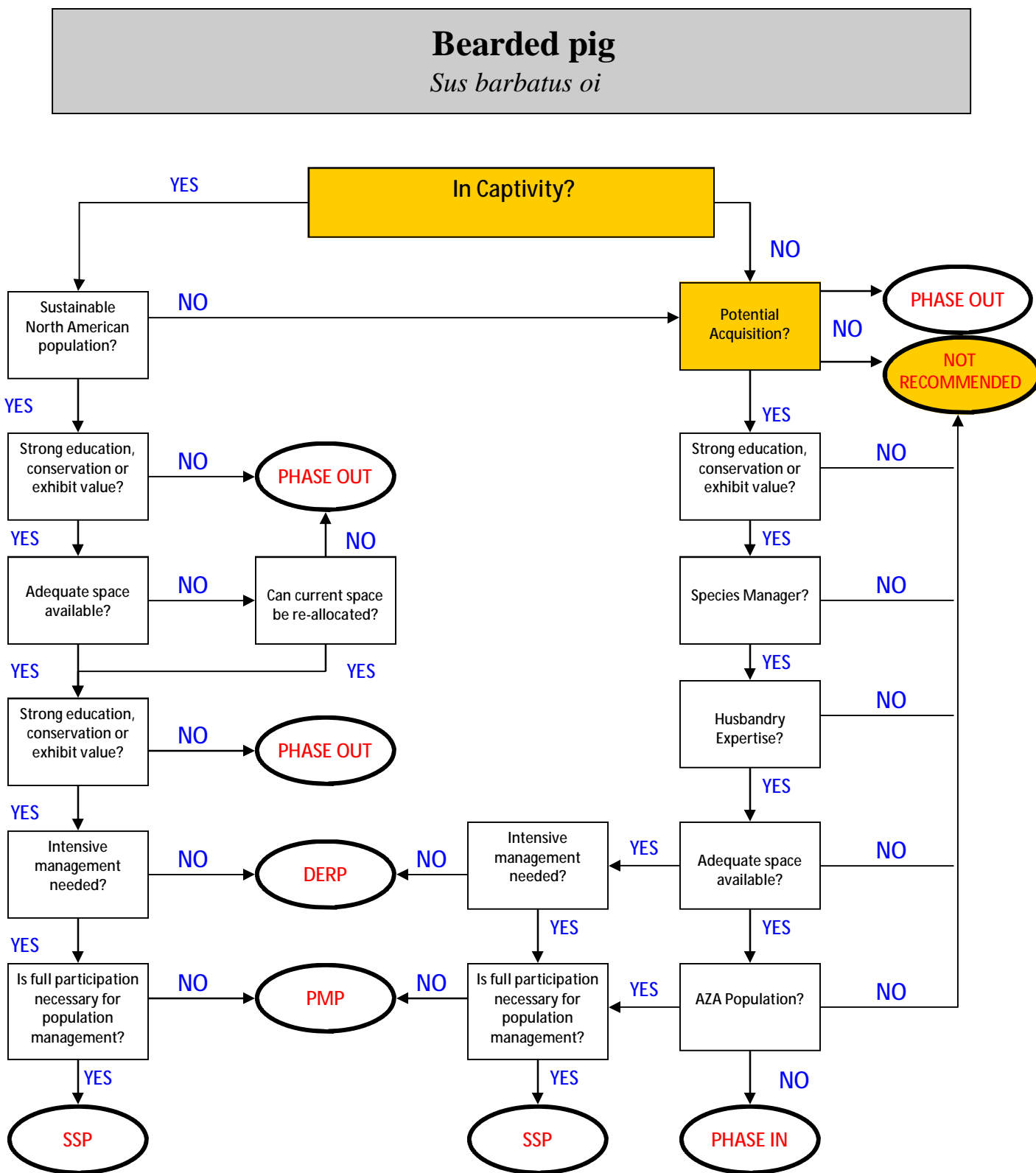
Wild Pig, Peccary and Hippo TAG Management Program Decision Tree



Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree



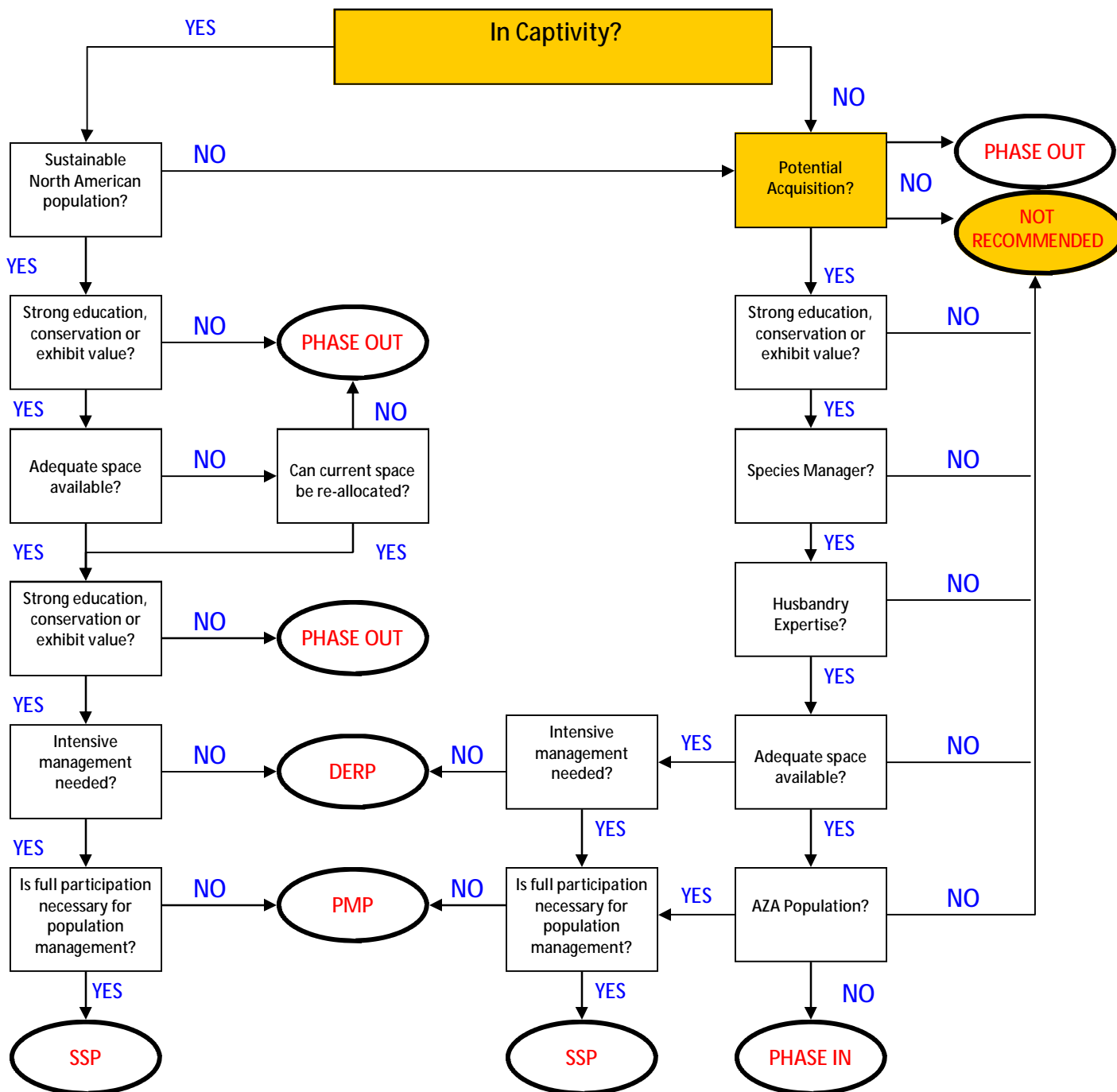
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Negros Island warty pig

Sus cebifrons negrinus

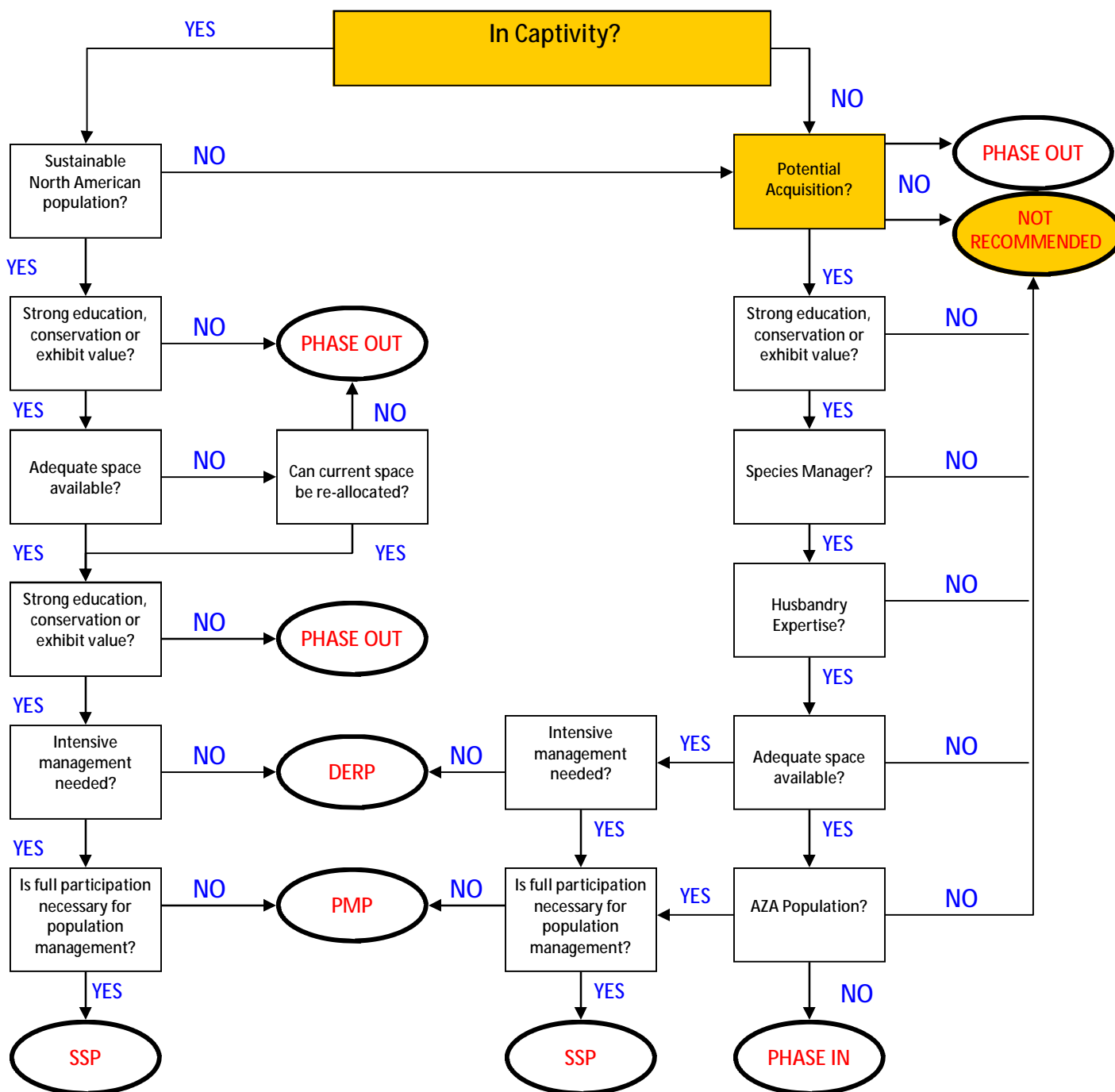


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Sulawesi warty pig *Sus celebensis*

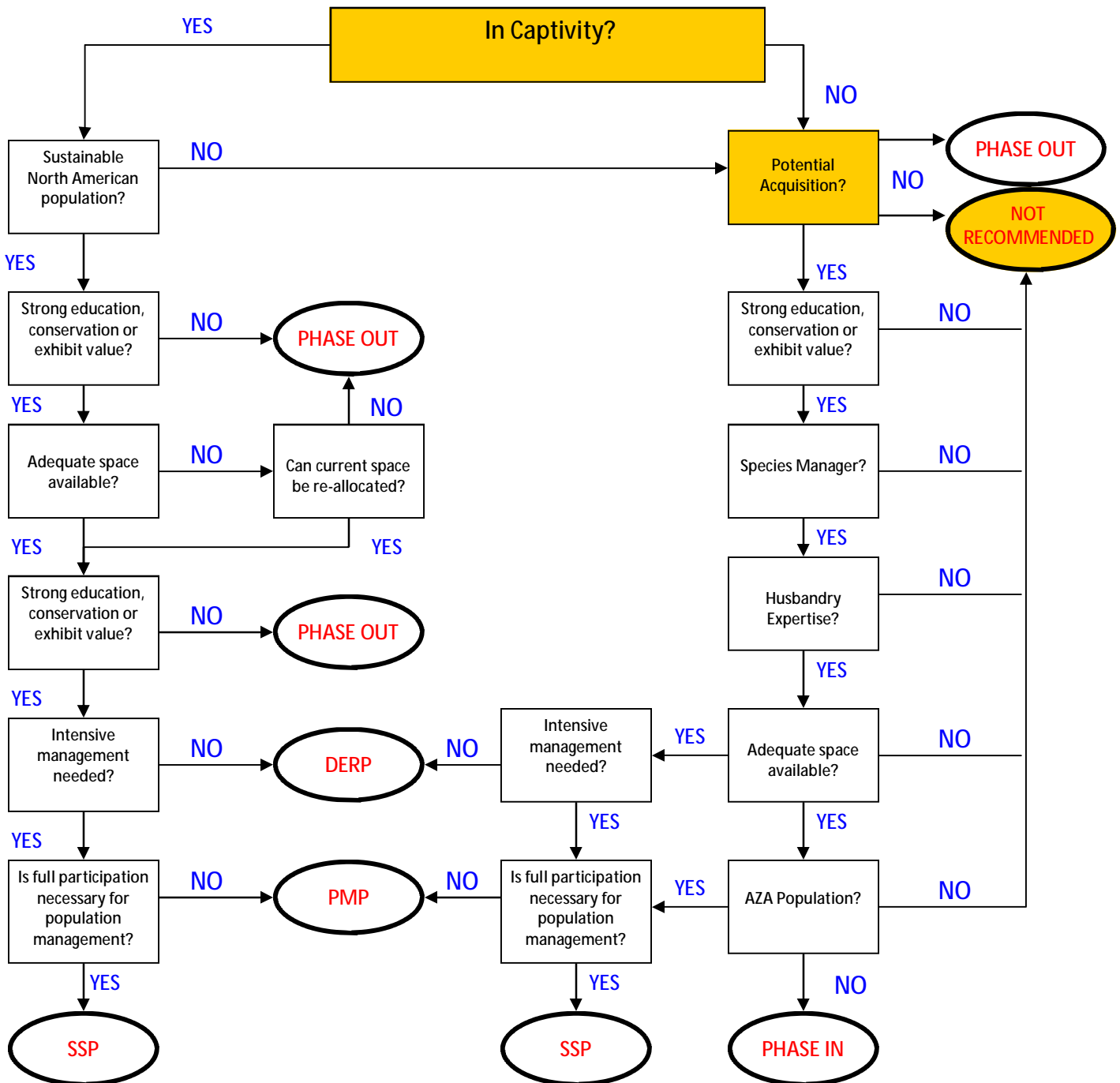


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

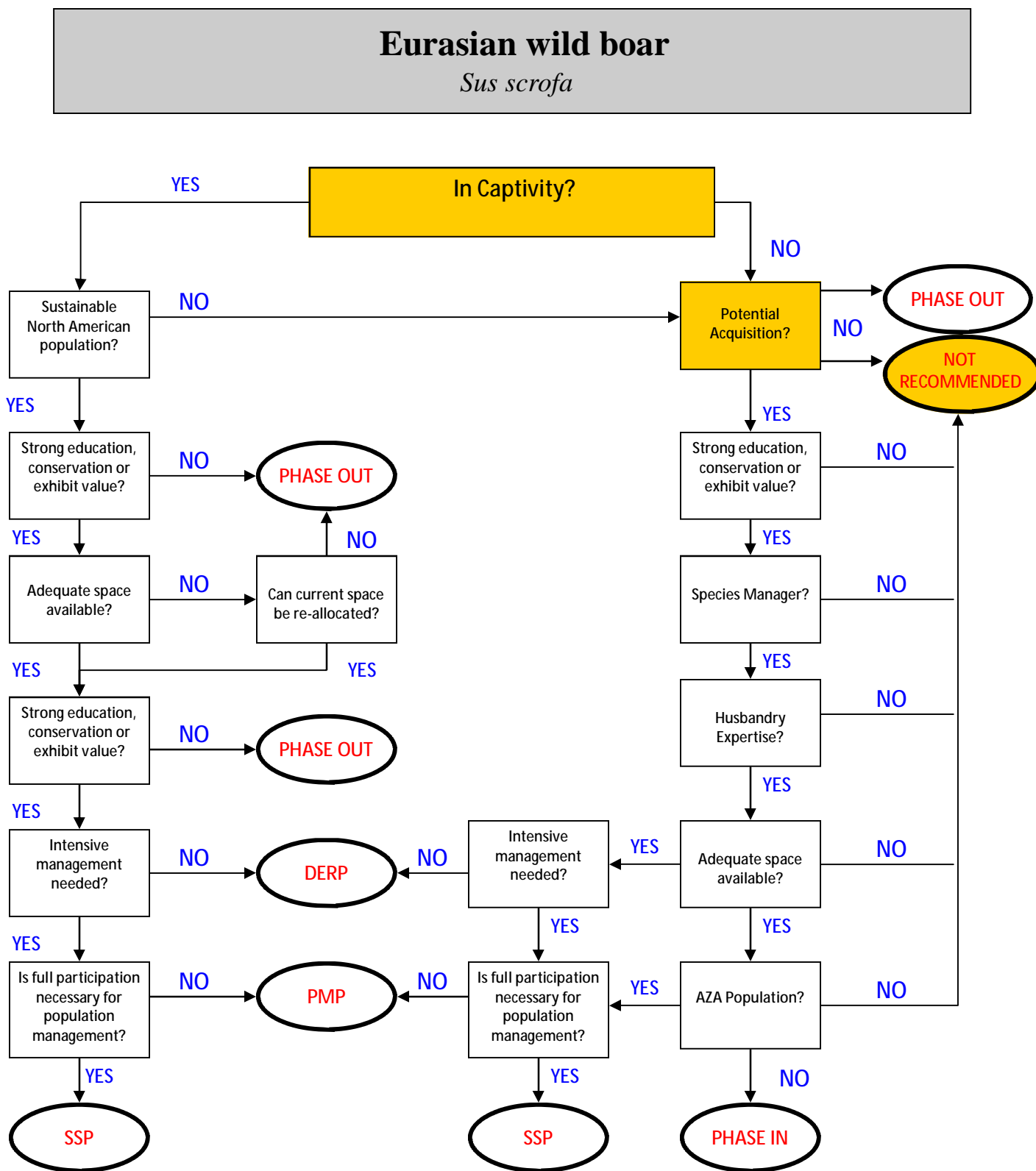
Philippine warty pig *Sus philippensis*



Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree



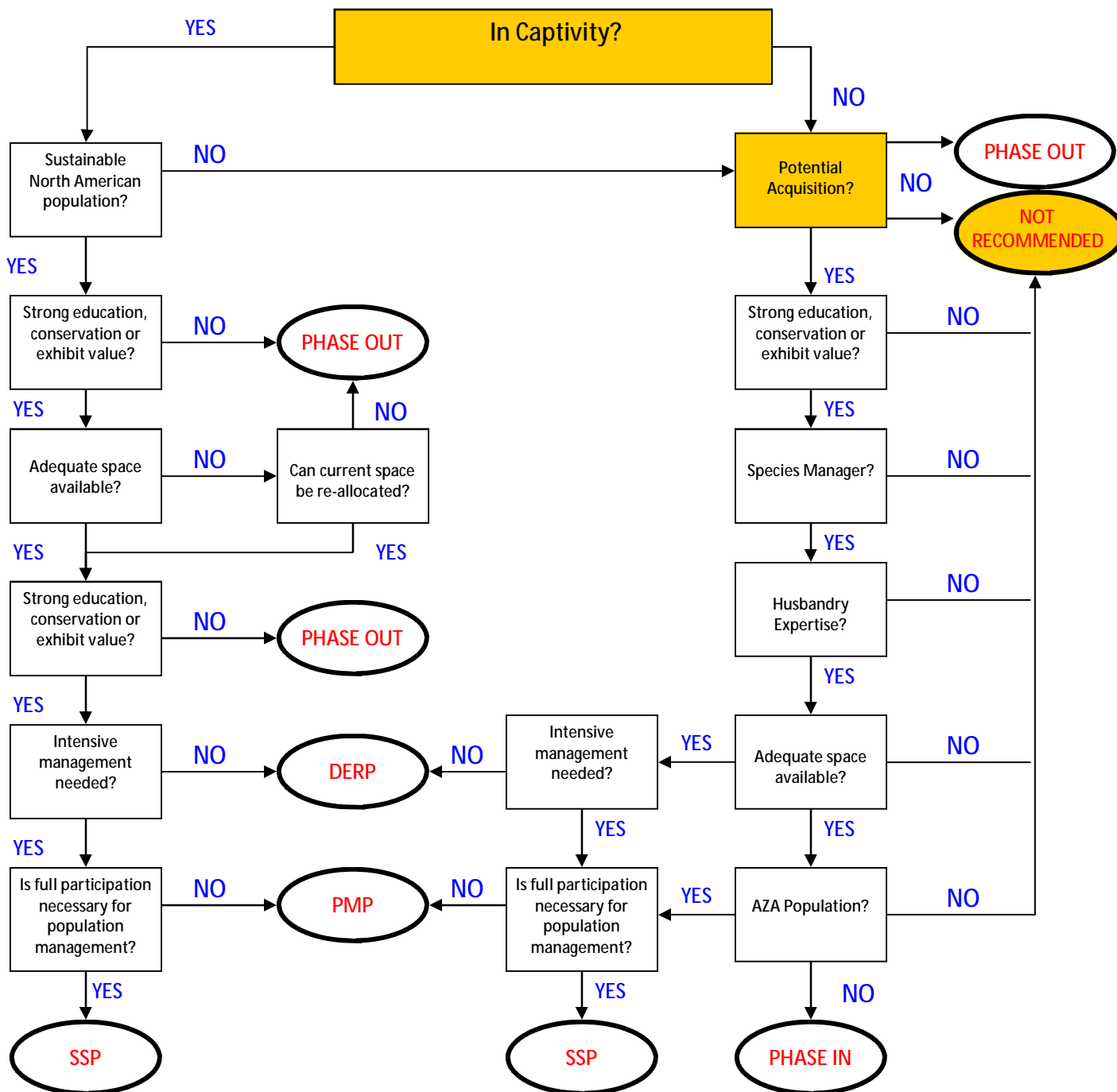
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild pig

