



ACTION INDONESIA

GLOBAL SPECIES MANAGEMENT PLAN

FOR ANOA, BANTENG AND BABIRUSA



ANNUAL REPORT 2020

Cover photo: Banteng. Photo: Bali Safari

ACTION INDONESIA FOUNDING MEMBERS:



World Association of
Zoos and Aquariums
WAZA | *United for
Conservation*

**ASSOCIATION
OF ZOOS &
AQUARIUMS**



AWCSG
Asian
Wild
Cattle
Specialist
Group



In a nutshell: Achievements of Action Indonesia GSMPs in 2020

Anoa, banteng and babirusa all occur within Indonesia and are under threat of extinction due to hunting and habitat loss. The Action Indonesia Partnership was created in 2016 with the aim to promote international collaboration to ensure the long-term survival of these species by a combination of *ex situ* and *in situ* activities. This used WAZA's Global Species Management Plans (GSMPs) frameworks for banteng, anoa and babirusa.

This year has been incredibly challenging for everyone due to the global Covid-19 pandemic. We are very thankful for your continued support, partnership and collaboration. Although in-person activities were not feasible, thanks to you the Action Indonesia GSMPs were able to adapt and progress in 2020. Below is a summary of our achievements:

- The GSMP Masterplan for 2018-2021 was approved by WAZA.
- Much successful breeding of GSMP species has occurred following the second set of breeding and transfer recommendations developed and distributed to Indonesian zoos in 2018.
- The second Action Indonesia Day was held on August 16th to raise awareness for GSMP species. Over 30 organisations got involved for a successful day of virtual events and activities.
- A joint GSMP and PKBSI team visited 12 zoos in Java and Sumatra to engage, update progress with the breeding recommendations and GSMP activities, and to provide input and advice.
- The GSMP and the PKBSI Education Division planned and delivered ten virtual husbandry training webinars to Indonesian zoo staff.
- An interim report was produced on how to improve the handling of rescued and confiscated anoa and babirusa, following assessments of regional forestry offices and national parks in Sulawesi in 2019.
- The GSMP published an update on the successes and lessons learnt by the Action Indonesia partnership over the last four years in the BULLETIN newsletter. Awareness of the GSMP was also raised through a publication in the ZAA Journal.
- The permit allowing PKBSI and LIPI to conduct genetic sampling of anoa, banteng and babirusa was issued in November 2020. Sampling can now begin in the first quarter of 2021.
- GSMP activities were highlighted in the PKBSI Annual Report and during the PKBSI Annual Conference.
- The GSMP works closely with the Banteng EEP and our activities were featured in the Banteng European Studbook published this year.
- The Education Working Group improved the Action Indonesia [website](#) to promote our work and provide the programme's education resources and additional information. We also launched new social media pages on [Facebook](#) and [Instagram](#).
- We continued certain fundraising efforts where this was possible to support GSMP activities.

Thank you for your support and contributions! We look forward to continuing our collaboration.



James Burton
Chair
IUCN SSC Asian Wild
Cattle Specialist Group



Terry Hornsey
Convenor
Anoa GSMP



Joe Forys
Convenor
Babirusa GSMP



Ivan Chandra
Convenor
Banteng GSMP



Corinne Bailey
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IUCN SSC Asian Wild
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Background:

What are GSMPs?

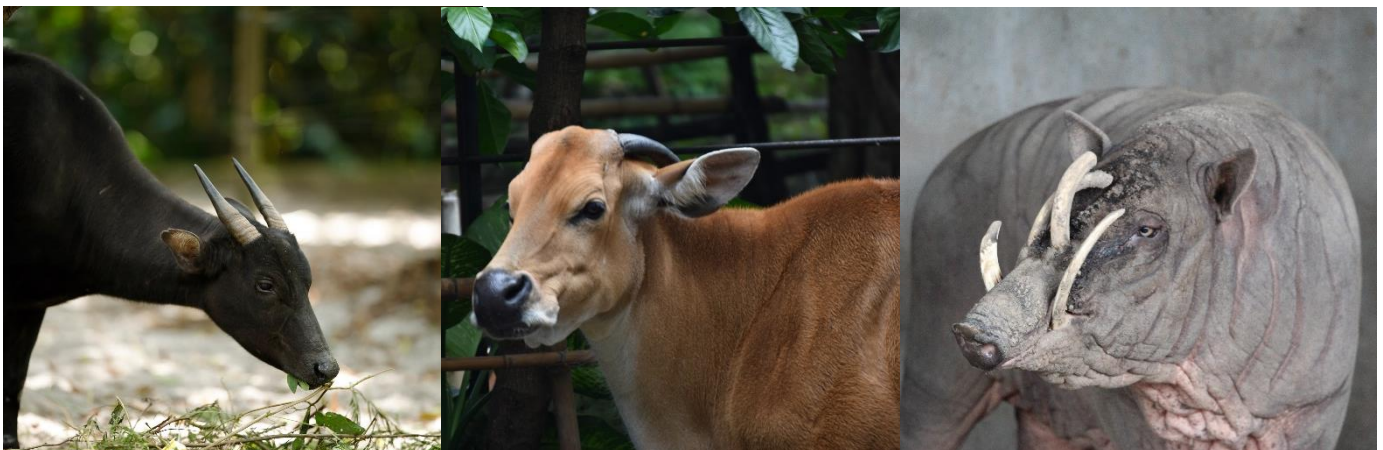
Global Species Management Plans (GSMPs) bring together zoos, governments, and conservation organisations from multiple regions to achieve globally agreed *ex situ* and *in situ* conservation goals for a species. The GSMPs are administered by the World Association for Zoos and Aquaria (WAZA) and run by committees of representatives of the regional zoo associations participating in the collaboration.

