



ACTION INDONESIA

GLOBAL SPECIES MANAGEMENT PLAN

FOR BANTENG, ANOA AND BABIRUSA



ANNUAL REPORT 2016



ASSOCIATION
OF ZOO &
AQUARIUMS



In a nut shell – the GSMPs 2016

Banteng, anoa and babirusa occur in Indonesia and are threatened with extinction.

The Global Species Management Plans (GSMPs) for banteng, anoa and babirusa were created in 2016, and aim to promote international collaboration to ensure the long-term survival of these species by a combination of *ex situ* and *in situ* activities.

With you as our partners, supporters and collaborators we achieved important **successes in 2016**:

- United 6 main partners to form the basis of the GSMPs
- In a 6-day GSMP planning workshop gathered over 60 representatives from zoos, field sites, Indonesian government, universities and the International Union for the Conservation of Nature IUCN
- Established the first-ever ungulate GSMPs
- Selected a steering committee for each GSMP with representatives of all partners as well as *ex situ* and *in situ* experts
- Agreed on an action plan for each GSMP
- Had conference calls for each GSMP every 2 months to update action plans
- Raised over £70,000 to fund GSMP activities
- Provided the first breeding and transfer plans for banteng, anoa and babirusa in Indonesia
- Conducted a survey in 8 Indonesian zoos to prepare capacity building
- Established a small grant scheme to fund field conservation initiatives
- Supported 3 *in situ* conservation projects
- Conducted 3 intensive field trips to East Java and Sulawesi to prepare long-term *in situ* conservation involvement
- Visited 4 major conferences in 3 countries and numerous partner meetings to promote the GSMPs

Your support was the key to these successes!

In 2017 we will:

- Give support to Indonesian zoos to realise the Indonesian breeding and transfer plan
- Provide intensive training workshops for Indonesian zoos and rescue centres
- Finalise best practice husbandry guidelines for banteng, anoa and babirusa
- Pursue genetic research to support the effective breeding of the species' captive populations
- Initiate a long-term *in situ* project for banteng in East Java
- Provide further small grants for conservation initiatives in the field

THANK YOU for your contributions!

We look forward to continuing our collaboration!

James Burton
Chair of the AWCSG



Terry Hornsey
Convenor
Anoa GSMP



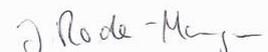
Jeff Holland
Convenor
Babirusa GSMP



Ivan Chandra
Convenor
Banteng GSMP



Johanna Rode-Margono
Programme Officer
AWCSG





1. Introduction

1.1 What are the GSMPs?

Global Species Management Plans (GSMPs) provide a framework for regional zoo associations to work together on a global plan for the *ex situ* activities for a particular species. GSMPs are administered by the World Association for Zoos and Aquariums (WAZA) and run by committees of representative of the regional associations participating in the programmes.

In 2014, an MOU was signed between the Indonesian Zoo & Aquarium Association (PKBSI), the European Association of Zoos and Aquariums (EAZA), the Association of Zoos & Aquariums (AZA), the IUCN Species Survival Commission (SSC), the IUCN SSC Asian Wild Cattle Specialist Group (AWCSG) and the IUCN SSC Wild Pig Specialist Group (WPSG), to collaborate for the conservation of the three threatened taxa banteng (*Bos javanicus*), anoa (*Bubalus* spp., two species) and babirusa (*Babirusa* spp., three species) (Figure 1).



Figure 1: The three GSMP taxa: banteng, anoa and babirusa (photos by Chester Zoo)

This agreement was witnessed by the Indonesian Ministry of Environment and Forestry (authority for species conservation in Indonesia) and supported by the WAZA Committee for Population Management. Following the first GSMP planning workshops held in Bogor, Indonesia (Figure 2), in January 2016, the GSMP were endorsed by WAZA in March 2016, and the GSMPs for banteng, anoa and babirusa officially created.