Sus scrofa affinis



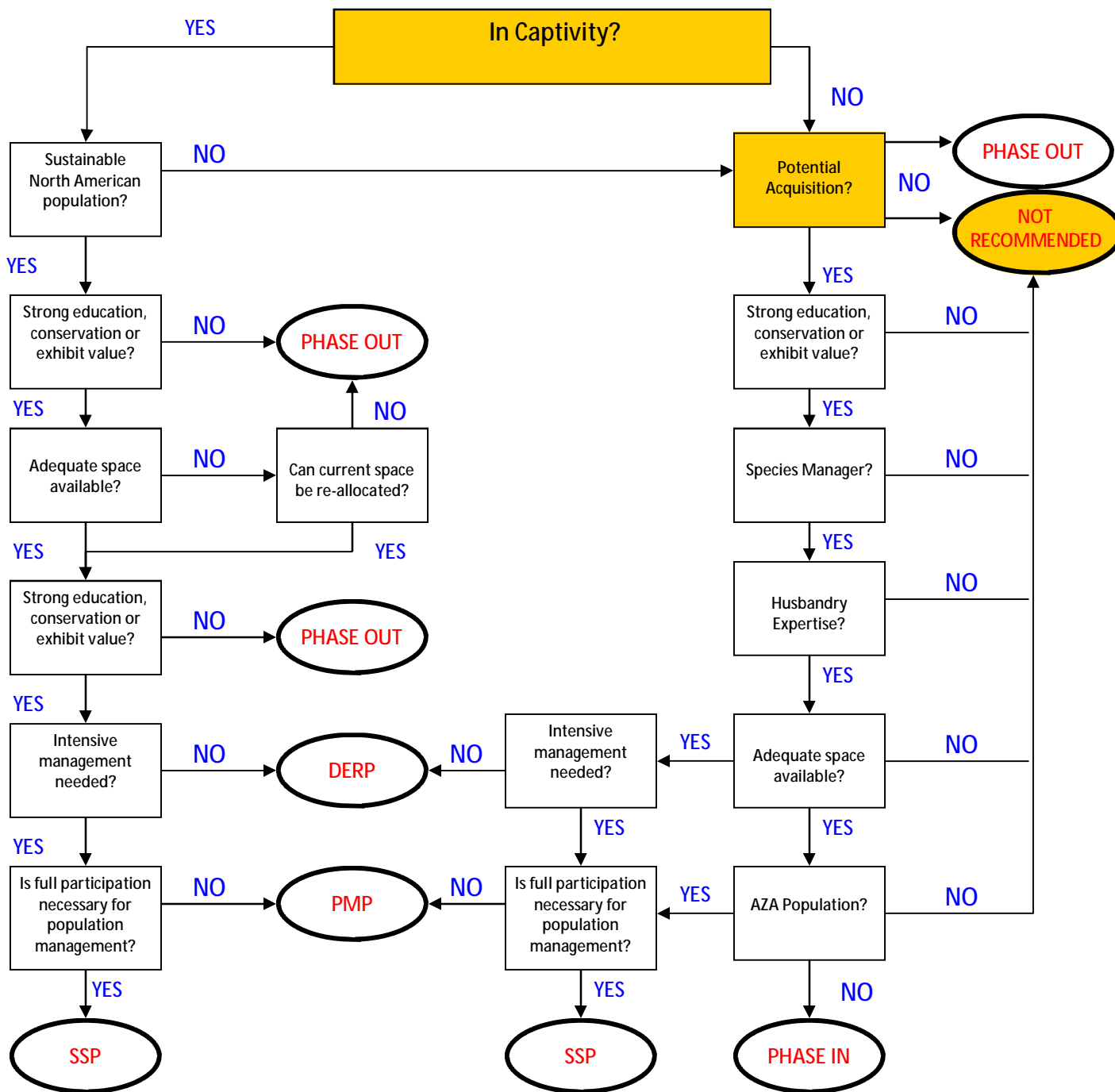
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild boar

Sus scrofa algira



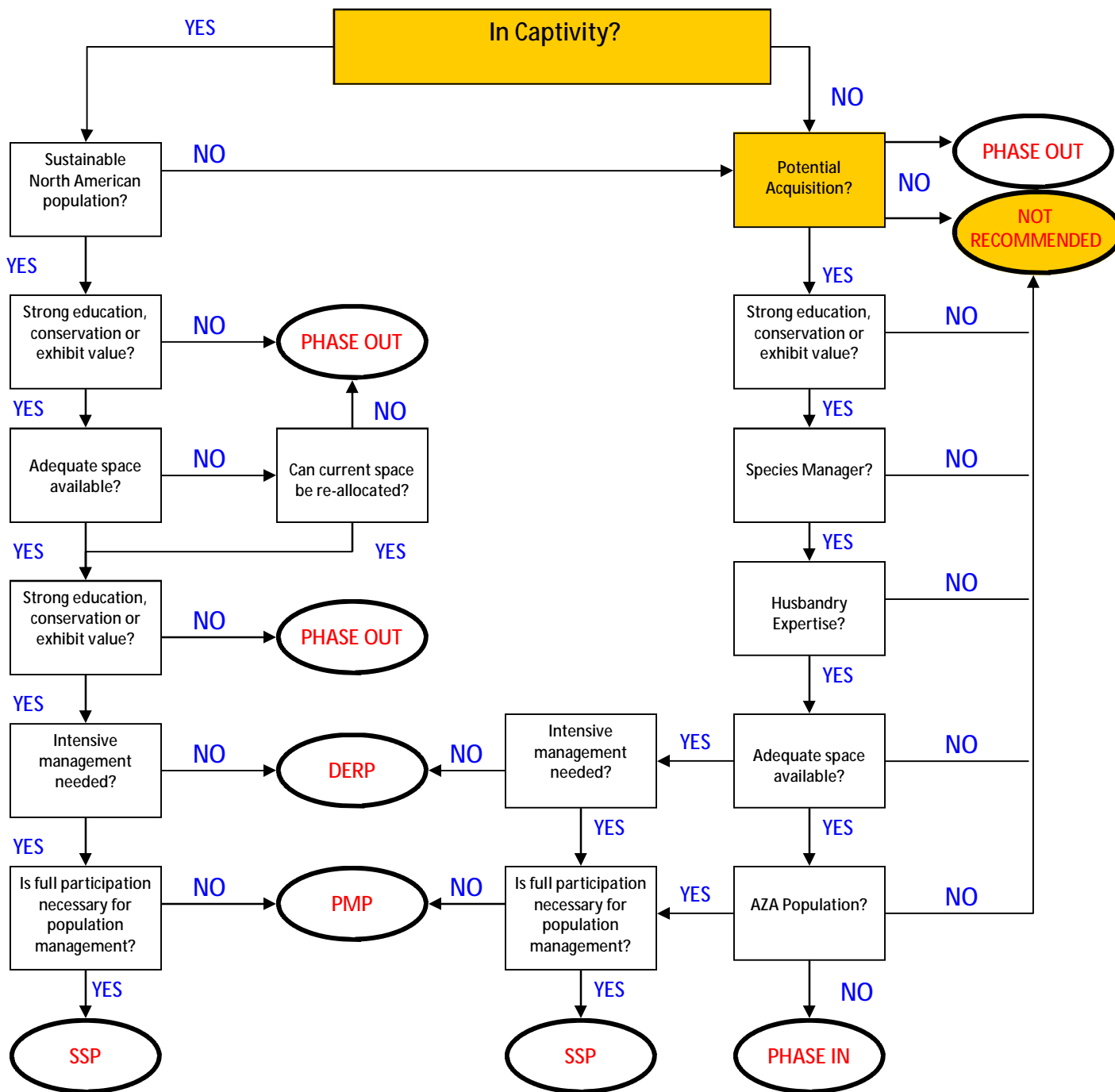
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild pig

Sus scrofa attila



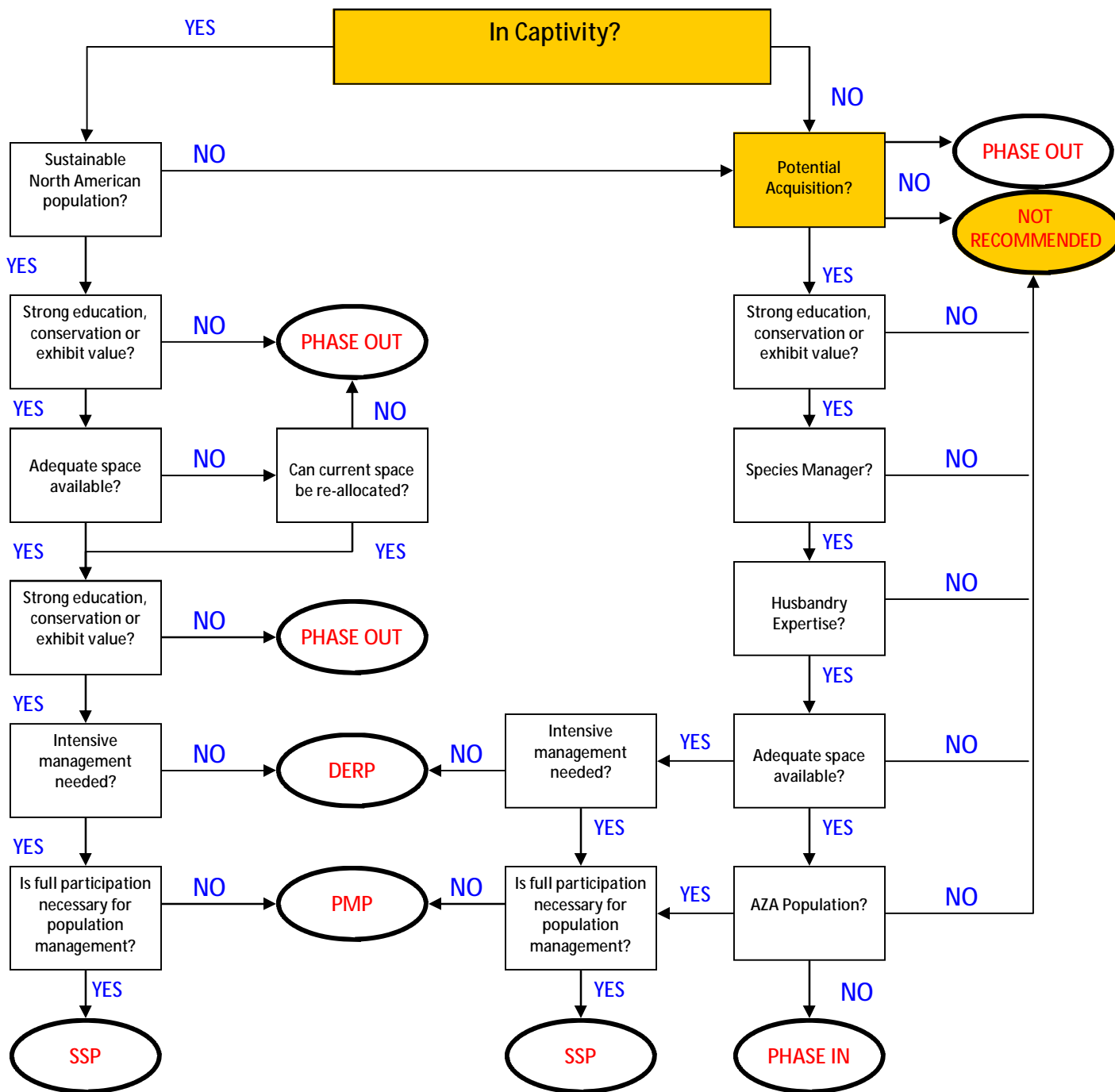
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

European wild boar

Sus scrofa coreanus



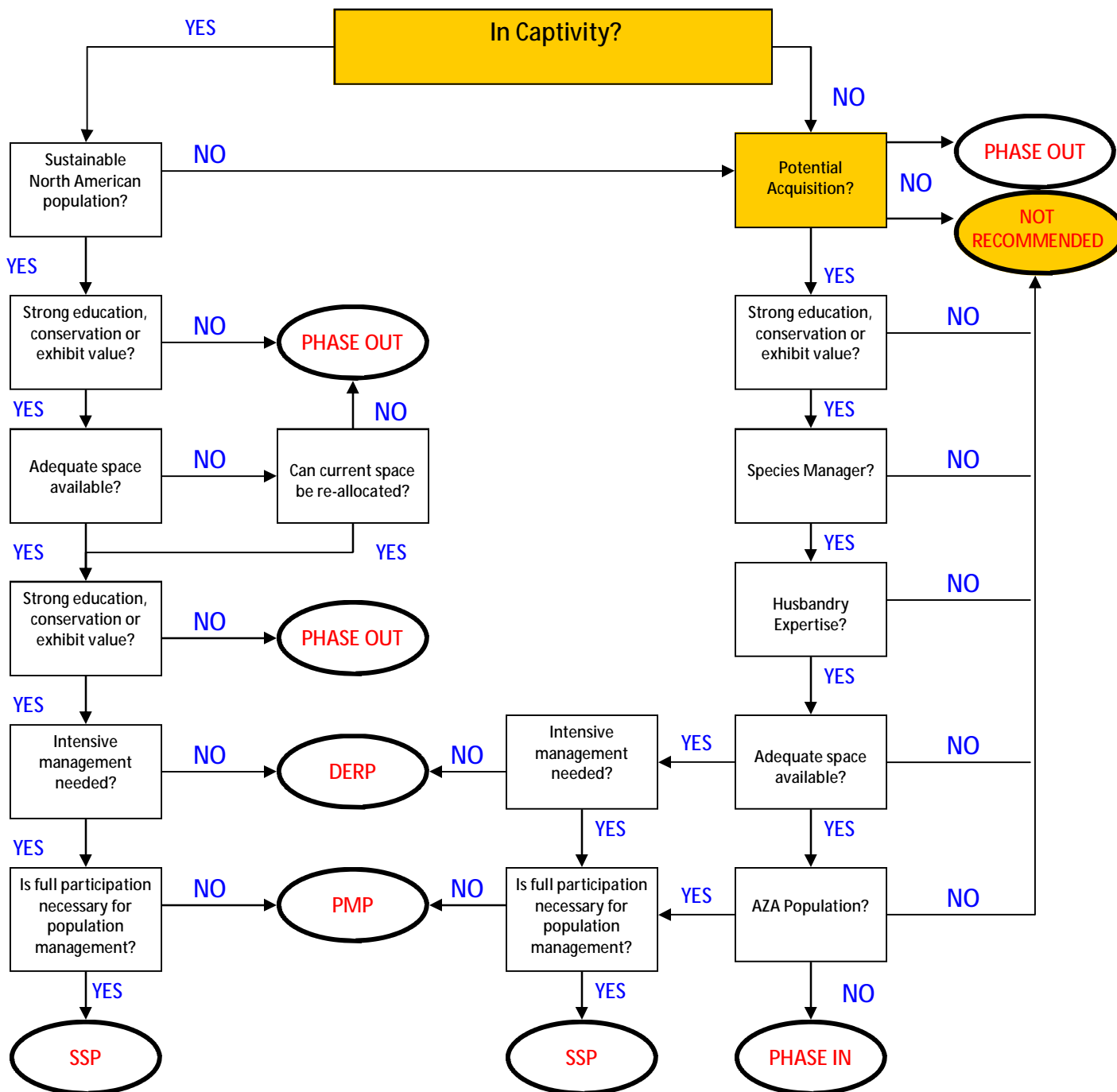
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild pig

Sus scrofa cristatus



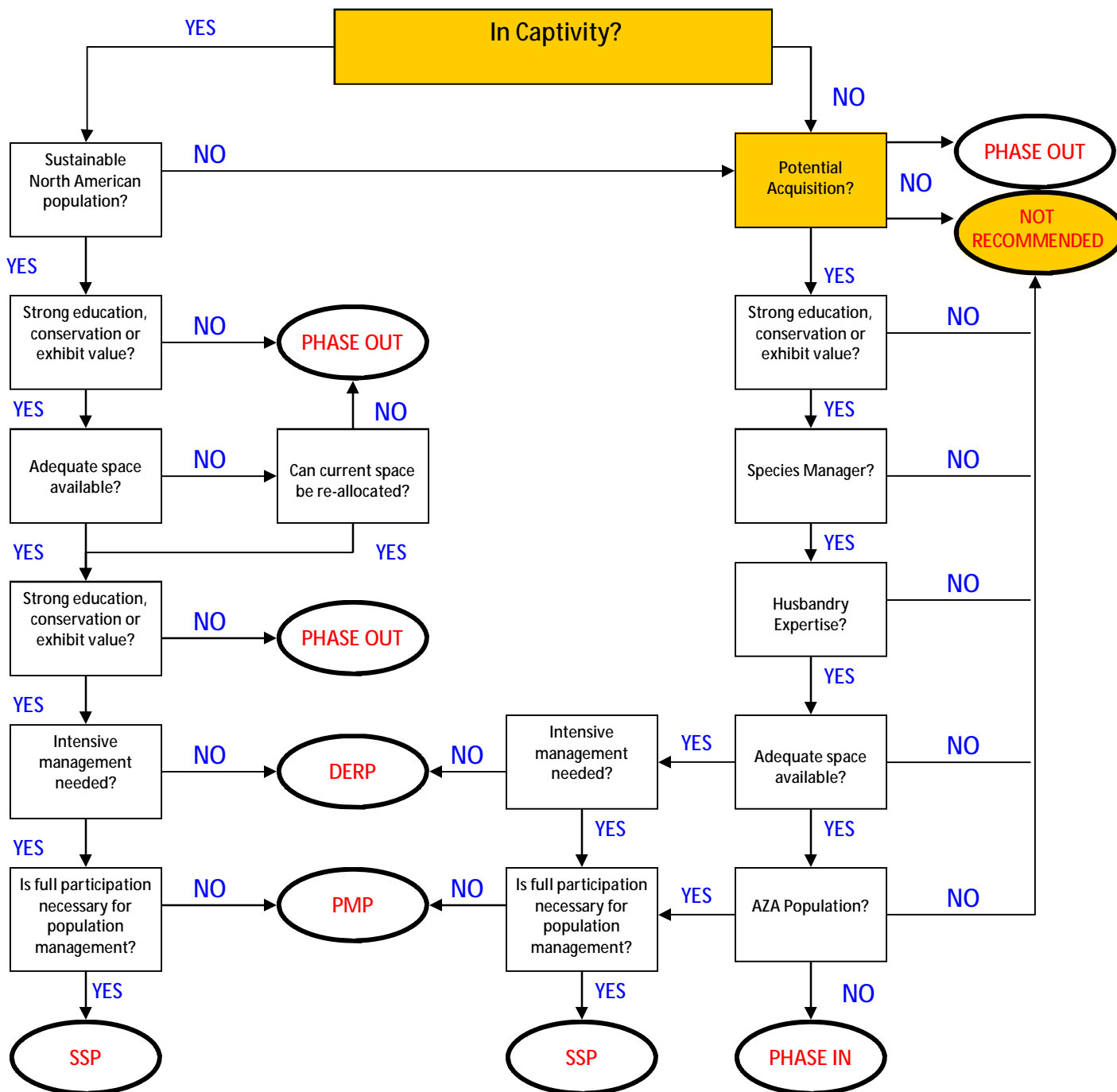
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild pig

Sus scrofa davidi



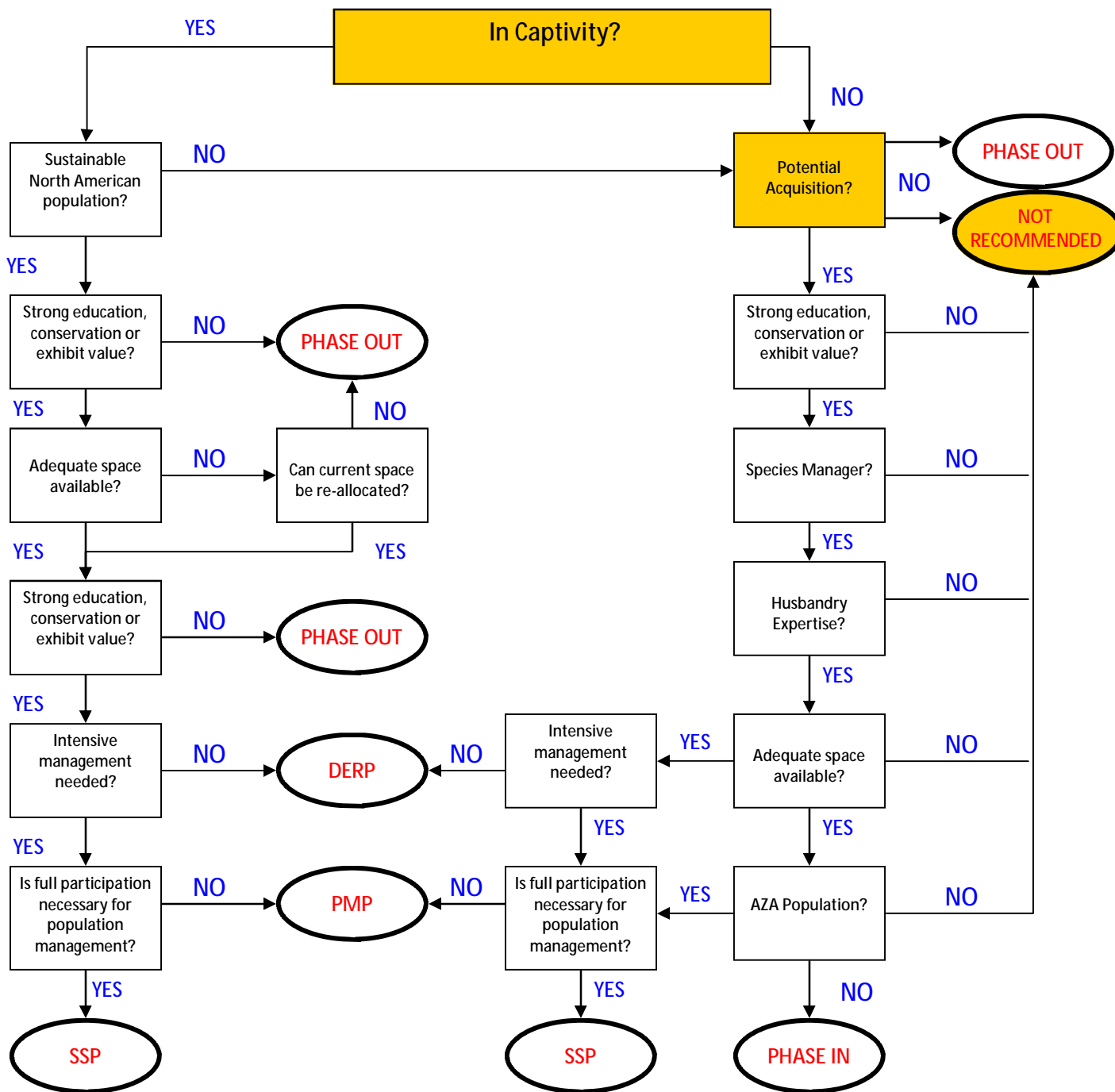
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild boar

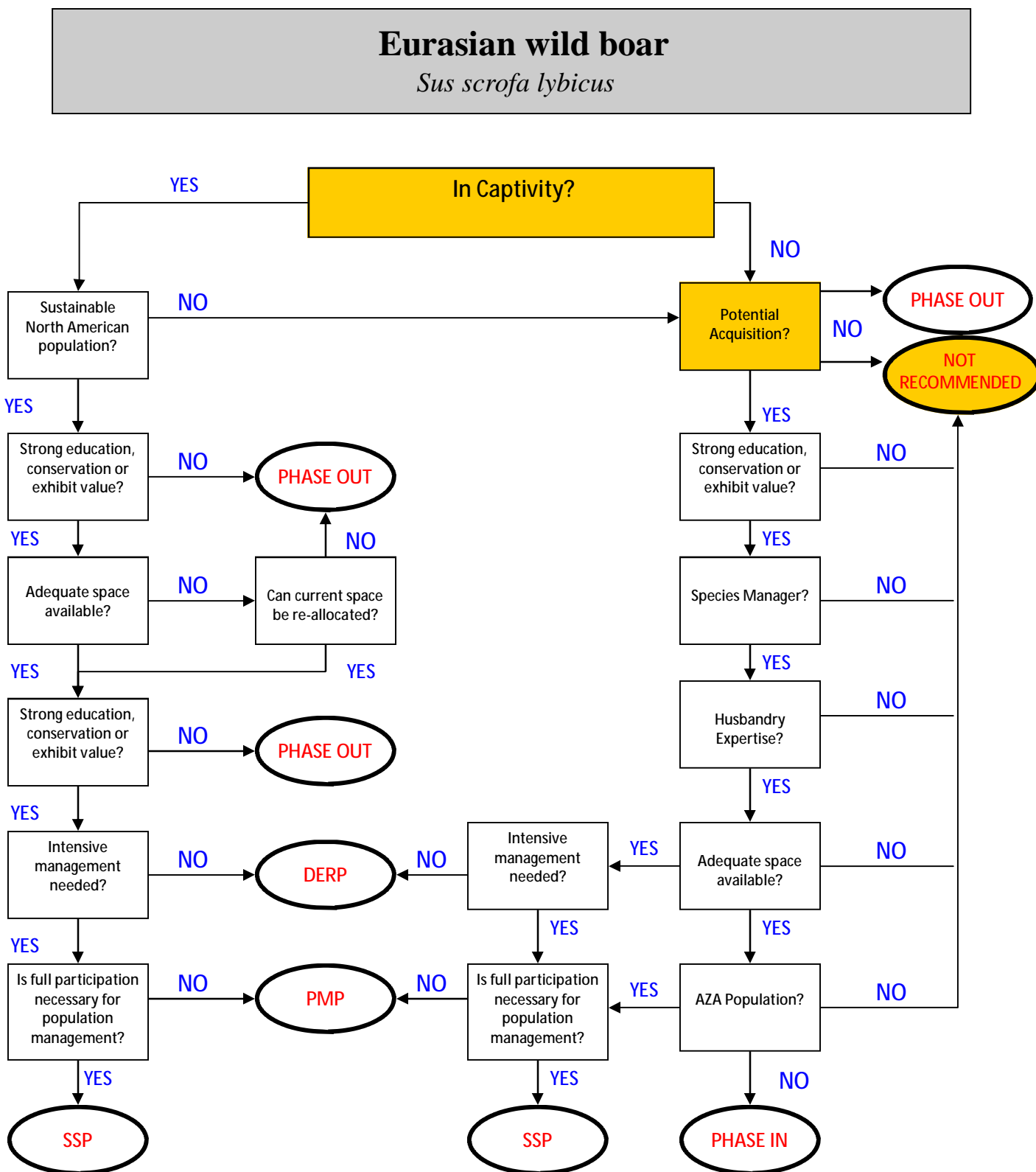
Sus scrofa leucomystax



Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree



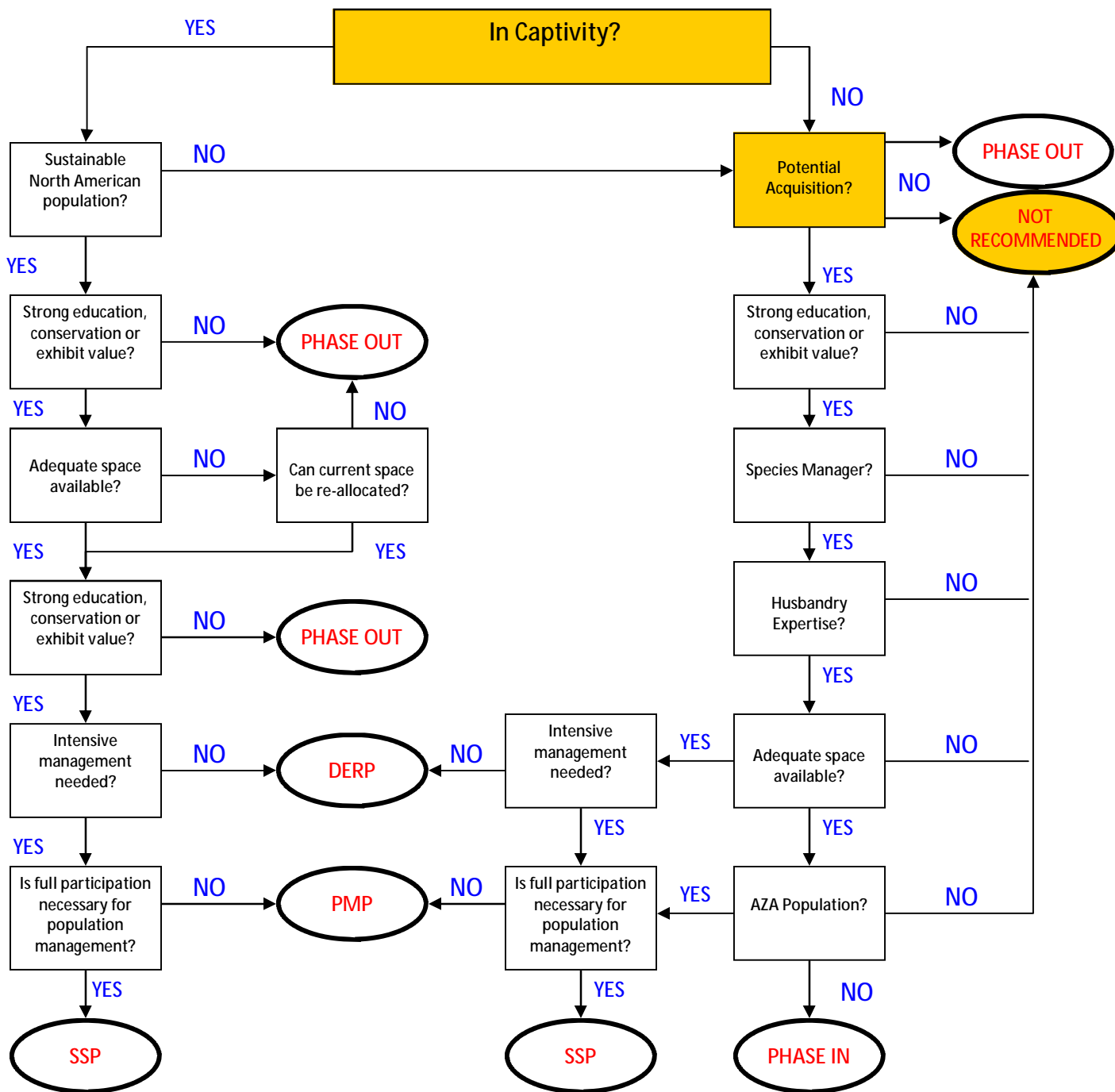
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild boar

Sus scrofa majori



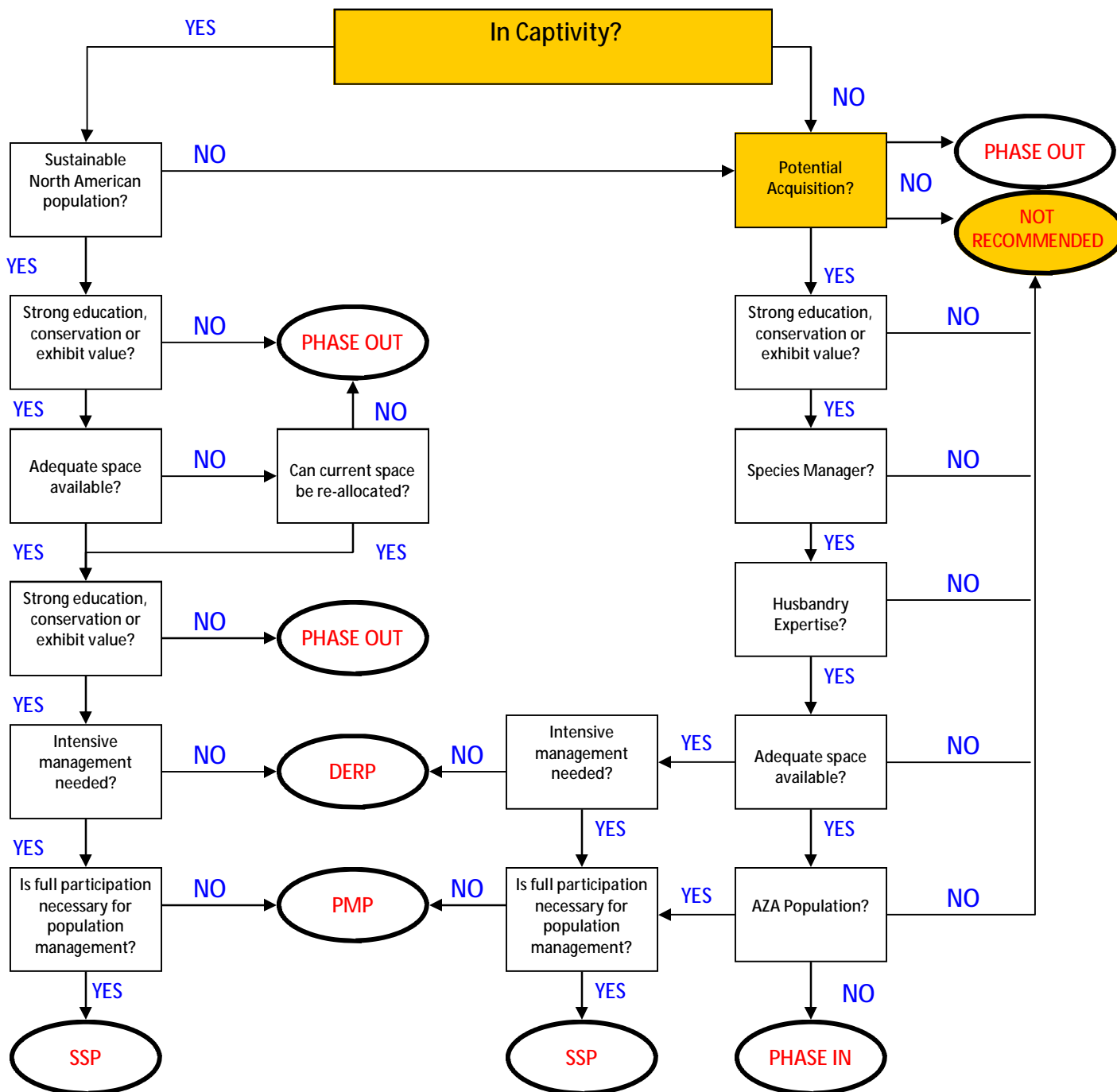
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild boar

Sus scrofa meridionalis

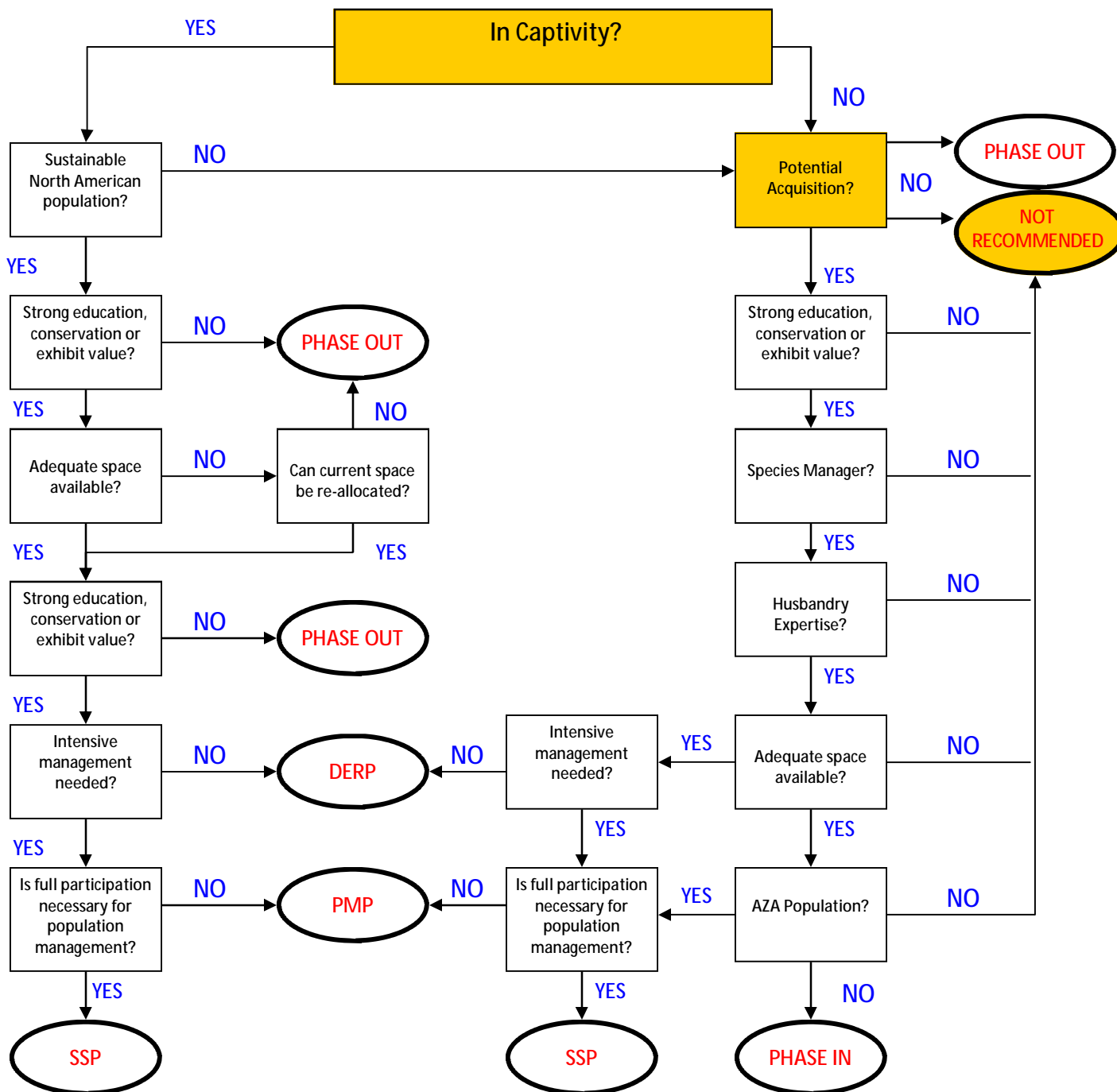


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild pig *Sus scrofa moupinensis*