Figure 2: GSMP planning workshops held in Bogor, Indonesia, in January 2016

1.2 Roles of the GSMPs

The GSMPs for banteng, anoa and babirusa aim to promote the collaboration between three regional zoo associations, the respective IUCN SSC Specialist Groups and the Indonesian Ministry for Environment and Forestry to ensure the long-term survival of banteng, anoa and babirusa by a combination of *ex situ* and *in situ* activities. As agreed during the workshops in January 2016, the roles of the GSMPs are to:

- ROLE 1 Facilitate the maintenance of a demographically and genetically healthy global *ex situ* population, including the provision of breeding and transfer plans, and facilitation of transfers
- ROLE 2 Support the needs and goals of the regional *ex situ* programmes by supporting collaboration, including initiation of required research, sharing of information and expertise, and capacity building
- ROLE 3 Promote an effective interface between *ex situ* and *in situ* management that supports the conservation of the three taxa
- ROLE 4 Encourage support of *in situ* conservation



1.3 Partners of the GSMPs

The founding partners of the GSMPs are the regional zoo associations PKBSI representing the SEAZA region, EAZA for Europe, AZA for North America, the SSC and their respective IUCN SSC Specialist Groups AWCSG and WPSG, the Indonesian Ministry of Environment and Forestry, and the Indonesian Institute of Sciences (LIPI) as the official scientific authority of the Indonesian government. Especially the in-country GSMP partners from PKBSI, the Indonesian government and LIPI were crucial in the successful establishment and development of the GSMPs in 2016.

2. Your contributions in 2016

The roles of the GSMPs in 2016 and the related activities (detailed in section 3) were only possible due to the generous contributions from your institutions and organisations. Contributions came in various forms: technical input and expertise sharing, staff time, travelling to meetings and other activities, and also financial contributions.

As an example, several institutions sent their staff to help in the zoo survey that was conducted to understand the situation of keeping banteng, anoa and babirusa in a range of Indonesian zoos, and needs for capacity building. The expert team visited zoos on the islands of Sulawesi and Java and had discussions with the Indonesian staff. The expertise in husbandry and related fields of the survey team was essential to understand what training is needed in Indonesian zoos.

Travelling to Indonesia is not necessarily required to support the GSMPs. Several institutions freed work time for staff to work on various activities, such as the analysis of studbooks and preparation of breeding and transfer recommendations, or the production of communication and education materials.

Regarding financial support, Table 1 shows which GSMP activities have been funded by each of your institutions or organisations. The total amount raised in 2016 added up to £70,436.57. Remaining funds at the end of the year summed up to £10,618.31, of which £7884.00 are already ear-marked for a survey on hairy babirusa on the island of Buru and a 4th *in situ* project to be supported.

The first section of Table 4 shows contributions to GSMP unrestricted funding, which was allocated to various activities, as approved by GSMP committees. Unrestricted funding is important, as various activities are essential to the functioning of the GSMPs, but may need to be funded urgently, as opposed to long-planned distinct activities.

The second part of Table 1 shows contributions to specific activities (restricted funding). Details on activities that your institution supported, as listed in Table 1, can be found in section 3 of this report. If no role is specified for an activity, the funded activity supported all roles of the GSMPs. Annex 1 is available on request and shows money that was spent on various activities relating to the four roles of the GSMPs (section 1.2).

The Zoological Society for the Conservation of Species and Populations (ZGAP), Los Angeles Zoo and Chester Zoo have furthermore assisted in collecting financial contributions.