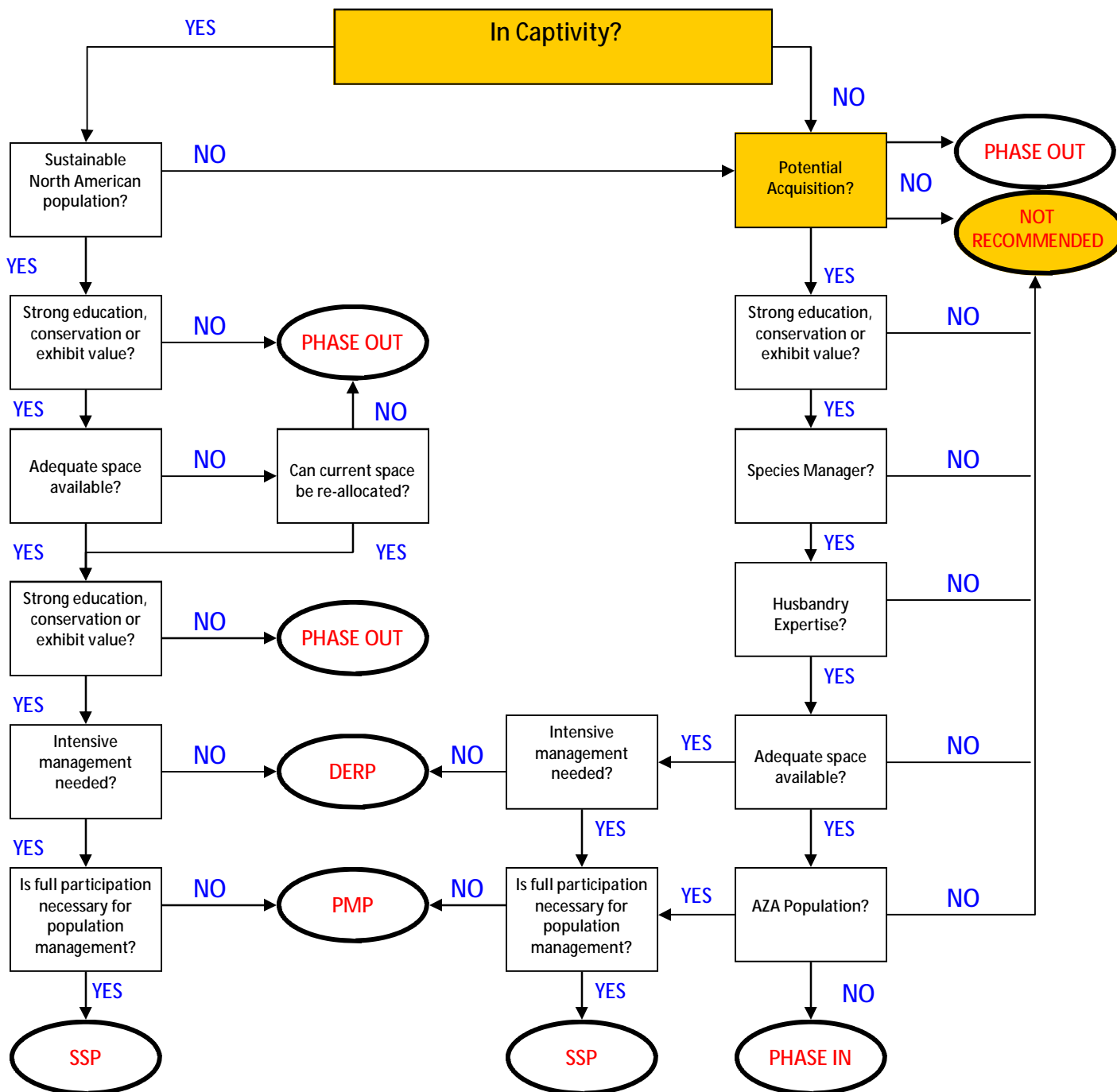


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild pig *Sus scrofa nigripes*



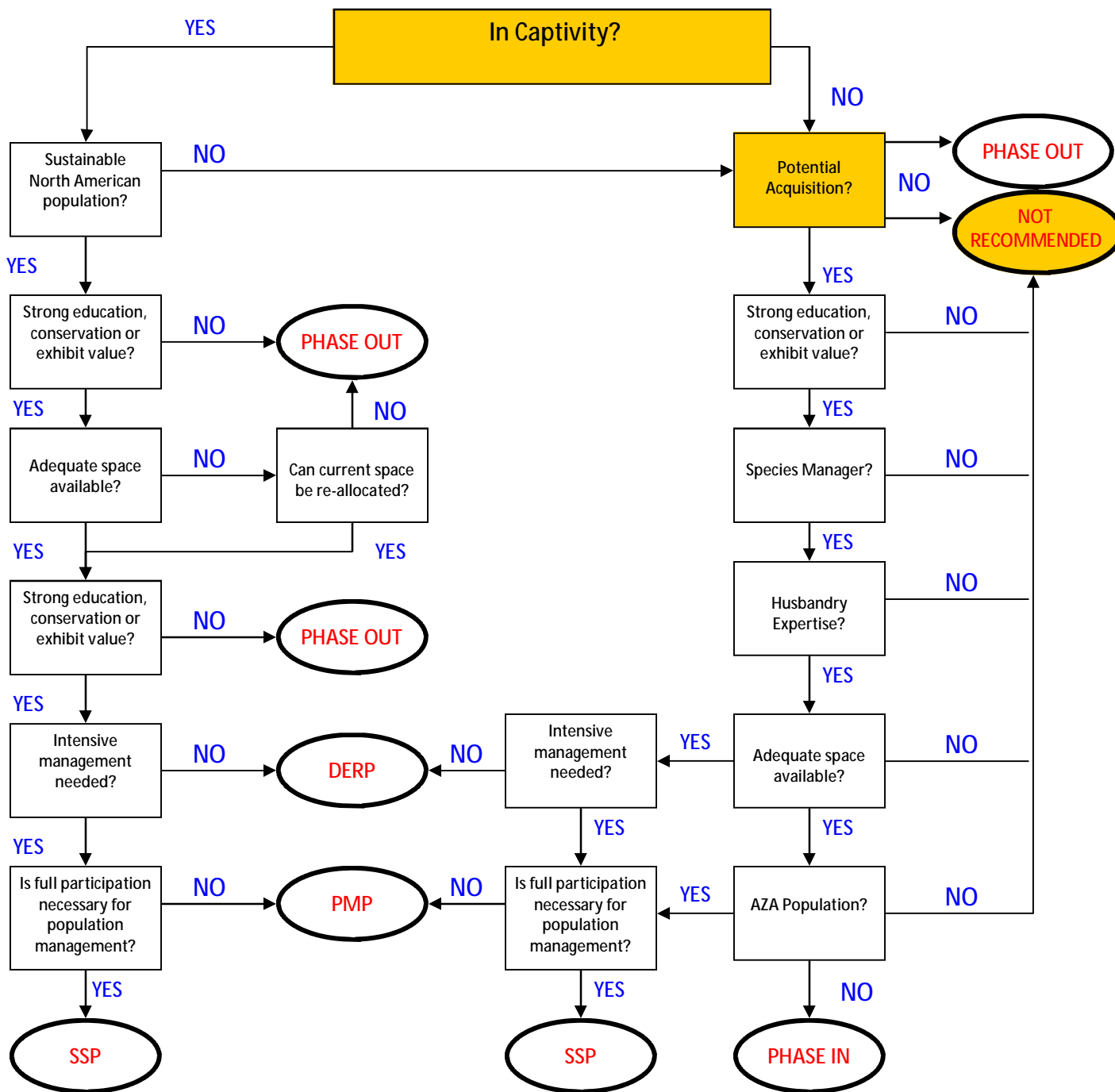
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild boar

Sus scrofa riukiuanus



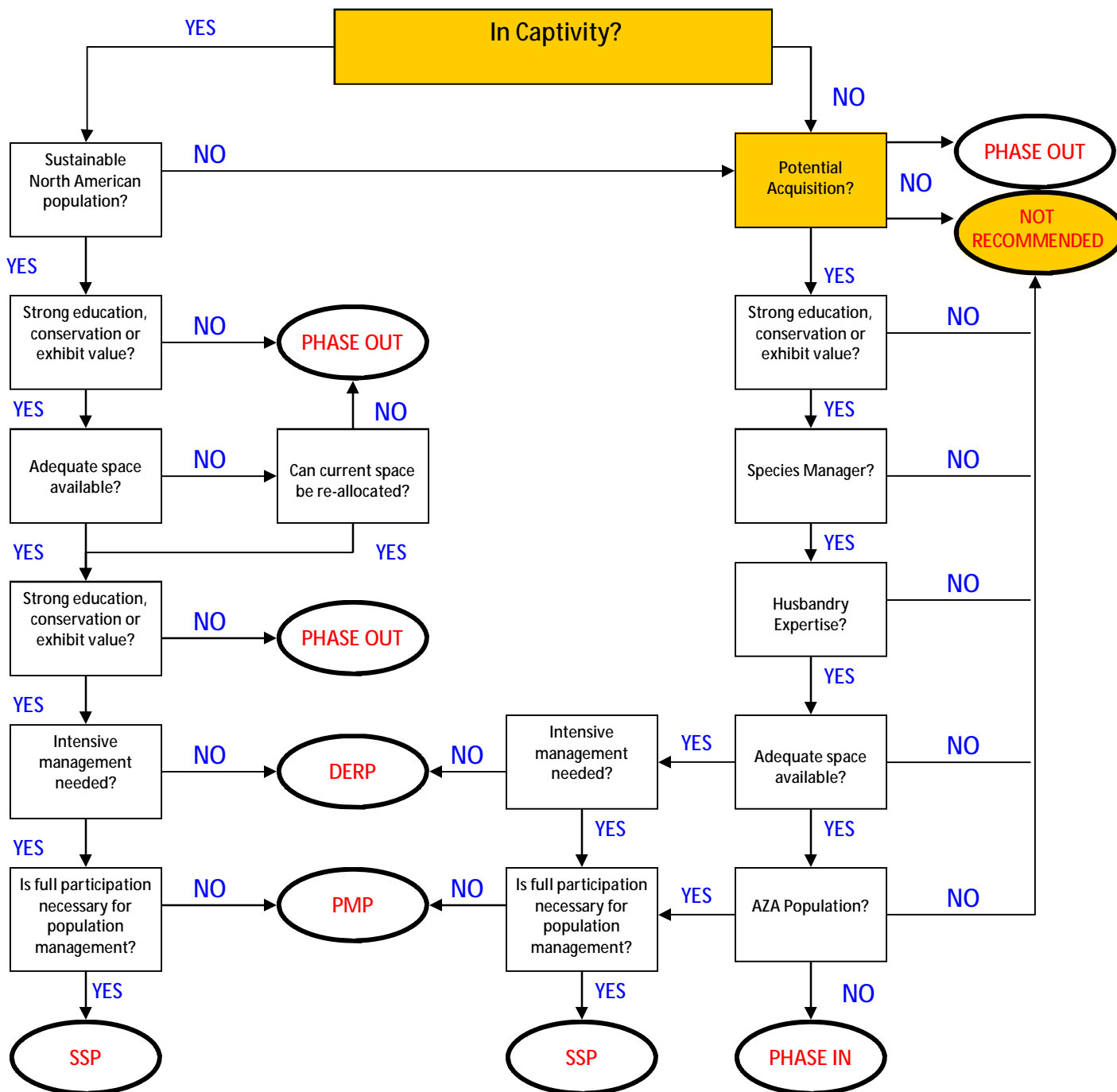
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild pig

Sus scrofa sibiricus



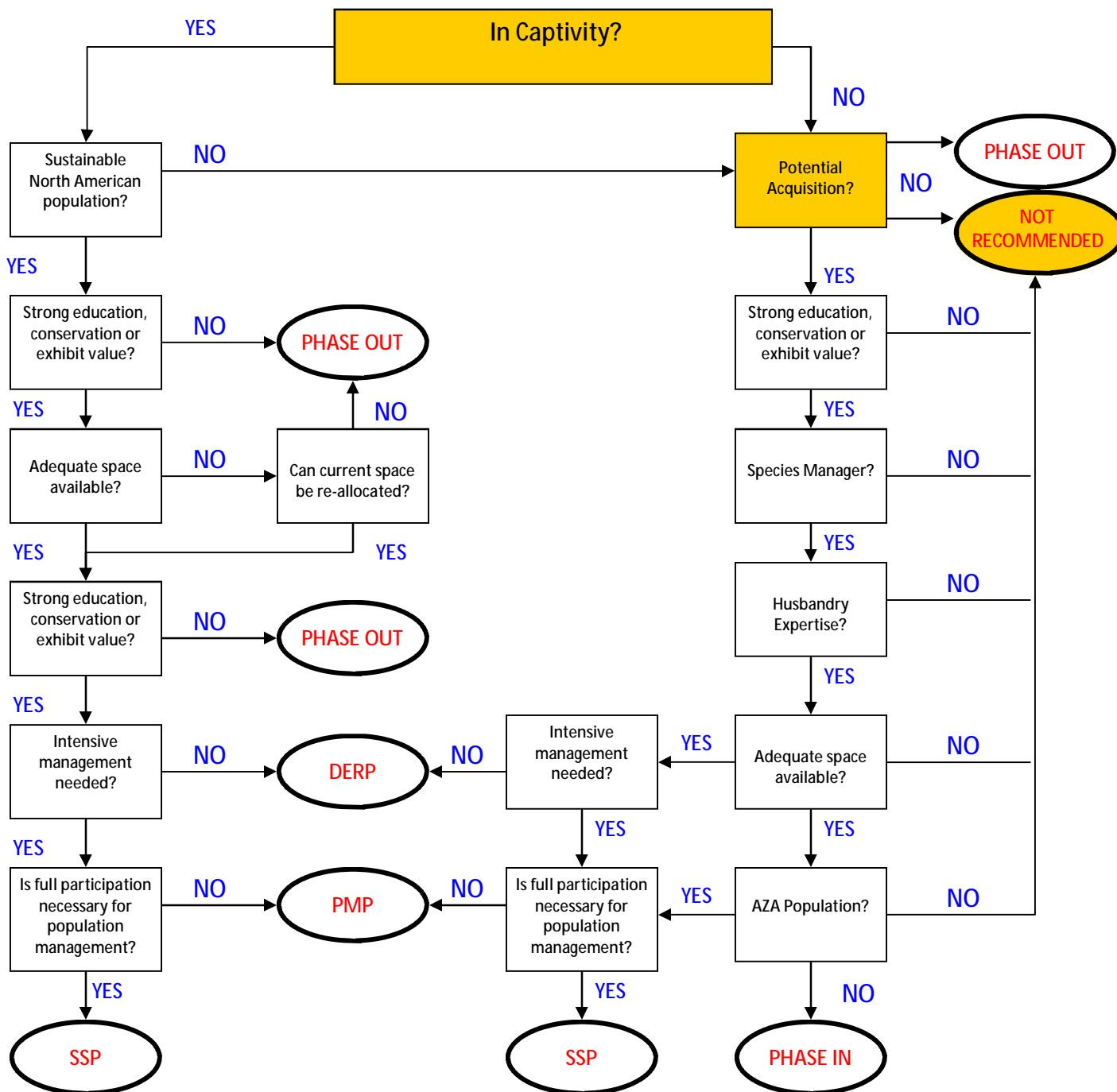
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild pig

Sus scrofa taivanus



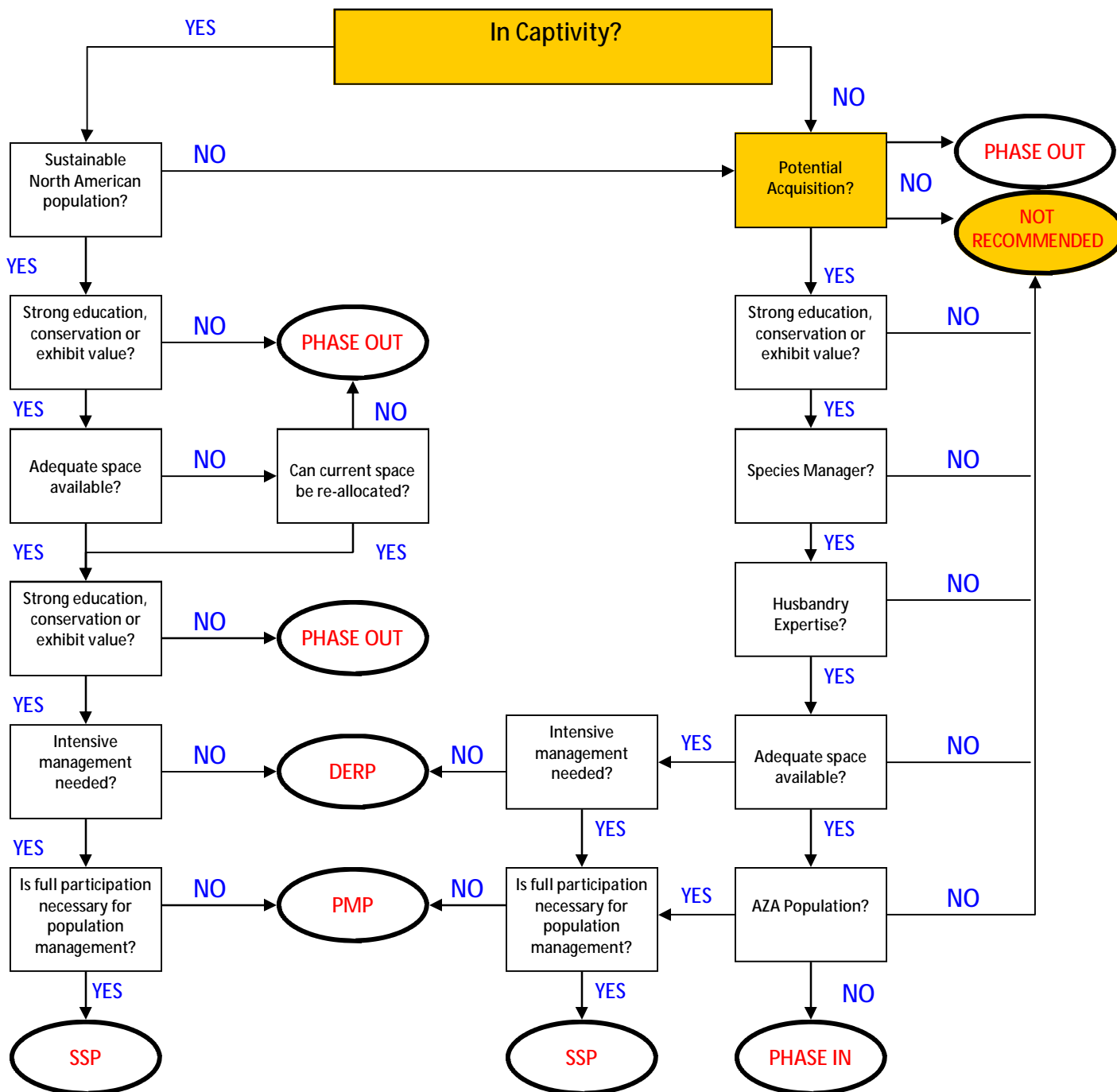
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Eurasian wild pig

Sus scrofa ussuricus



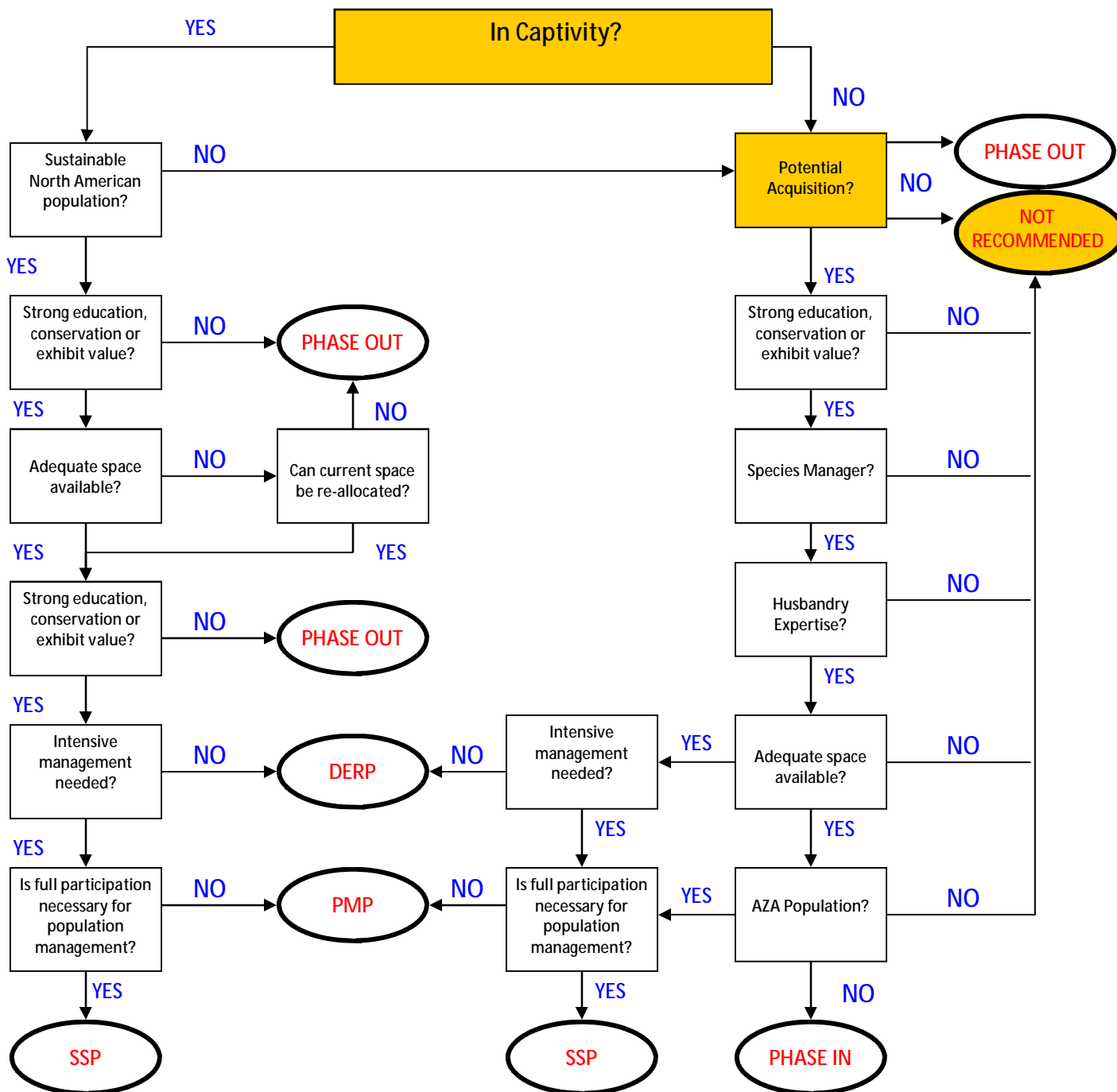
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Indonesian/ Banded wild pig

Sus scrofa vittatus

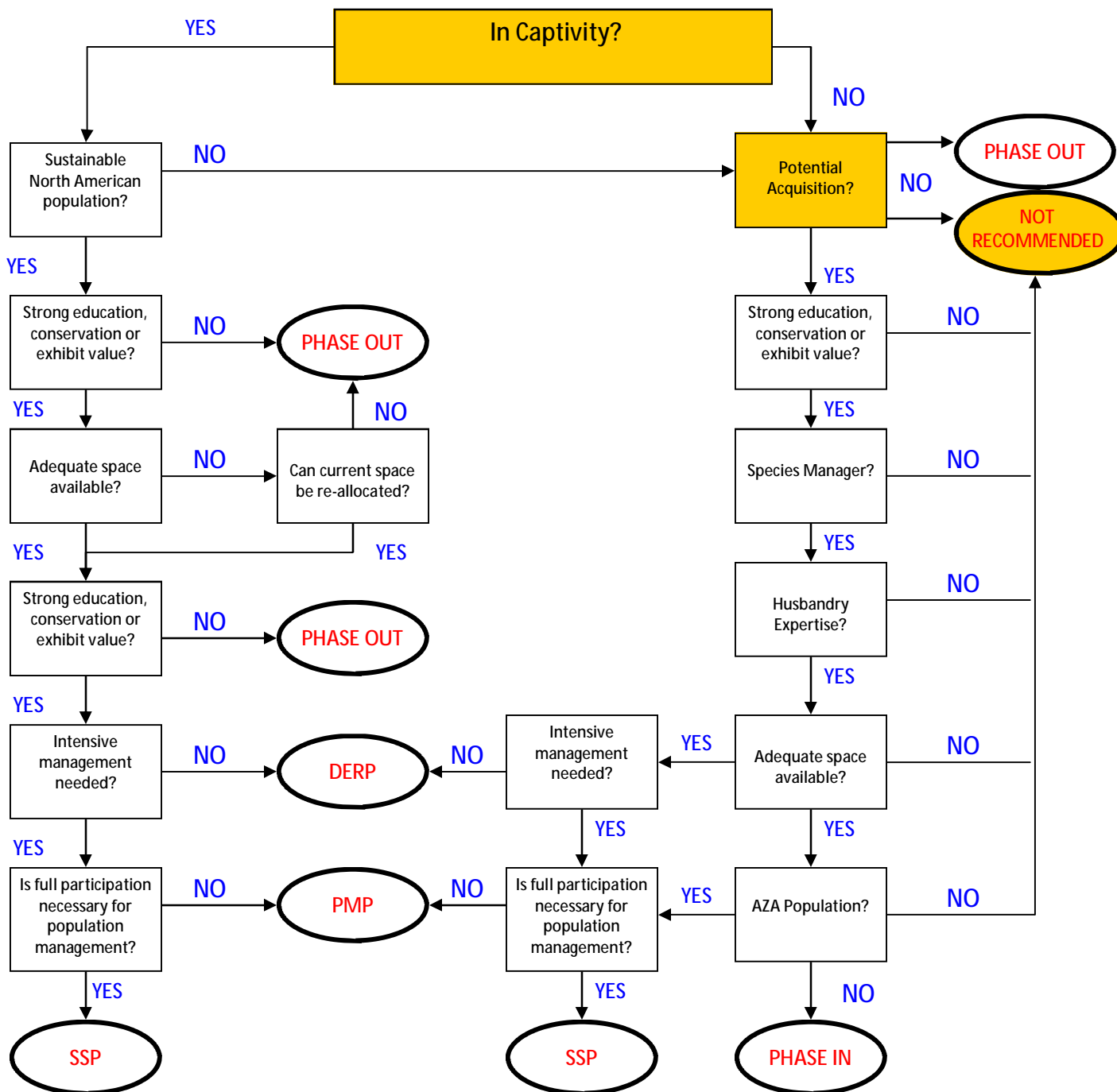


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Javan warty pig *Sus verrucosus blouchi*

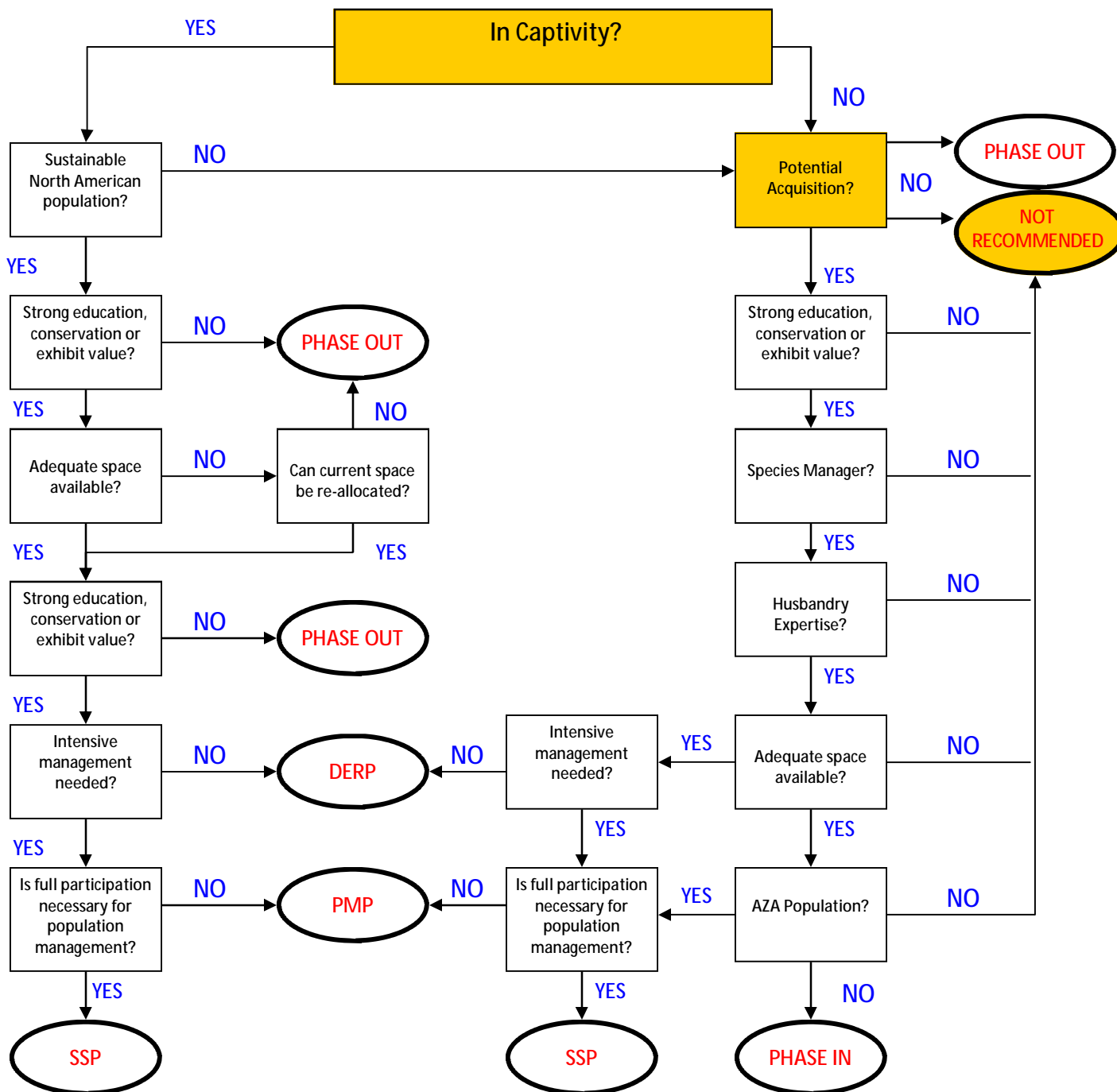


Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

Javan warty pig *Sus verrucosus verrucosus*



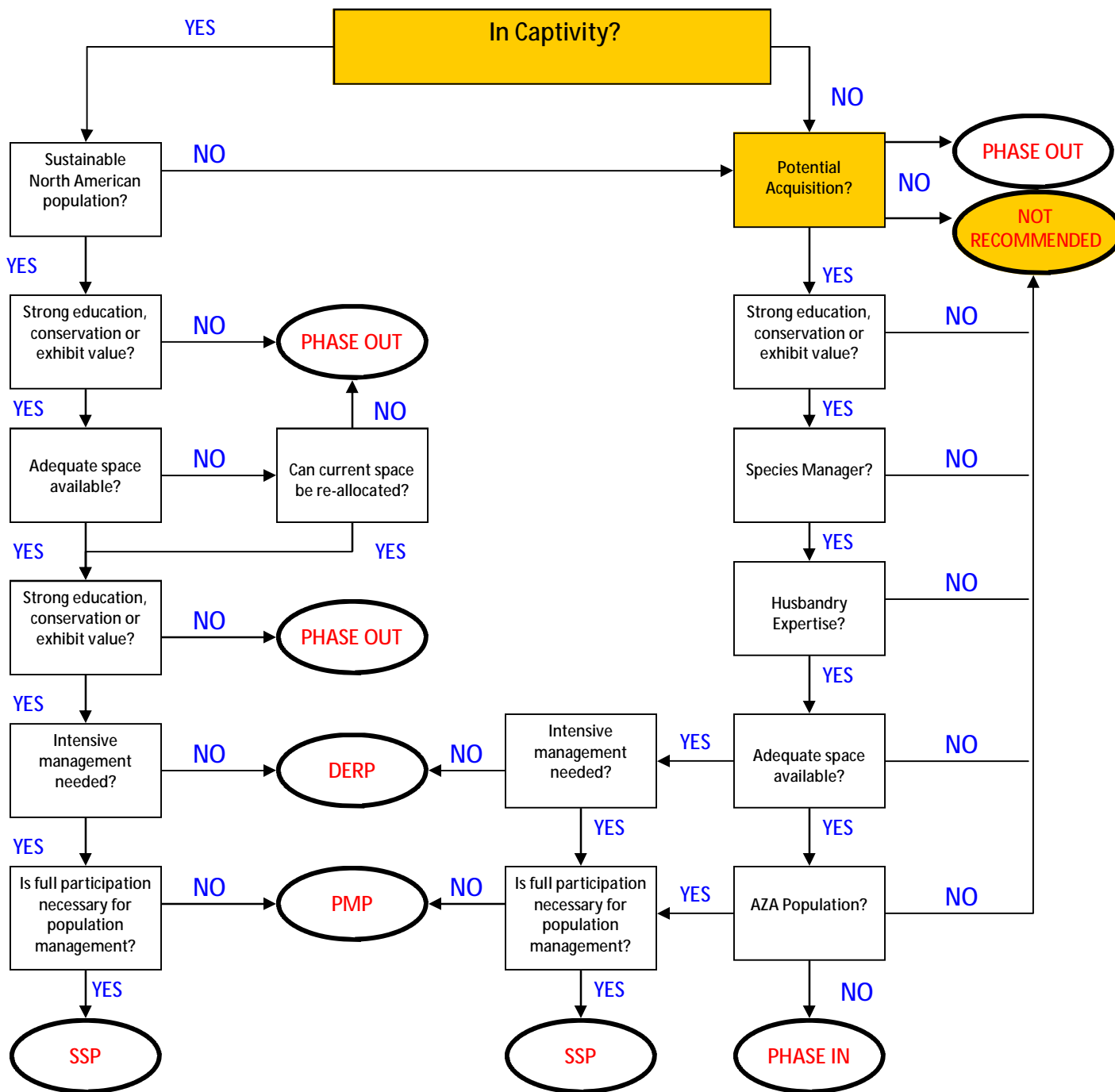
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

White-lipped peccary

Tayassu



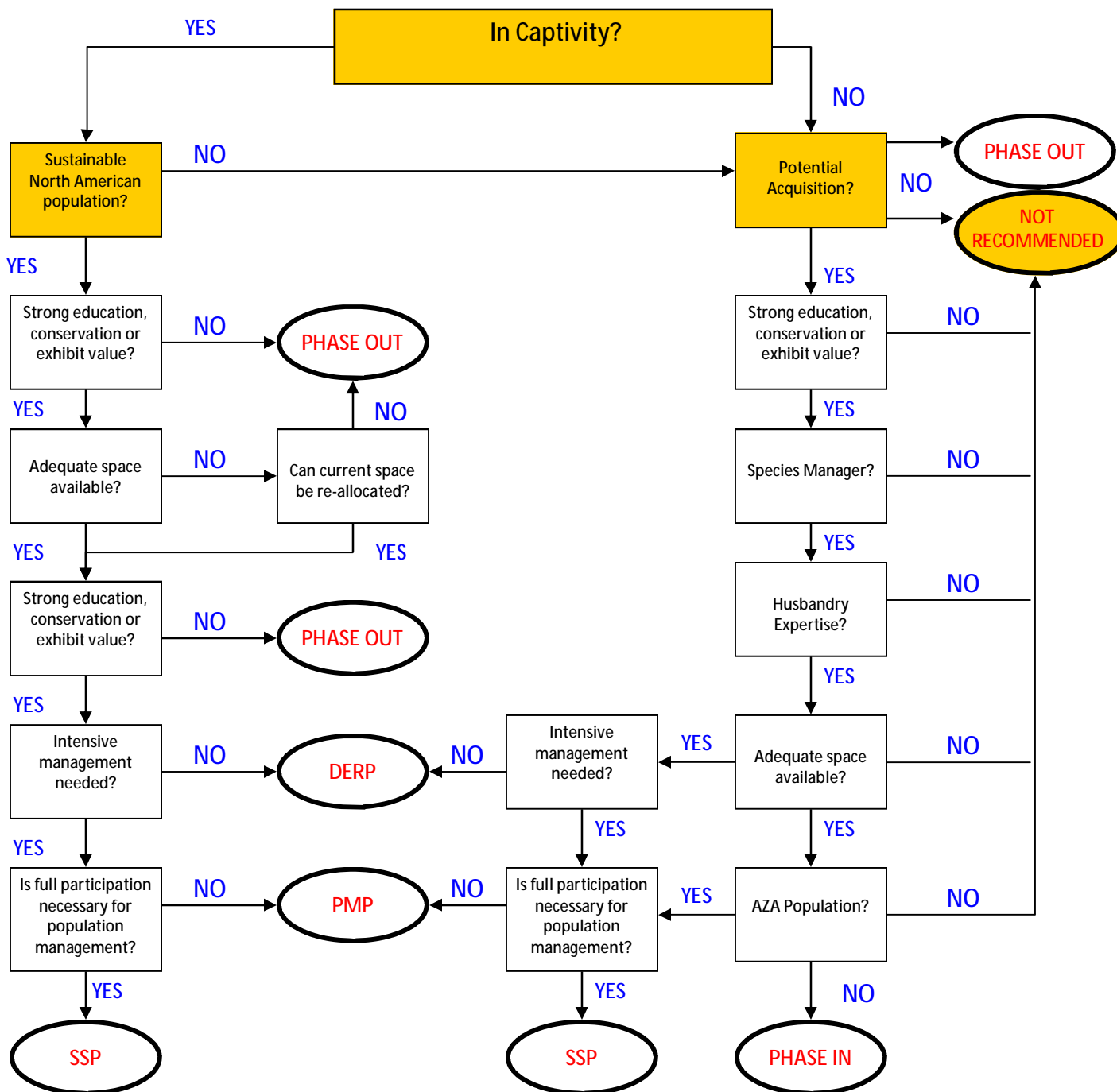
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