Table 1: Budget and expenses for GSMP activities 2016

Institution / Organisation	Contribution
Unrestricted contributions	
Houston Zoo, US	
Jacksonville Zoo and Gardens, US	
Los Angeles Zoo, US	
Tampas Lowry Park Zoo, US	Used for:
Micanopy Zoological Preserve, US	Staff travel of AWCSG key staff, travel of Indonesian partners (ROLE 2, 4), <i>in situ</i> projects (ROLE 4)
Point Defiance Zoo & Aquarium, US	
Roger Williams Park Zoo, US	
White Oak Conservation Foundation	
Restricted contributions	
Africa Alive! UK	Staff travel of AWCSG key staff, staff time
Antwerp Zoo, Belgium	GSMP workshops (ROLE 1)
[B]BKSDA - Provincial and local conservation authorities	Staff travel and time
Bogor Agricultural University, Indonesia	Staff travel and time
Center for Conservation of Tropical Ungulates, US	Staff travel of AWCSG key staff, contribution to unrestricted funding), travel of Indonesian partners (ROLE 2, 4), <i>in situ</i> projects (ROLE 4), staff time
Chester Zoo, UK	Salaries of AWCSG key staff, Indonesian Action Plans, staff travel of AWCSG key staff, zoo education material (ROLE 3), <i>in situ</i> projects (ROLE 4)
Conservation Breeding Specialist Group, Europe	Staff travel and time
Copenhagen Zoo, Denmark	Staff travel and time
EAZA	Staff travel and time
Gadjah Mada University, Indonesia	Staff travel and time
Global Wildlife Conservation, US	Salaries of AWCSG key staff, staff travel of AWCSG key staff
Indonesian Institute of Sciences, Indonesia	Staff travel and time
Konservasi Keanekaragaman Hayati (KKH) of the Indonesian Ministry of Environment and Forestry	Staff travel and time
Leipzig Zoo, Germany	Indonesian Action Plans, staff travel and time
Lincoln Park Zoo, US	Staff travel and time
Indonesian National Park offices that participated in January workshop	Staff travel and time
Opel Zoo, Germany	GSMP workshops (ROLE 1), staff travel and time
Saint Louis Zoo, US	Staff travel and time
San Diego Zoo Wild Animal Park, US	Staff travel and time
Taman Safari International, Indonesia	GSMP workshops (ROLE 1), staff travel and time
Utah's Hogle Zoo, US	Indonesian Action Plans
WAZA	Staff travel of AWCSG key staff
Wilhelma Zoo, Germany	GSMP workshops (ROLE 1)



3. Details of Achievements

Setting up and running the GSMPs

The first step of planning and prioritizing activities of the GSMPs was a **6-day workshop** in January 2016. The IUCN SSC Conservation Breeding Specialist Group facilitated the workshop. Various staff of the Indonesian Ministry for Environment and Forestry, *in situ* conservation authorities (BBKSDA), National Park staff and Indonesian university representatives, gave their priceless input in the discussions. There was also a strong representation from EAZA and AZA institutions (Africa Alive!, Center for Conservation of Tropical Ungulates, Chester Zoo, Copenhagen Zoo, EAZA Office, Leipzig Zoo, Opel Zoo, Point Defiance Zoo and Aquarium).

Action plans that were agreed upon during the planning workshops were compiled by the participants. The GSMP committees were approved in March (Table 2) and since then they are updated in action plans in two-monthly online conferences. The institutions of the committee members provided time for their staff to join and prepare calls.

In July 2016, the Indonesian government invited GSMP representatives for several **government meetings** to discuss the GSMP activities and identify areas where the government, national and international partners could support the implementation of the GSMPs. These meetings were joined by the Director General, the Director and staff of the *ex situ* and *in situ* conservation sections of the government, Chairman and Secretary of the Indonesian Zoos and Aquariums Association, as well as Thomas Kauffels (Opel Zoo), Tim Rowlands (Chester Zoo), James Burton (AWCSG), Johanna Rode-Margono (Chester Zoo) and Steve Metzler (San Diego Zoo). One of the outcomes was that the government will support breeding recommendations generated by the GSMP population biologists to be passed on to Indonesian zoos. This commitment is very important, as all animals of protected species in Indonesia officially belong to the Indonesian government.

Promotion of the GSMPs was ensured through two GSMP-specific meetings at the EAZA Annual Conference in Belfast in September and the Joint TAG Chairs meeting and AZA meeting in Omaha in March, and various presentations at conferences and partner visits in Indonesia. Tony Sumampau from Taman Safari Indonesia and PKBSI joined both meetings, and Puja Utama from the Indonesian government joined the Joint TAG Chairs meeting.

At the end of 2016 three **GSMP Masterplans** have been compiled and will be finalised early 2017. These documents describe the species-specific conservation situation, and set a framework of the planned GSMP activities by formalising the GSMP roles and general approaches.

All these activities, including the implementation of the roles below, required a considerable amount of **administration and coordination**. This was delivered mainly by James Burton (JB), chair of the AWCSG, and Johanna Rode-Margono (JRM), AWCSG programme officer and Field Programme Coordinator for South East Asia of Chester Zoo, whose work was supported by various institutions supported. TSI staff also had a substantial share in this work, including providing their expertise and arranging, travel and accommodation of participants, and other aspects.

Table 2: GSMP Committee members as of January 2017

Name	GSMP Role	Affiliation
BANTENG		
Ivan Chandra	Convener, International Studbook keeper	TSI, Indonesia
Steve Metzler	Co-convener, AZA representative	San Diego Zoo, US
Jamie Ivy	Population biologists	San Diego Zoo, US
Tony Sumampau	PKBSI representative	TSI, PKBSI, Indonesia
Tim Rowlands	EAZA Banteng EEP Coordinator, EAZA representative	Chester Zoo, UK
Desy Satya Chandadewi	Indonesian government representative	Indonesian government
Gono Semiadi	Indonesian scientific authority	Indonesian Institute of Sciences LIPI
Satyawan Pudyatmoko	<i>In situ</i> expert	Gadjah Mada University, Indonesia
James Burton	<i>In situ</i> expert, Chair AWCSG	AWCSG
ANOA		
Terry Hornsey	Convener, EAZA Cattle and Camelid Taxon Advisory Group Chair	Africa Alive! UK
Yohana Tri Hastuti	Co-convener	TSI, Indonesia
Ikeu Sri Rejeki	Indonesian government representative	Indonesian government
Tony Sumampau	PKBSI representative	TSI, PKBSI, Indonesia
Wirdateti	Indonesian scientific authority representative	Indonesian Institute of Sciences LIPI
John Andrews	Population biologists	AZA Population Management Center, Lincoln Park Zoo, US
Gerd Noetzold	Anoa International Studbook Keeper, EAZA representative	Leipzig Zoo, Germany
Telena Walsh	AZA Anoa SSP Coordinator, AZA representative	Point Defiance Zoo & Aquarium, US
Abdul Haris Mustari	<i>In situ</i> expert	Lecturer at IBP University, Indonesia
James Burton	<i>In situ</i> expert, Chair AWCSG	IUCN SSC AWCSG
BABIRUSA		
Jeff Holland*	Convener, AZA Wild Pig, Peccary and Hippo TAG Vice Chair and AZA Babirusa SSP Coordinator, AZA representative	CCTU, US
To be appointed	Co-convener – to be confirmed by PKBSI	-
Joko Nugroho	Indonesian government representative	Indonesian government
Gono Semiadi	Indonesian Scientific Authority	Indonesian Institute of Sciences LIPI
Kristin Leus	Population biologist, EAZA and Deputy Chair WPSG	Copenhagen Zoo, Denmark / CBSG
Tony Sumampau	PKBSI representative	TSI, PKBSI, Indonesia
Thomas Kauffels	Babirusa International Studbook Keeper, EAZA EEP coordinator, EAZA representative	Opel-Zoo, Germany
Abdul Haris Mustari	<i>In situ</i> expert	Lecturer at IBP University, Indonesia
Erik Meijaard	<i>In situ</i> expert, Chair of WPSG	IUCN SSC Wild Pig Specialist Group

* As of May 2017 Joe Forys, from Audubon Nature Institute, took over this role.

The next sections describe progress achieved for each of the four agreed roles of the GSMPs in 2016.

ROLE 1: Maintenance of a demographically and genetically healthy global *ex situ* population

Population biologists and the international and regional studbook (EEP, SSP) keepers of the three taxa worked together to update their population data, partly involving visits of several Indonesian institutions to confirm data. Based on these data, the population biologists wrote species-specific **breeding and transfer plans** for Indonesian populations, which were then re-written for each Indonesian institution for easy application. These plans are in process to become endorsed by PKBSI and the Ministry for Environment and Forestry, for easier enforcement at institutional level. These breeding recommendations are a huge step forwards, because they are the first time that coordinated recommendations have been given to enhance the effectiveness maintaining genetic diversity.

Representatives of each regional zoo association gave in total four presentations at two PKBSI conferences in July and October 2016, **promoting the importance of collaborative breeding**.