White-lipped peccary

Tayassu pecari



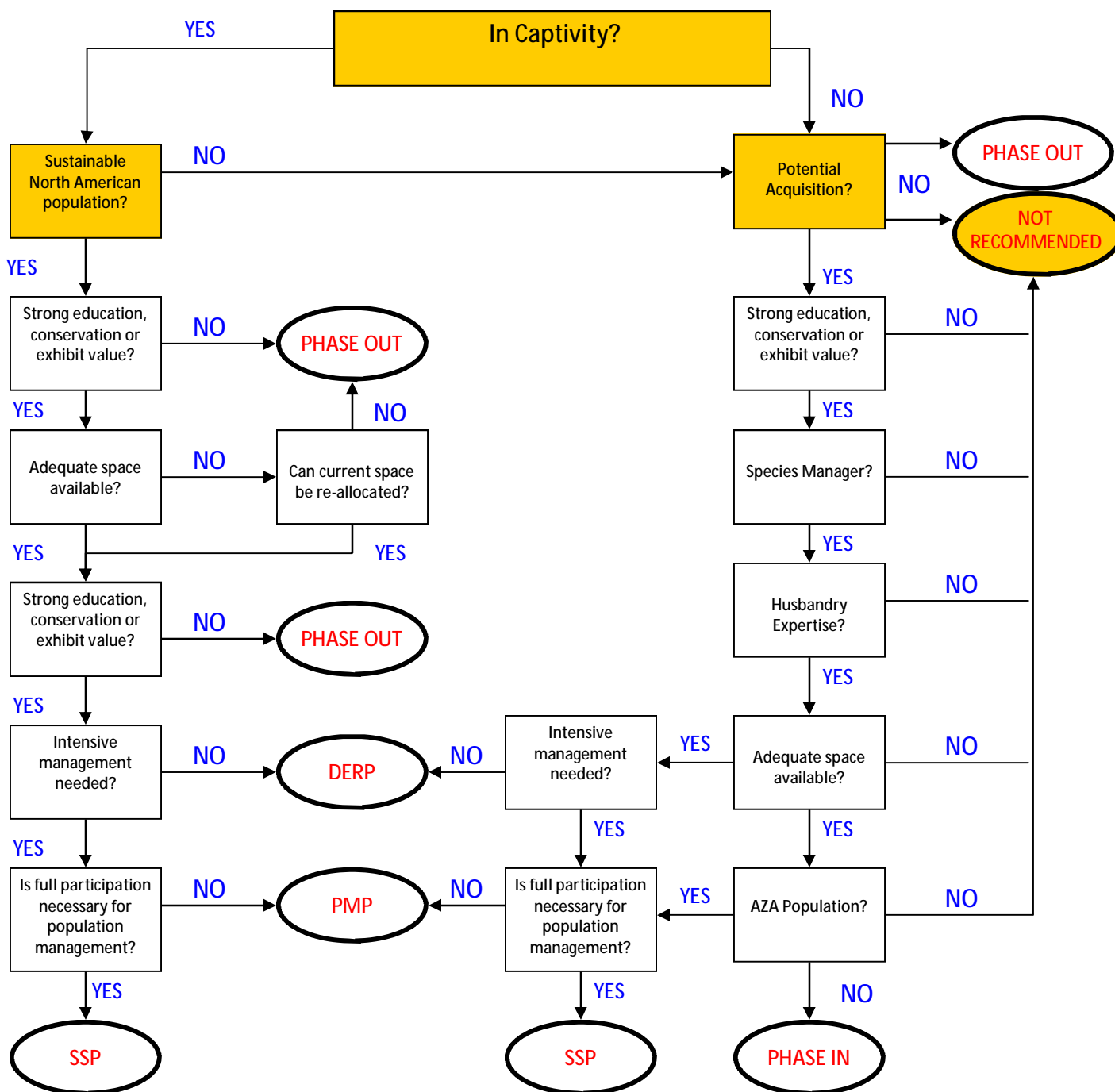
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

White-lipped peccary

Tayassu pecari albirostris



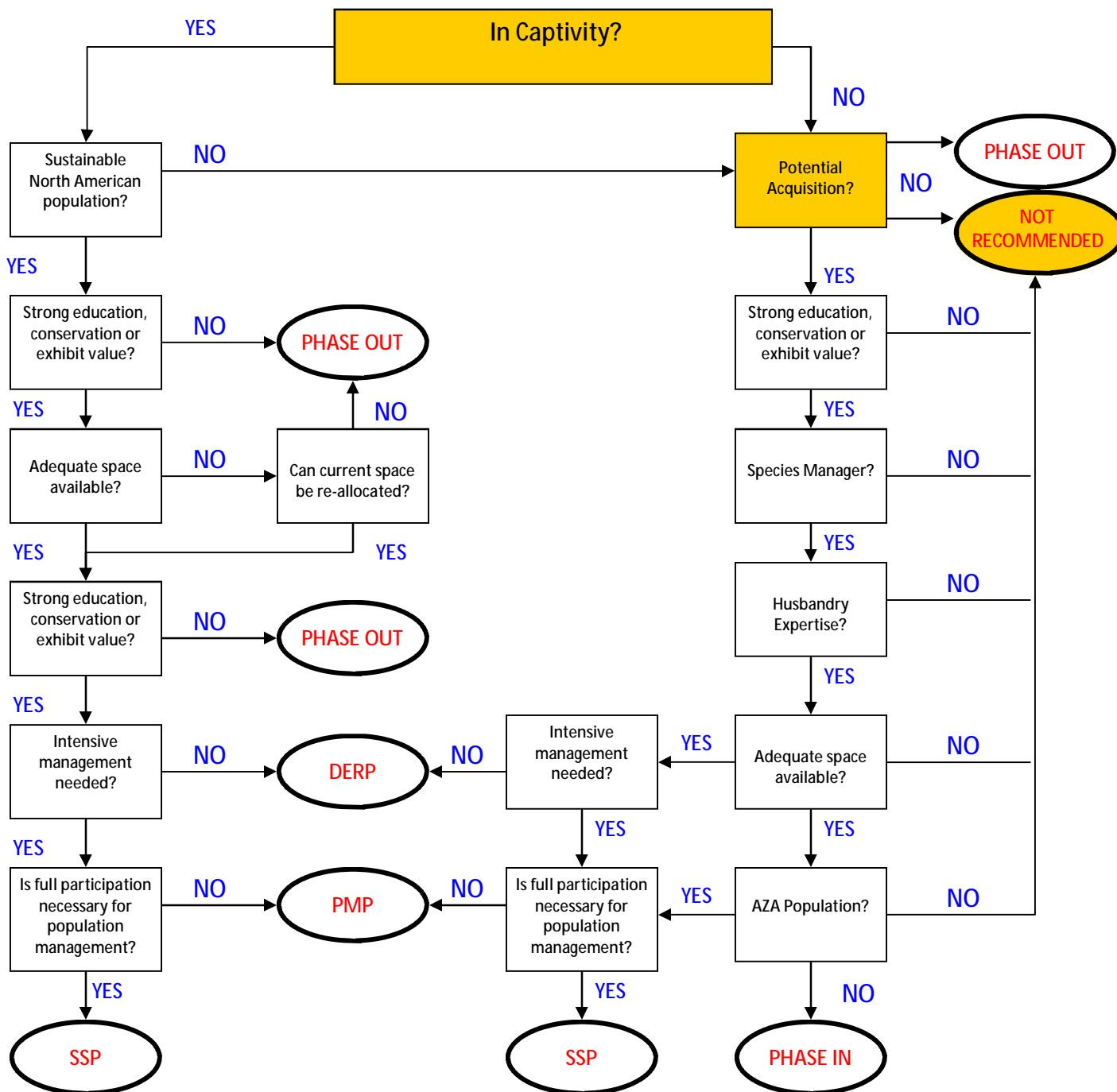
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

White-lipped peccary

Tayassu pecari equatorius



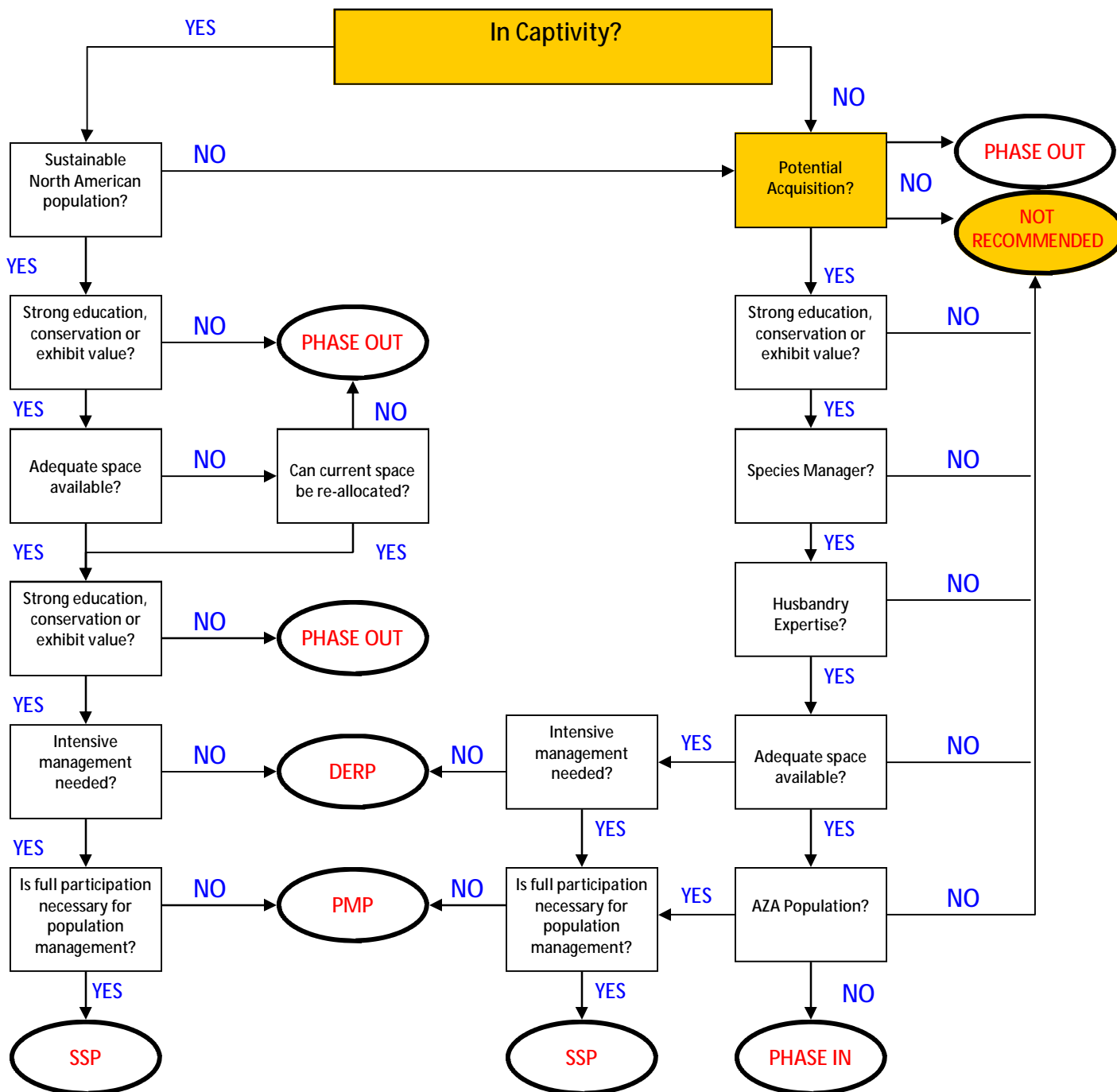
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

White-lipped peccary

Tayassu pecari pecari



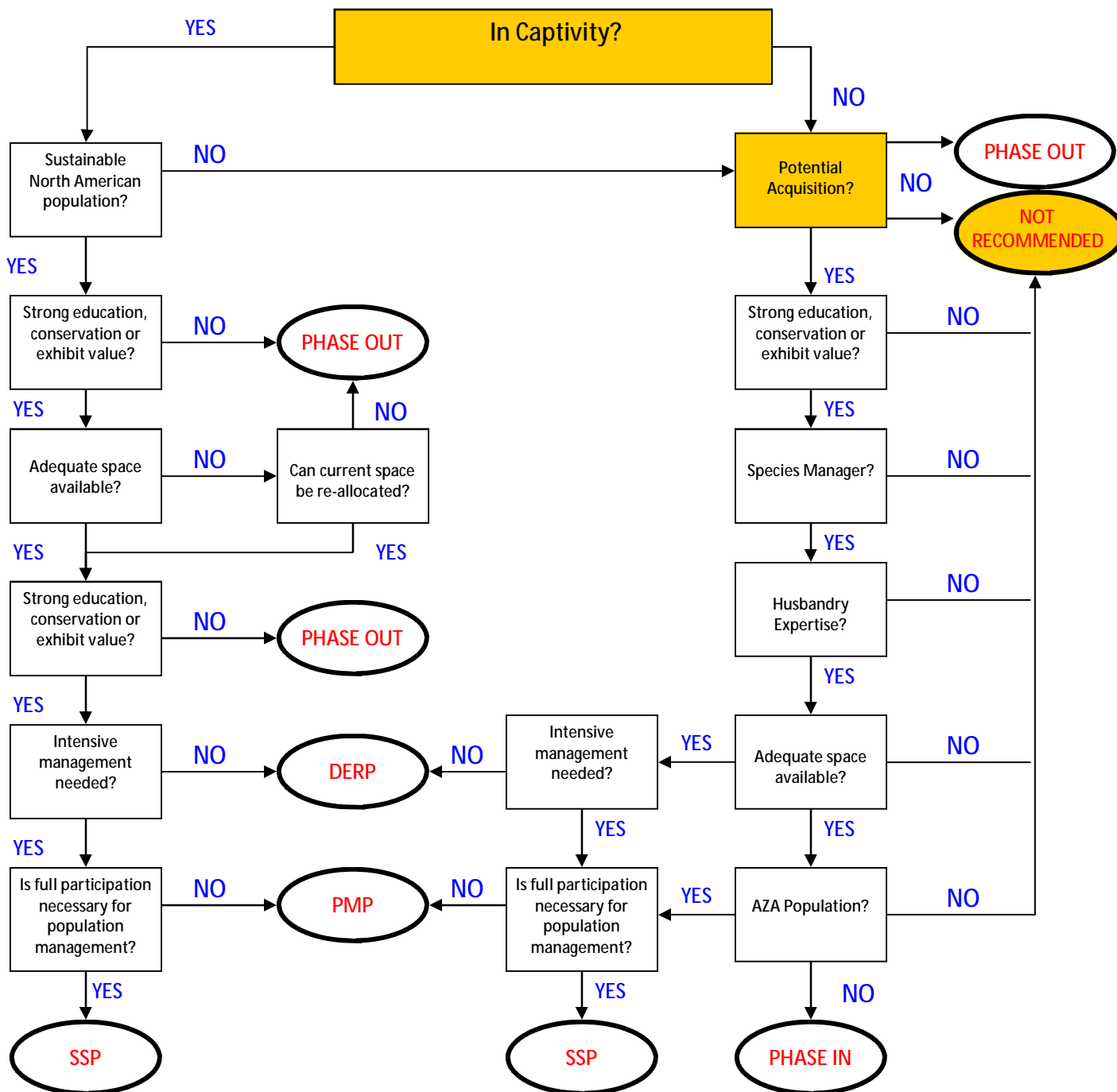
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

White-lipped peccary

Tayassu pecari ringens



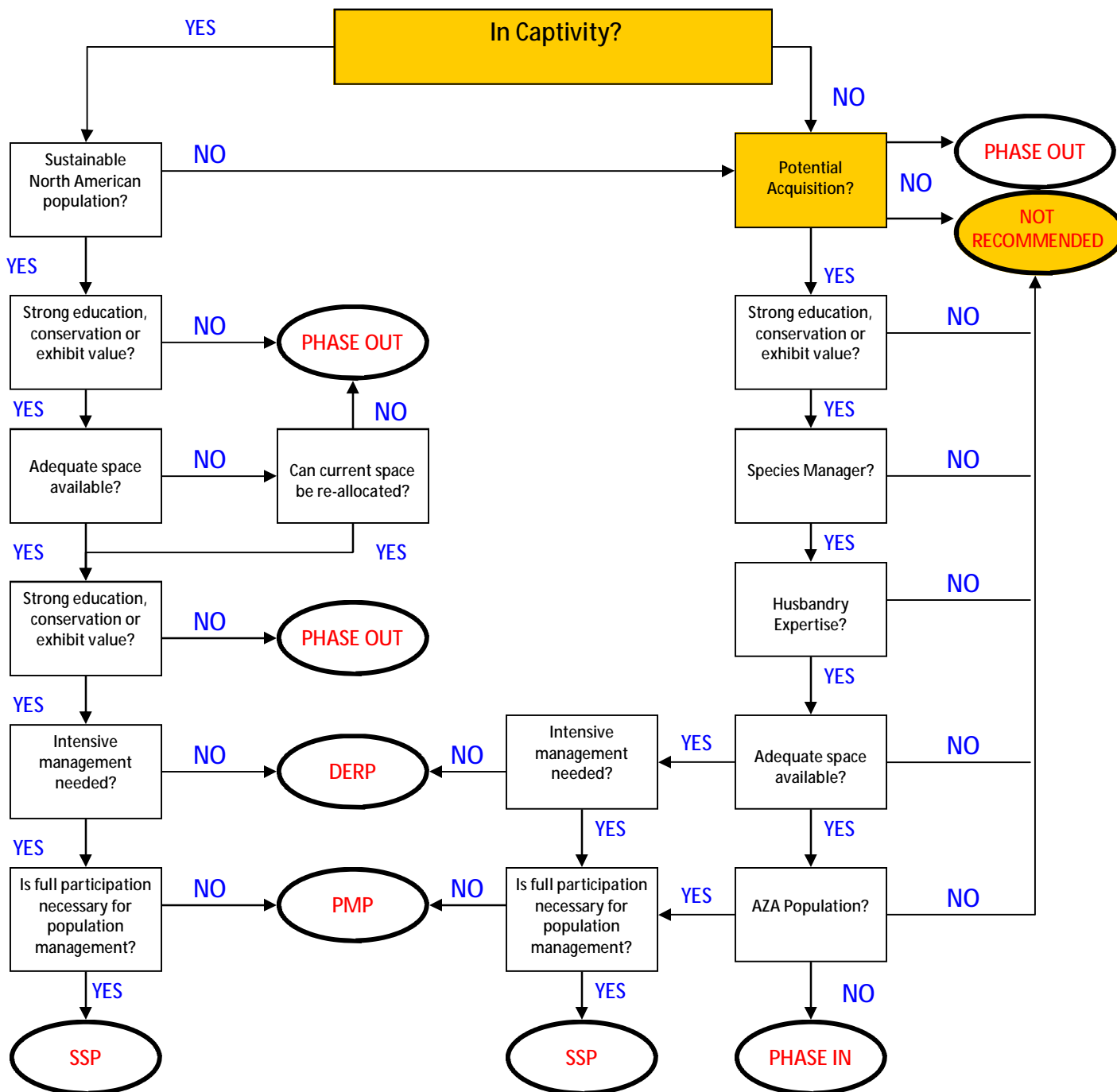
Current Program:

Revised for 2008 RCP

Wild Pig, Peccary and Hippo TAG Management Program Decision Tree

White-lipped peccary

Tayassu pecari spiradens



Current Program:

Revised for 2008 RCP

**WPPH TAG SPACE SURVEY
AZA Institutional Holdings**

ANTICIPATED TRENDS OVERVIEW 2005/2006

Respondents:

Total WPPH TAG Space Survey Responses =	208
AZA Responses =	202
Non-AZA Responses =	6
 Total AZA Institutions at the time of the survey =	 210
Percentage response (AZA only) =	96%

Institutional Interest:

No Interest =	67	(32.21%)
Domestics Only =	16	(7.69%)
Future =	14	(6.73%)
Yes/Current =	111	(53.36%)

10 Year Trends Indicated by Space Survey:

Holders, total = +42 or +25%

Pigs and Peccaries: Ratio of projected 10 year capacity to current number of specimens = +341 or +60.7%

Pigs and Peccaries: Ratio of projected 10 year capacity to current capacity = -6 or -0.66%

Hippos: Ratio of projected 10 year capacity to current number of specimens = +50 or +39.7%