ROLE 2: Support the needs and goals of the regional *ex situ* programmes

A team of nine GSMP committee members from PKBSI, EAZA and AZA, independent PKBSI members and AWCSG staff conducted a **zoo survey** in seven Indonesian zoos in July 2016, to assess the situation in these zoos (e.g. keeper skills and facility condition) and needs for support and capacity building of these institutions (Figure 3). A report was compiled that summarises the observations and proposes a training schedule for the next three years (2017-2019), that will form the basis for training events starting in 2017.

To support the conservation education work of Indonesian zoos, the AWCSG has teamed up with the Discovery and Learning Department of Chester Zoo to provide an **education toolbox** for Indonesian zoos, with signage, a photo and video library, and various education materials, free to download from the AWCSG website. First drafts have been finalised (Figure 4), as well as a GSMP logo, and further materials will be finished soon. An online survey for Indonesian Zoo educators – similar to the zoo survey – has been prepared to retrieve information on the current activities and needs of Indonesian zoo education departments. The results are expected to lead to a better match between the needs and offered support, and enable the planning for an effective zoo education workshop.

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Figure 3: International team visits eight Indonesian zoos to prepare training events

Figure 4: Draft signage for babirusa exhibit. Final signage designs to be offered for zoos for free use.



BABIRUSA

Babirusa celebensis



Babirusa are an incredibly rare species of pig and are only found in the wild on the island of Sulawesi.

Males can be recognised by their distinctive tusks. These are actually teeth which grow upwards through the skin of their nose and curve towards their foreheads. Scientists are not sure exactly what they are for.



HAVE A LOOK



KEY FACTS:

DIET
OMNIVOROUS
WILL EAT LEAVES, FRUITS
& SMALL ANIMALS



PREFERRED HABITAT
RAINFOREST



60-100 KG
WEIGHT



GESTATION
155-158 DAYS



YOUNG:



LIFESPAN
UP TO 24 YEARS



MADE BY

CHESTER ZOO



ROLE 3: Effective interface between *ex situ* and *in situ* management

This role was included to facilitate the effective use of *ex situ* resources, knowledge and skills to support *in situ* activities. Through **field visits** and further communication with stakeholders in the field throughout 2016, detailed plans have been completed to further train government authorities and other entities in handling, initial care, husbandry and transport of animals (e.g. Manado Anoa Research Centre) of rescued anoa and babirusa on Sulawesi. Staff of San Diego Zoo and Chester Zoo joined these field visits.

A resulting workshop will take place in October 2017 and involve a team of 5-10 international and Indonesian experts. The **planning of this workshop** has been ongoing since 2016 thanks to various institutions that committed to help in the preparations and delivery (Bogor Agricultural University, Center for Conservation of Tropical Ungulates, Chester Zoo, Leipzig Zoo, Taman Safari Indonesia). First approaches have been taken during field visits to support community education and awareness programmes in banteng habitat, by involving international zoo education teams, e.g. the Discovery and Learning Department of Chester Zoo, UK.

ROLE 4: *In situ* conservation

In situ activities were separated into two types: support of short-term projects on banteng, anoa and/or babirusa conservation, and the preparation of one or several long-term conservation projects for one or several of the three taxa. In September 2016, a **GSMP small grant scheme** has been launched, with grants provided to projects of 6-12 months duration. The rigorous selection process involves the review and recommendations by the *in situ* experts on the GSMP committees and approval by all committee members. The funding of three projects has so far been approved with the help of the GSMP committee *in situ* experts and independent *in situ* experts:

- a) Multi-site conservation education outreach programme on Sulawesi,
 - Led by the Alliance for Tompotika Conservation, Central Sulawesi
 - Aim: Design and production of curriculum and outreach materials, followed by delivery in three Sulawesi provinces, in order to raise awareness and ultimately reduce poaching pressure (Figure 5)
 - First phase of a 2-year project
 - Project report expected mid-2017

- b) Hairy babirusa (*Babyrousa babyrussa*) survey on the island of Buru, Maluku Islands
 - Indonesian team, with support of Alastair Macdonald, The University of Edinburgh
 - Aim: Identification of the current population status of babirusa and other wild pigs on the island of Buru, including distribution, trends over the past 20 years and current and prospective threats. This is urgently needed because the last records were from 1990 and it is expected that there has been a decline in the population since then.
 - Methods: Questionnaires and interviews with local communities on Buru island
 - To be conducted in April/May 2017