Hippos: Ratio of projected 10 year capacity to current capacity = +28 or +18.9%

SPECIES		SPECIMEN NUMBERS							HOLDER NUMBERS		
Listed to species level only	Current Holding	Current Capacity	1-3 Year Capacity	3-5 Year Capacity	5-10 Year Capacity	Total <u>10yr/cur #</u> <u>10yrcap/cur cap</u>	Trend	Current Holders	Holders 5-10 Years	Trend 10 Yr/current	
Babirusa <i>Babyrousa babyrussa</i>	36 6.4%	67 7.4%	80 8.5%	82 9.1%	80 8.85%	<u>80/36 (+44)</u> 80/67 (+13)	<u>+ 122%</u> <u>+ 19.4</u>	11	20	<u>20/11</u> <u>+9 = +81.8%</u>	
Western Forest Hog <i>Hylochoerus meinertzhageni</i>	1 0.17%	1 0.11%	6 0.63%	6 0.66%	6 0.66%	<u>6/1 (+5)</u> 6/1 (+5)	<u>+500%</u> <u>+500%</u>	1	4	<u>4/1</u> <u>+3 = +300%</u>	
Warthog <i>Phacochoerus africanus</i>	125 22.24%	203 22.33%	208 22.10%	212 23.45%	205 22.7%	<u>205/125 (+80)</u> 205/203 (+2)	<u>+64%</u> <u>+0.98%</u>	48	51	<u>51/48</u> <u>+3 = +6.25%</u>	
Bush Pig <i>Potamochoerus larvatus</i>	5 0.88%	20 2.2%	24 2.5%	4 0.44%	4 0.44%	<u>4/5 (-1)</u> 4/20 (-16)	<u>-20%</u> <u>-80%</u>	1	2	<u>2/1</u> <u>+1 = +100%</u>	
Red River Hog <i>Potamochoerus porcus</i>	95 16.9%	163 17.93%	183 19.45%	190 21.02%	181 20.0%	<u>181/95 (+86)</u> 181/163 (+18)	<u>+90.6%</u> <u>+11.1%</u>	21	30	<u>30/21</u> <u>+9 = +42.6%</u>	
Bornean Bearded Pig <i>Sus barbatus</i>	27 4.8%	41 4.5%	26 2.76%	24 2.65%	26 2.87%	<u>26/27 (-1)</u> 26/41 (-15)	<u>-3.7%</u> <u>-36.5%</u>	4	3	<u>3/4</u> <u>-1 = - 25%</u>	
Visayan Warty Pig <i>Sus cebifrons</i>	23 4.1%	90 9.9%	122 12.96%	97 10.7%	92 10.19%	<u>92/23 (+69)</u> 92/90 (+2)	<u>+300%</u> <u>+2.21%</u>	4	15	<u>15/4</u> <u>+11 = + 275%</u>	
Pygmy Hog <i>Sus salvanus</i>	0 0%	61 6.7%	22 2.33%	28 3.1%	21 2.32%	<u>21/0 (+21)</u> 21/61 (+5)	New	0	3	<u>3/0</u> <u>-3 = + 300%</u>	
Wild Boar <i>Sus scrofa</i>	10 1.78%	9 0.9%	9 0.9%	9 0.9%	7 0.7%	<u>7/10 (-3)</u> 7/10 (-3)	<u>-30%</u> <u>-30%</u>	4	2	<u>2/4</u> <u>-2 = -50%</u>	
Domestic Pig <i>Sus scrofa f. domestica</i>	116 20.64%	125 13.75%	125 13.28%	113 12.5%	113 12.5%	<u>113/116 (-3)</u> 113/125 (-12)	<u>-2.3%</u> <u>-9.6%</u>	45	40	<u>40/45</u> <u>-5 = -11.1%</u>	
Chacoan Peccary <i>Catagonus wagneri</i>	39 6.93%	59 6.49%	76 8.07%	76 8.4%	72 7.97%	<u>72/39 (+33)</u> 72/59 (+13)	<u>+84.6%</u> <u>-22.04%</u>	7	22	<u>22/7</u> <u>+15 = +215%</u>	
Collared Peccary <i>Pecari tajacu</i>	85 15.12%	70 7.7%	51 5.4%	54 5.97%	62 6.86%	<u>62/85 (-23)</u> 62/70 (-8)	<u>-27.1%</u> <u>-11.92%</u>	22	15	<u>15/22</u> <u>-7 = -31.8%</u>	
White-lipped Peccary <i>Tayassu pecari</i>	0 0%	0 0%	9 0.9%	9 0.9%	34 3.76%	<u>34/0 (+34)</u> 34/0 (+34)	New	0	3	<u>3/0</u> <u>+3 = +300%</u>	
Total Pig & Peccary	562	909	941	904	903	<u>903/562 (+341)</u> 903/909 (-6)	<u>+60.7%</u> <u>-0.66%</u>	168	210	<u>210/168</u> <u>+42 = +25%</u>	
River Hippopotamus <i>Hippopotamus amphibius</i>	95	101	103	104	121	<u>121/95 (+26)</u> 121/101 (+20)	<u>+27.3%</u> <u>+19.8%</u>	39	37	<u>37/39</u> <u>-2 = -5.1%</u>	
Pygmy Hippopotamus <i>Hexaprotodon liberiensis</i>	31	47	46	61	55	<u>55/31 (+24)</u> 55/47 (+8)	<u>+77.5%</u> <u>+17.0%</u>	16	20	<u>20/16</u> <u>+4 = 25%</u>	
Total Hippos	126	148	149	165	176	<u>176/126 (+50)</u> 176/148 (+28)	<u>+39.7%</u> <u>+18.9%</u>	55	57	<u>57/55</u> <u>+2 = +3.64%</u>	

Management Recommendations for the Wild Pig, Peccary & Hippo Taxon Advisory Group

SPMAG/PMC ADVISORS

Sarah Long, AZA Population Management Center
Louise Bier, AZA Population Management Center

13 September 2007

This report was prepared with assistance from the



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Acknowledgments

This report details the results of a meeting held at the Lincoln Park Zoo in Chicago, Illinois on 6 – 8 June 2007.

In attendance were: Jeff Holland, TAG Vice Chair, Los Angeles Zoo
Dawn Petefish, Peoria Zoo in Glen Oak Park
Sarah Long, AZA Population Management Center
Louise Bier, AZA Population Management Center
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Executive Summary

Objective: To assist the Wild Pig, Peccary and Hippo Taxon Advisory Group with the evaluation of target population sizes in the current draft of the TAG's Regional Collection Plan (2007 – 2009).

Methods: This is the first evaluation of target sizes for this TAG by the Population Management Center. To evaluate potential management strategies for species that are current or proposed Population Management Plan species (PMPs) or Species Survival Plans® (SSPs), demographic and genetic analyses were conducted using the most current available studbook data and the Goal Setting screen of Population Management 2000 software (PM2000 Version 1.212). The current population size and baseline genetic analyses for each species was obtained from the population studbook or ISIS data as noted, for AZA institutions only unless otherwise stated. In additional modeling scenarios, adjustments to other demographic parameters such growth rate were made based on studbook data of the species in questions, similar species, or the expertise of meeting attendants.

Where noted, the number of founders that could reasonably be obtained was added into the projections to determine the impact on the maintenance of gene diversity. A potential founder is considered to be any animal that is unrelated to individuals in the current population, and may be obtained from other captive populations or from the wild. Although the importation of founders is considered in some of the management strategies evaluated, every effort should be made to create self-sustaining populations not reliant on imports. Frequent importations should not be viewed as an alternative strategy to responsible population management for the maintenance of gene diversity over time.

Management Goals: For each species, several different strategies were tested to evaluate population sizes relative to genetic and demographic sustainability over the next 100 years. The first strategy listed in the table for each species is a baseline strategy, demonstrating the projected status of the population assuming no changes to current management or population parameters and using either the population's current size or the estimated 3 to 5-year holding capacity from the TAG's 2005 space survey. Other strategies tested include changes to population parameters, including growth rate and effective population size, or the recruitment or acquisition of potential founders.

The genetic goal for all populations was the maintenance of 90% gene diversity for 100 years into the future or, if starting gene diversity was unknown or already lower than 90%, long-term management goals are assumed to be the loss of no more than 10% gene diversity relative to the starting gene diversity. When gene diversity falls below approximately 90% of the gene diversity in the founding population, it is expected that reproduction will be increasingly compromised by, among other factors, lower birth weights and greater infant mortality.

The target size analyses within this document are based primarily on genetic projections, with the assumption that husbandry and cooperation will be adequate for the populations to grow to the target sizes tested.

Definitions and Explanation of Tables

Demography & Genetics								
Number of holding institutions	N_0	Estimated future holding capacity	T	λ	GD ₀	N_e/N	% known before assumptions	% known after assumptions

Number of institutions

This is the number of AZA institutions currently holding specimens of a given species, unless otherwise specified.

N_0 – Current population size

This is the current number of specimens estimated to be living in participating institutions, according to the most current studbook.

Estimated future holding capacity

This is the future (3 to 5-year) population size compiled from the 2005 TAG space surveys sent to institutions.

T – Generation time

This represents the average age at reproduction (from first reproduction through to last reproduction), in years.

λ - Potential population growth rate ($\lambda = 1.0$, 0% growth)

This represents the annual rate of increase of the population, as determined by demographic analysis of historic studbook data within the date range of modern management, or comparison with a similar species.

GD₀ – Estimated current gene diversity of captive population (%)

Gene diversity was calculated by genetic analysis of true or analytical studbook data. When studbook data was insufficient, a benchmark gene diversity (90%) was used as a starting point to measure loss of GD over time. The proportional gene diversity (as a proportion of the source population) is the probability that two alleles from the same locus sampled at random from the population will not be identical by descent.

N_e/N – Ratio of effective population size to actual population size.

This ratio represents the approximate proportion of the population that is breeding, calculated from the number of living animals with living offspring in the population.

% Known – Percentage of pedigree known (before and after assumptions and exclusions).

This is the proportion of the pedigree of living specimens descended from known or wild-caught ancestors. If pedigree assumptions were made or if unknown pedigree animals were excluded from the genetic analyses, the percentage known before and after these assumptions/exclusions is noted.

The following table is an example of different projection strategies used for each population to evaluate whether the current population will be able to meet the standard AZA program goal of 90% gene diversity for at least 100 years.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested Target Population Size
A. Baseline				
<i>Strategy A evaluates the genetic status of the population in 100 years under current conditions (historic average annual growth rate, current GD, current N_e/N). This strategy assumes that no founders will be imported. The tested target population size was the number set as the maximum allowable population size on the PM2000 Goals Screen, and was generally the current population size or the estimated future holding capacity from the TAG's space survey.</i>				
B. Increase lambda or N_e/N				
C. Increase target population size tested				
<i>Additional strategies evaluate the genetic status of the population in 100 years with an improvement to population parameters (average annual growth rate, N_e/N) or an increase in the tested target size (set to either the estimated future holding capacity from the TAG's space survey or some larger population size).</i>				
D. Import reasonable # founders				
<i>Other additional strategies evaluate the genetic status of the population based on previous improvements with the addition of a realistic number of founders, based on meeting attendees' expertise, with imports scheduled as described.</i>				

Babirusa

Babyrousa babyrussa celebensis

Proposed program status: SSP

Projections for this population were based on an analytical version of the Babirusa North American Regional Studbook (current to 31 December 2006, from studbook keeper Jeff Holland, Los Angeles Zoo). Assumptions used were based on those developed by Cathleen Cox and documented in the 2007 Babirusa SSP and were incorporated into an analytical studbook (XXBABIRU). Genetic data exports for the living population were based on the AZA population. Demographic exports were based on North American data from 1 January 1988 – present.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	T	Projected λ	GD (%)	N_e/N	% known before assumptions/exclusions	% known after assumptions/exclusions
AZA	13	42 (19.23)	34	82	6.9	1.03	64.76	0.35	0	100

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary and Hippo TAG's space survey

T – Generation time (years)

λ - Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

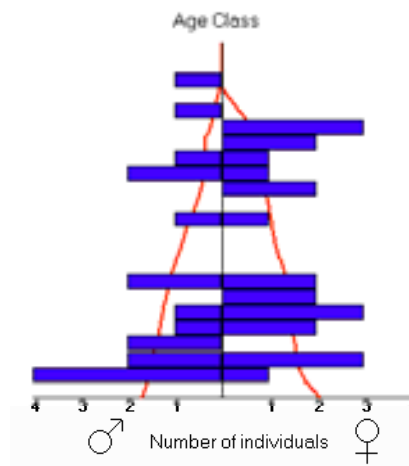
GD – Estimated current gene diversity of captive population

N_e/N – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size
A. Baseline	48.54	n/a	60	82
B. Increase growth rate ($\lambda=1.07$)	49.42	n/a	60	82
C. Increase growth rate ($\lambda=1.07$), increase target size	51.49	n/a	70	100
D. Increase growth rate ($\lambda=1.07$), increase target size, add founders (4 founders every 10 years)	89.06	n/a	--	100
E. Increase growth rate ($\lambda=1.07$), add founders (4 founders every 10 years)	88.13	n/a	--	82

The population's starting gene diversity is below 90%. Given current population parameters and the target population size suggested by the TAG space survey, projections indicate that gene diversity will drop below 10% of the current level in 60 years (Strategy A). There may be a possibility of importing new founders from Europe in the future. With the importation of four founders every 10 years, as well as an increased growth rate (Strategy E), projections indicate gene diversity can be increased and 88% GD can be maintained for 100 years. Increasing the target population size to 100 does little to improve gene diversity projections for this population.



Chacoan Peccary

Catagonus wagneri

Proposed program status: SSP

Projections for this population were based on the Chacoan Peccary North American Regional Studbook (current to 11 August 2007, from studbook keeper Mike Quick, Sedgwick County Zoo). Assumptions used were developed by the PMC for a 2007 masterplanning meeting. Genetic data exports for the living population were based on the AZA population. Demographic exports were based on North American data from 1 January 1996 – 28 August 2007.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	Projected T	Projected λ	GD (%)	N_e/N	% known before assumptions	% known after assumptions
AZA	9	44 (15.29)	44 (15.29)	76	5.5	1.04	87.13	0.28	30.5	98.9

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary and Hippo TAG's space survey

T – Generation time (years)

λ – Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

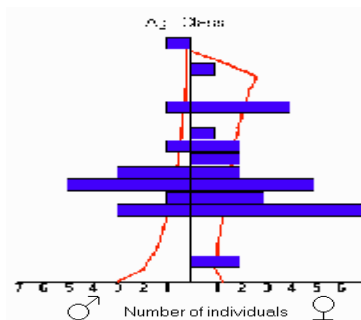
GD – Estimated current gene diversity of captive population

N_e/N – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size
A. Baseline	55.09	n/a	20	76
B. Increase growth rate ($\lambda=1.08$)	55.63	n/a	not tested	76
C. Increase generation time (T=7), increase growth rate ($\lambda=1.08$)	61.25	n/a	not tested	76
D. Increase growth rate ($\lambda=1.08$), add founders (6 founders in year 5)	58.5	n/a	not tested	76
E. Increase growth rate ($\lambda=1.08$), increase target size	61.24	n/a	25	100
F. Increase growth rate ($\lambda=1.08$), add founders (6 founders in year 5), increase target size	64.47	n/a	40	100

This population's gene diversity is already starting below 90%. Given current population parameters and the target population size suggested by the TAG space survey (Strategy A), projections indicate that 10% GD loss will be reached in 20 years. However, interest in this species among AZA institutions is increasing, and there is a possibility of the SSP working with European institutions in the future, which could allow for an increase in the population growth rate and the potential future holding capacity (Strategies E and F). If these parameters are increased and founders are imported (Strategy F), projections indicate gene diversity can be maintained within 10% of its current level for 40 years.



Visayan Warty Pig

Sus cebifrons

Proposed program status: SSP

Projections for this population were based on the Visayan Warty Pig North American Regional studbook (current to 22 July 2007, from studbook keeper Stephanie DeGesero, sponsored by San Diego Zoo). Genetic data exports for the living population were based on the AZA population. Demographic exports were based on data from 1 January 1995 – present.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	Projected T	Projected λ	GD (%)	N_e/N	% known before exclusions	% known after exclusions
AZA	7	42 (20.22)	42 (20.22)	100	4.9	1.10	77.05	0.25	100	100

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary and Hippo TAG's space survey

T – Generation time (years)

λ - Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

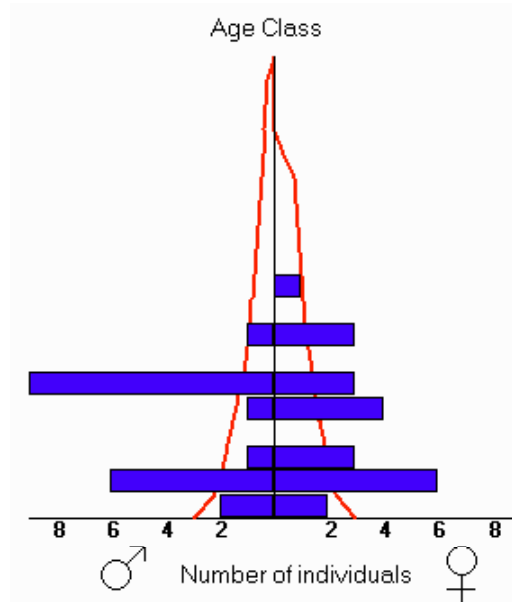
GD – Estimated current gene diversity of captive population

N_e/N – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size
A. Baseline	49.52	n/a	20	100
B. Add founders (6 every 10 years)	87.25	n/a	not tested	100

This population's gene diversity is already starting below 90%. Given current population parameters and the target population size suggested by the TAG space survey (Strategy A), projections indicate that 10% GD loss will be reached in 20 years. Importation of founders from the Philippines is a possibility. If six founders can be added to the population every 10 years (Strategy B), projections indicate 87% gene diversity for 100 years can be reached.



Southern Warthog

Phacochoerus africanus sundevallii

Proposed program status: PMP (currently included in the Common Warthog population)

Projections for the Southern warthog population were based on an ISIS download (current to 30 June 2007, obtained and validated by Kristine Schad, Studbook Analyst, Population Management Center). Assumptions were developed by the PMC at the RCP analysis meeting and incorporated into an analytical studbook. Genetic data exports for the living population were based on the AZA population. Demographic exports were based on data from 1 January 1995 – present.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	T	λ	GD (%)	N_e/N	% known before assumptions	% known after assumptions
AZA	7	17 (8.9)	17 (8.9)	50	4.7	1.16	66.47	0.28	30.9	100

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary and Hippo TAG's space survey

T – Generation time (years)

λ - Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

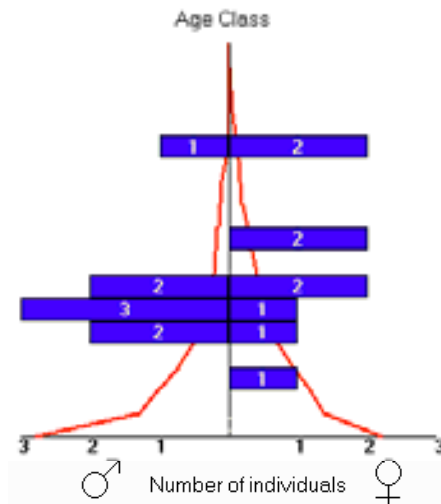
GD – Estimated current gene diversity of captive population

N_e/N – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size
A. Baseline	28.82	n/a	10	50
B. Increase target size	41.16	n/a	20	100

The TAG has been managing the Southern warthog (*P. a. sundevallii*) as a separate population from the common warthog (unknown subspecies) but is now considering combining these populations. The southern warthog population is descended from just three founders and starting gene diversity is already below 90%. Given current population parameters and the target size suggested by the TAG space survey, gene diversity will fall below 10% of its current level in 10 to 20 years (Strategies A and B). Given the low starting gene diversity, and the fact that there are unlikely to be unrelated founders available for import, this population is not genetically viable in the long-term. If the TAG is not concerned with keeping pure subspecific populations, it would be more effective (both genetically and demographically) to manage all warthogs as one population.



Common Warthog

Phacochoerus africanus spp.

Proposed program status: PMP

Projections for the common warthog population were based on an ISIS download (including all subspecies and misidentified species, current to 30 June 2007, obtained and validated by Kristine Schad, Studbook Analyst, Population Management Center). Assumptions were developed by the PMC at the RCP analysis meeting and incorporated into an analytical studbook. Genetic data exports for the living population were based on the AZA population. Demographic exports were based on AZA data from 1 January 1987 – present.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	T	λ	GD (%)	N_e/N	% known before assumptions	% known after assumptions
AZA	50	118 (54.63.1)	118 (54.63.1)	175	4.7	1.13	74.75	0.28	4.6	17.7

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary and Hippo TAG's space survey

T – Generation time (years)

λ - Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

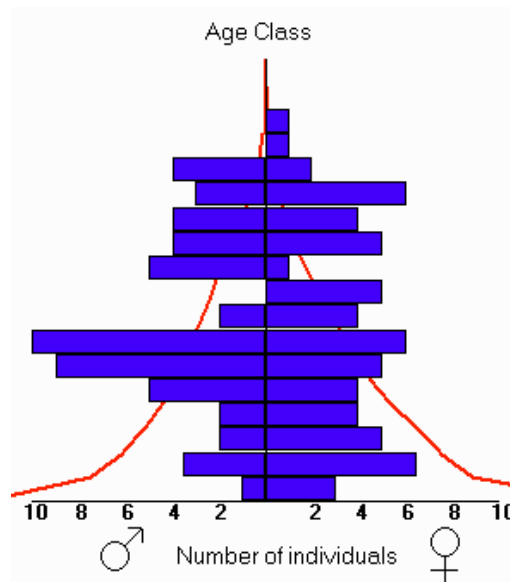
GD – Estimated current gene diversity of captive population

N_e/N – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size
A. Baseline	59.84	n/a	60	175

Because the pedigree of this population is only 18% known, current gene diversity is only an estimate. However, it is known that the population is descended from seven founders. Given current population parameters and the target size suggested by the TAG space survey, gene diversity is projected to drop below 10% of its current level in 60 years (Strategy A). However, with a new management strategy that combines the subspecific populations (*P. a. sundevalii* and others), there is more potential for increasing gene diversity and avoiding inbreeding. The PMP should focus on investigating unknown pedigrees in this population in order to get a clearer picture of the genetic status.



Red River Hog *Potamochoerus porcus*

Proposed program status: PMP

Projections for this population were based on the Red River Hog North American Regional Studbook (current to 6 August 2007, from studbook keeper Jeff Holland, Los Angeles Zoo). Genetic data exports for the living population were based on the North American population. Demographic exports were based on North American data from 1 January 1995 – present.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	T	λ	GD (%)	N_e/N	% known before exclusions	% known after exclusions
AZA	28			210						
AZA + Non-AZA	32	135 (72.63)	129 (68.61)	190	6.1	1.04	73.58	0.20	100	100

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary, and Hippo TAG's 2005 space survey

T – Generation time (years)

λ – Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

GD – Estimated current gene diversity of captive population

N_e/N – Ratio of effective population size to actual population size.

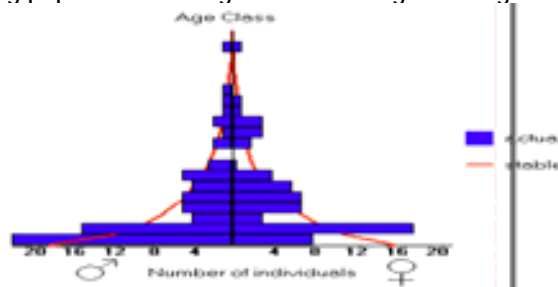
% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size
A. Baseline	58.78	n/a	64	190
B. Increase $N_e/N = 0.30$	63.37	n/a	100	190
C. Add existing potential founders (3 founders in year 1), increase N_e/N to 0.30	69.94	n/a	160	190
D. Baseline + increased Kt to 210	59.88	n/a	70	210
E. Baseline + increased Kt to 200	59.36	n/a	65	200
F. Baseline + increased Kt to 250	61.53	n/a	82	250
G. Baseline + Add potential founders (2 every 10 years)	84	n/a	--	190

Non-AZA institutions were included in the baseline genetic analyses as part of the current PMP population. However, projections results were separated to show the future holding space of A) AZA only and D) AZA and non-AZA holding.

Demand for this species is high with the majority of red river hogs in African-themed exhibits and not competing with other species the TAG would like to prioritize. The TAG Chair and PMP Coordinator have speculated that an increase in target size within AZA institutions may be reasonable (Strategy E).

Founders are available but are not considered a strategy that should be prioritized over improving genetic management of the existing population starting with increasing breeding of existing founder lines.



Bornean Bearded Pig *Sus barbatus barbatus*

Proposed program status: PMP (currently DERP)

Projections for the Bornean bearded pig population were based on an ISIS download (current to 30 June 2007, obtained and validated by Kristine Schad, Studbook Analyst, Population Management Center). Genetic data exports for the living population were based on the AZA population. Demographic exports were based on data from 1 January 1993 – present.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	T	λ	GD (%)	N_e/N	% known before exclusions	% known after exclusions
AZA	4	19 (12.7)	19 (12.7)	30	6*	1.06	83.41	0.20*	100	100

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary, and Hippo TAG's 2005 space survey

T – Generation time (years)

λ - Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

GD – Estimated current gene diversity of captive population

N_e/N – Ratio of effective population size to actual population size.

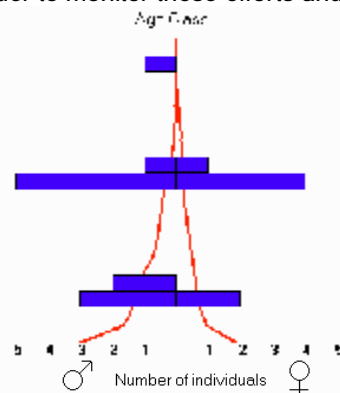
% Known – proportion of descendant population with known pedigree.

* Estimate based on other similar species; actual T=7.9 years.

** Estimate based on other similar species (e.g., peccaries); actual $N_e/N=0$.

Projection strategy	% GD at 100 years	Years to 90% GD	Years to 10% GD loss	Tested target population size
A. Baseline	18.58	n/a	< one generation	30
B. Increase N_e/N (to 0.30)	31.12	n/a	< one generation	30
C. Add founders (4 every 2 years)	86.53	n/a	not tested	30
D. Add founders (4 every 5 years)	82.68	n/a	not tested	30
E. Add founders (4 every 10 years)	72.6	n/a	not tested	30

This population's gene diversity is already below 90%. Given estimated population parameters and the current population size (Strategy A), projections indicate that gene diversity will drop below 10% of its current level within one generation. In order to meet genetic goals, additional founders are necessary for this population (Strategies C and D). The population is also at demographic risk due to the small population size. genetic goals (90% GD over 100 years) will not be met. The TAG will investigate importing founders from other regions and identify future additional spaces for this species in order to increase the target size. The TAG will consider upgrading this population to a PMP in order to monitor these efforts and maintain a long-term viable population.



Collared Peccary *Pecari tajacu* spp.

Proposed program status: PMP (currently DERP)

Projections for this population were based on the Collared Peccary North American Regional studbook (current to 18 June 2007, from studbook keeper Jim Haigwood, Los Angeles Zoo). Genetic data exports for the living population were based on the AZA population. Demographic exports were based on AZA data from 1 January 1970 – present.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	T	λ	GD (%)	N_e/N	% known before exclusions	% known after exclusions
AZA	22	86 (39.47)	61	32	4.7	n/a*	93.49	0.16	44	30.2

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary and Hippo TAG's space survey

T – Generation time (years)

λ - Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

GD – Estimated current gene diversity of captive population

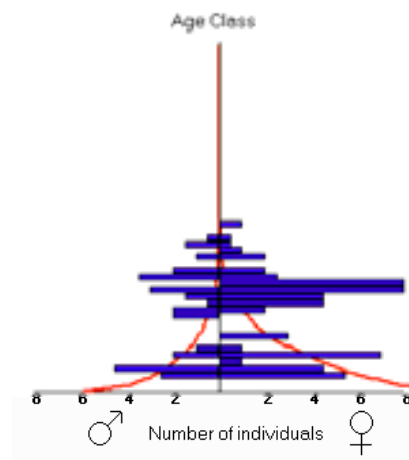
N_e/N – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

* Population designated a phase-out, no growth modeled

Projection strategy	% GD at 100 years	Years to 90% GD	Tested target population size
A. Baseline	42.2	3	86
B. Decrease target size	12.68	1	35

This species shares potential spaces with Chacoan peccary. The TAG is considering decreasing this population in order to allocate more spaces to the Chacoan peccary population. It is recommended that the collared peccary population be designated as a PMP in order to manage and monitor phasing out a portion of the collared peccary population (e.g., those not necessary for themed exhibits). If breeding stops in the collared peccary population, the population is projected to decline from 86 to 53 specimens in 5 years, and to 32 specimens in 10 years (based on the current age structure). A small collared peccary population can be maintained for institutions that have designated Southwestern-themed exhibits, and breeding and recruitment can be monitored to meet these demographic and exhibit needs, but genetic management is not necessary.



Pygmy Hippopotamus

Hexaprotodon liberiensis spp.

Proposed program status: SSP

Projections for this population were based on the Pygmy Hippopotamus North American Regional studbook (from former studbook keeper Steve Thompson, Lincoln Park Zoo), and updated for analyses by the PMC using ISIS data. Genetic data exports for the living population were based on the AZA population. Demographic exports were based on the North American data from 1 January 1965 – 1 May 2005.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	T	λ	GD (%)	N_e/N	% known before exclusions	% known after exclusions
AZA	15	35 (13.22)	30 (13.17)	57	12.9	1.03	95.61	0.20		93.1

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary and Hippo TAG's space survey

T – Generation time (years)

λ - Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

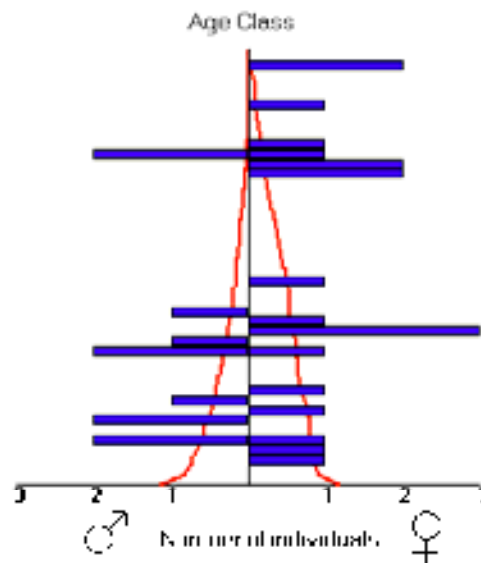
GD – Estimated current gene diversity of captive population

N_e/N – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Tested target population size
A. Baseline	65.17	9	57
B. Increase N_e/N (to 0.30)	74.21	16	57
C. Increase N_e/N (to 0.30), increase target size	77.4	16	75
D. Increase N_e/N (to 0.30), add founders (2 every 10 years)	81.55	19	57

Given current population parameters and the current population size (Strategy A), projections indicate that genetic goals (90% GD over 100 years) will not be met. Increasing the population effective size (Strategy B) improves gene diversity projections by about 10%. Due to space limitations, increasing the target size is not a realistic strategy. Founders may be available for import from Europe, and projections indicate that if two are imported every 10 years (Strategy D), 81% gene diversity could be maintained for 100 years.



River Hippopotamus

Hippopotamus amphibius

Proposed program status: PMP

Projections for this population were based on the Nile Hippo North American Regional studbook (current to 15 May 2007, from studbook keeper John Davis, Riverbanks Zoo). Assumptions used were developed by the PMC for the 2006 PMP, and a few additional assumptions were made during the RCP analysis meeting. Genetic data exports for the living population were based on the AZA population. Demographic exports were based on the North American and Mexican data from 1 January 1950 – present.

Demography & Genetics

	Number of holding institutions	N	N (after exclusions)	Estimated future holding capacity	T	λ	GD (%)	N_e/N	% known before assumptions	% known after assumptions
AZA	37	103 (36.66.1)	91 (33.57.1)	101	15.4	1.04	94.82	0.32	54.1	56.8

N – Current population size

Estimated 3-5 year holding capacity was obtained from the Wild Pig, Peccary and Hippo TAG's space survey

T – Generation time (years)

λ - Potential population growth rate based on historic data for this species ($\lambda = 1.0$, 0% growth)

GD – Estimated current gene diversity of captive population

N_e/N – Ratio of effective population size to actual population size.

% Known – proportion of descendant population with known pedigree.

Projection strategy	% GD at 100 years	Years to 90% GD	Tested target population size
A. Baseline	84.64	45	101

This population's pedigree is only 57% known, and so gene diversity is an estimate. But due to the long generation time, this population is likely to retain whatever gene diversity it currently has for an extended period of time. Given current population parameters and the target size suggested by the TAG space survey, gene diversity is projected to stay within 10% of its current level for 100 years.

The larger problem facing this population is demographic: this is an older population which faces losses due to natural attrition and with limited breeding potential due to a growing proportion of reproductively senescent animals and limited space available for breeding (Figures A and B). Many institutions are interested in holding specimens for exhibit only, not breeding. However, some breeding is necessary in order to maintain a demographically healthy population into the future. Projections indicate that without additional births, the population would decrease to 80 animals in five years, and to 67 in 10 years. The PMP should consider identifying a subset of institutions that can commit to breeding in order to maintain a demographically and genetically viable population and meet current and future exhibit needs.

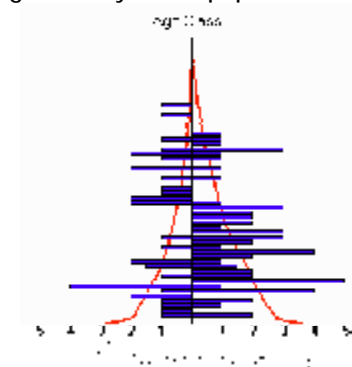


Figure B. AZA river hippopotamus population after exclusion of post-reproductive animals.

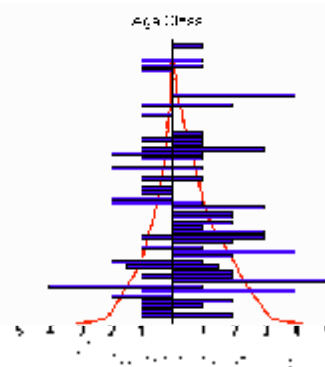


Figure A. Total AZA river hippopotamus population (before exclusion of post-reproductive animals).

WPPH TAG Program Status 2008

Program	Program Type (SSP, PMP, Studbook)	Program Leader Name (Last, First)	Program Leader Institution	Program Leader Phone #	Program Leader E-Mail	Last Publication Date
Babirusa	SSP	Kalk, Penny	WCS/BRONX ZOO	718-220-7113	pkalk@wcs.org	30-Apr-07
Chacoan peccary	SSP	Meritt Jr., Dennis	De Paul University	773-325-4937	dmeritt@depaul.edu	18-Oct-07
Pygmy hippo	SSP	Hohne, Matt	Disney's Animal Kingdom	407-938-2672	Matthew.hohne@disney.com	12-May-08
Visayan warty pig	SSP	Simerson, Curby	San Diego Zoo	619-557-3986	csimerson@sandiegozoo.org	1-Aug-07
Collard peccary	DERP	Haigwood, Jim	Los Angeles Zoo	323-644-6063	jim.haigwood@lacity.org	No Formal Plan Published
Nile hippo PMP	PMP	Davis, John	Riverbanks Zoo and Garden	803-779-8717 X 1246	jdavis@riverbanks.org	13-Sep-06
Red river hog	PMP	Holland, Jeff	Los Angeles Zoo	323-644-4220	jeff.holland@zoo.lacity.org	29-Oct-07
Wart hog	PMP	Smith, Lisa	Zoo Atlanta	404-624-5824	lsmith@zooatlanta.org	Scheduled for 2008
Bornean bearded pig	DERP	Kemp, Yvette	San Diego Zoo	619-231-1515 X4082	beardedpigs@cox.net	No Formal Plan Published
Collard peccary	Studbook	Haigwood, Jim	Los Angeles Zoo	323-644-6063	jim.haigwood@lacity.org	19-Jun-07
Nile hippo	Studbook	Davis, John	Riverbanks Zoo and Garden	803-779-8717 X 1246	jdavis@riverbanks.org	29-May-07
Red river hog	Studbook	Holland, Jeff	Los Angeles Zoo	323-644-4220	jeff.holland@zoo.lacity.org	31-Dec-05
Wart hog	Studbook	Smith, Lisa	Zoo Atlanta	404-624-5824	lsmith@zooatlanta.org	Scheduled for 2008
Visayan warty pig	Studbook	De Gesero, Stephanie	Abilene Zoological Gardens	325-692-8327	zoopersteph@yahoo.com	26-Mar-08
Pygmy hippo	Studbook	Maher, Michelle	Omaha's Henry Doorly Zoo	402-733-8401 ext 5053	p.hippo@omahazoo.com	31-Dec-01
Chacoan peccary	Studbook	Quick, Michael	Sedgwick County Zoo	316-266-8237	mquick@scz.org	10-Apr-07
Babirusa	Studbook	Holland, Jeff	Los Angeles Zoo	323-644-4220	jeff.holland@zoo.lacity.org	16-Oct-06
Bornean bearded pig	Studbook	Kemp, Yvette	San Diego Zoo	619-231-1515 X4082	beardedpigs@cox.net	6-Aug-07

RED RIVER HOG PMP GUIDELINES FOR THE TRANSPORT OF RED RIVER HOGS

In 2005/2006 there was cause for concern regarding the safe transport of red river hogs among our institutions. During that period of 23 months five animals died during transit with four of those having taken place within in a 9 month period. Despite these recent problems, it should be pointed out that in the 27 months between 2004/2006 we have moved 50 red river hogs among institutions over short and long distances and overseas to Japan with only these five losses. Thus, overall we have been successful in safely transporting red river hogs. Nevertheless we have evaluated the circumstances surrounding these deaths and are making the following recommendations that will hopefully prevent any further deaths associated with transport.

The common denominator amongst all five transport related deaths was that they were each transported in crates. Four of the five overheated in the last hours of the transport and one was attributed to mishandling by airline cargo staff. Therefore, taking what we know into consideration Curby Simerson, Ann Petric, Penny Kalk, Achim Winkler and I are suggesting that the following guidelines be taken into consideration when transporting red river hogs.

1. Red river hogs have been successfully transported in crates. However it is felt that they do best in crates that are spacious, that they can easily turn around in, and are very well ventilated. The policy in Europe has always been to use spacious crates, in which the animals can easily turn around and they have never experienced any problems. A good guideline for the **Interior dimensions** on an adult red river hog crate could be 36" H x 31" W x 48" L (91 cm H x 79 cm W x 122 cm L) +/- a couple inches with each dimension. Because different individuals will vary in size by a few inches. This will allow each animal to turn around with a minimum space of 6in (15cm) over the highest part of the back of the animal. **Depending on the actual size of the animal, these dimensions can be adjusted. Keep in mind that the exterior dimensions will be larger and could interfere with airline transportation so you will need to adjust accordingly. The primary thought to keep in mind is to provide room to move around and good ventilation.** We realize that this is a large size crate, but the animals seem much more relaxed in them.

2. Each animal should ideally be acclimated to the crate prior to transport to determine if this is the best method of transport for that particular animal. If possible this should include actually closing the animal into the crate for a period of time and moving the crate from one place to another.
3. Food should always be provided for the hogs during transport.
4. Transporting hogs in a trailer may be the safest way to transport. A trailer provides plenty of space for the animal to move around in and they can usually be cared for well in a trailer.
5. Hogs tend to travel better with another cohort than they do by themselves. Therefore, transporting the animals together in a trailer can be beneficial if the situation allows. For young animals it is usually best to transport them together, again in a very spacious crate.
6. Sedation of the animal is not always required and each animal should be evaluated for this need.
7. **Every transport needs to be evaluated separately. The key issue is that as much space as possible ought to be provided. Transporting several animals together, i.e. on a trailer, very much depends on the character of the individual animals. Some animals simply are not compatible with each other, so they should be transported separately. In many cases it is also not advisable to transport an adult male together with adult females. However, again this depends on the character of the animals.**
8. Often the animals are quite stressed from the transport, particularly if they have traveled alone, and it is beneficial to have a second animal available to go through quarantine with them. If you have a second hog on grounds that can go through quarantine with the new arrival every effort should be made to make this possible. Sometimes just the second animal being next door with some visual access is enough to calm the new arrival, but on occasion getting the animals together is what works the best.

It is our hope that if the above guidelines are considered in preparation for the transport of red river hogs any further transport related deaths can be avoided. **It is important to remember that these are guidelines and not fixed procedures.** If anyone has any further questions regarding the transport of their particular red river hogs please feel free to contact anyone of us and we will be glad to assist where we can.

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