- c) Camera trap data analysis workshop and data analysis of existent camera trap data on banteng and dhole (*Cuon alpinus*) at Ujung Kulon National Park, West Java
- Led by Mark Rademaker (University Gadjah Mada), Shafia Zahra, Johanna Rode-Margono (Chester Zoo)
 - Aims: (1) develop skills of National Park staff in camera trap data analysis, (2) analyse existing camera trap data on banteng and dhole, as so far banteng camera trap data has only been analysed in relation to potential competition with Javan rhino
 - Methods: Workshop with National Park staff and data analysis with a team of recent Indonesian graduates and National Park staff on site
 - To be conducted mid-2017, depending on permits.

To prepare long-term projects, a team of GSMP members including *in situ* experts from universities and the Indonesian government, conducted **field visits** to Sulawesi (Nature Reserves Feruhumpenai, South Sulawesi, Morowali, Central Sulawesi) and to East Java (National Parks Baluran, Alas Purwo and Meru Betiri) in August and October 2016 (Figure 6). These visits aimed to establish first contacts, discuss current conditions, needs and options for involvement with the respective authority offices, and to visit the field site. A comprehensive proposal for a long-term project in East Java, involving the three National Parks, is currently being written up.



Figure 5: Examples of outreach materials produced by the Alliance for Tompotika Conservation, supported by a GSMP *in situ* grant.

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Figure 6: Banteng in Alas Purwo National Park



4. Outlook for 2017

Your contributions made the GSMP activities in 2016 happen!

We hope that in 2017 we can continue our work with a number of activities. Especially, we will focus on capacity building and further building links with Indonesian zoos. This will help to implement the first Indonesian breeding and transfer recommendations, which are crucial to the success of the GSMPs. We will also continue supporting short term field projects to learn more about the species and their populations, and support awareness raising and species protection.

A short outlook of activities planned in 2017 is given in Table 3. We will be looking for your expertise and your funding to be able to conduct these. If you are interested to help and want to learn more, then please contact either of the GSMP Conveners (Anoa GSMP: Terry Hornsey, terry.hornsey@africa-alive.co.uk; Banteng GSMP: Steve Metzler, SMetzler@sandiegozoo.org; Babirusa GSMP: Joe Forys, jforys@AudubonInstitute.org) or James Burton: jamesaburton@yahoo.co.uk.

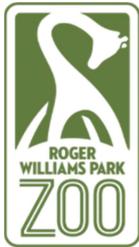
We need your help for the 2017 activities!

Let's stay in touch!

Table 3: GSMP activities planned for 2017

Roles	Activities
ROLE 1	<ul style="list-style-type: none"> • Implementation of breeding and transfer plans by Indonesian zoos • Banteng transportation workshop to ensure welfare of animals and safety of people during transport • Further presentations at PKBSI conferences to enforce promotion of cooperative breeding • Genetic research to determine the origins in the wild of zoo animals of anoa and babirusa
ROLE 2	<ul style="list-style-type: none"> • A set of best practice guidelines for husbandry of the three taxa, translated to Indonesian language • Completion of Indonesian zoo educator survey • Workshop for Indonesian zoo educator, integrated into the October PKBSI conference
ROLE 3	<ul style="list-style-type: none"> • Conducting a workshop for government authorities and rescue centres confiscating anoa and babirusa on Sulawesi, in handling, initial care, husbandry and transport • Concrete plan for involvement in community education and awareness at Alas Purwo National Park, with initial visits by international team to plan strategy and activities
ROLE 4	<ul style="list-style-type: none"> • Finalize of East Java long-term conservation project proposal, fund-raising, MOU with National Park, and finalised strategic plan and activity plan • Funding of at least two more short-term conservation projects for banteng, anoa and/or babirusa conservation





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Citation: Rode-Margono EJ, Burton J. 2017. Action Indonesia – Global Species Management Plans for banteng, anoa and babirusa. Annual Report 2016. Available from: Asian Wild Cattle Specialist Group.