Action Indonesia GSMPs

The partners of the Action Indonesia GSMPs collaborate for the conservation of three threatened Indonesian taxa; **anoa** (*Bubalus depressicornis* and *B. quarlesi*), **banteng** (*Bos javanicus*) and **babirusa** (*Babyrousa* spp.; three species). We are also working closely with the **Sumatran tiger** (*Panthera tigris sumatrae*) GSMP to align our activities where possible. These GSMPs use the One Plan Approach to combine the skills, resources and expertise of both the zoo community and *in situ* practitioners. The coordination of the GSMPs is carried out by the Indonesian Zoo and Aquarium Association (PKBSI) and the IUCN SSC Asian Wild Cattle Specialist Group.

Find out more about the development of the Action Indonesia GSMPs and their conservation activities and achievements in our recently published article:

[Progress of the Action Indonesia GSMPs 2016-2020: Global collaboration to conserve the anoa, banteng, babirusa and Sumatran tiger](#)



The three GSMP taxa: anoa (Photo: Bali Safari), banteng (Photo: Surabaya Zoo) and babirusa (Photo: Surabaya Zoo)

Table 1 Action Indonesia Partner and supporter contributions; all funding, technical and in-kind support for the GSMPs in 2020

Institute/Organisation/Individual	Contribution
Unrestricted funds	
Nashville Zoo, USA Marcus Burkhardt, Germany Zoo Miami, USA Toronto Zoo, Canada West Midland Safari Park, UK Saint Louis Zoological Park, USA	Funds to be used to for projects identified as priorities by Working Group leaders.
Restricted funds	
Zoo Miami, USA	Hosting the Action Indonesia website
Chester Zoo, UK	Coordination of the Action Indonesia GSMPs; salary and travel of AWCSG PO and AWCSG Chair; staff time for training and education materials
Global Wildlife Conservation, USA	Coordination of the Action Indonesia GSMPs; salary and travel of AWCSG PO and AWCSG Chair
Zo Wroclaw, Poland	Banteng <i>in situ</i> population monitoring
San Diego Zoo Global, USA	Coordination of the Action Indonesia GSMPs; salary and travel of AWCSG Chair
Centre for the Conservation of Tropical Ungulates, USA	Coordination of the Action Indonesia GSMPs; staff time for workshops and education materials
Audubon Zoo, USA	Staff time and travel for the PKBSI-GSMP Zoo visits
Taman Safari Indonesia Bogor, Indonesia	Contribution to PKBSI-GSMP Programme Officer salary
Batu Secret Zoo, Jatim Park, Indonesia	Contribution to PKBSI-GSMP Programme Officer salary
Alas Purwo National Park	Banteng <i>in situ</i> population monitoring; staff time and funds
In-kind support	
Chester Zoo, UK	Staff time coordinating the husbandry training framework
Queen Mary University of London, UK	Mentoring population genetics for pkbsi and genetic technical advice
Copenhagen Zoo, Denmark	Mentoring and technical advice for PKBSI-led genetic project
Conservation Planning Specialist Group, USA	Mentoring the PKBSI-GSMP Programme Officer in facilitation for conservation planning.
Audubon Zoo, USA	Staff time and travel
Ragunan Zoo; Taman Safari Indonesia Bogor; Cikembulan Zoo; Bandung Zoological Garden; Surabaya Zoo; Maharani Zoo & Goa; Batu Secret Zoo; Taman Safari Indonesia Prigen; Taru Jurug Zoo; R Zoo & Park; Siantar Zoo; Medan Zoo; all Indonesia	Logistical support during the PKBSI-GSMP zoo visits to Java and Sumatra in March
ZSL London, UK; ZSL Whipsnade, UK; Allwetter Zoo, Germany; Ragunan Zoo, Indonesia; Singapore Zoo, Singapore; Gembira Loka Zoo, Indonesia; Lincoln Park Zoo, USA; Point Defiance Zoo & Aquarium, USA; Surabaya Zoo, Indonesia; Bali Safari, Indonesia; Dallas Zoo, USA; Bandung Zoological Garden, Indonesia; Direktorat KKH, Indonesia; Taman Safari Indonesia Bogor, Indonesia; San Diego Zoo Safari Park, USA; PKBSI, Indonesia	Staff time: presenting and moderating in the virtual husbandry training sessions. For more information see Table 3.
WAZA Executive Office, Spain	Staff time presenting in the virtual husbandry training sessions and reviewing the article on the GSMP for BULLETin.

Thanks to all Indonesian zoos and institutions that participated in the virtual husbandry training, and to all the zoos and institutions around the world that participated in Action Indonesia Day 2020.

Details of Achievements

In this report, we describe GSMP activities in relation to their contribution to the outcomes and goals outlined below. We use a Theory of Change process to guide our activities and monitor their progress in addressing threats to the GSMP species. This approach ensures that all GSMP activities contribute effectively to their overall aim of stable and secure populations of the three species.

We detail our achievements in three main areas of activity that align to the following goals:

1. *Ex situ* conservation: Healthy back up *ex situ* populations fit for reintroduction
2. Education: Action and support for conservation of target species
3. *In situ* conservation: Stable and safe *in situ* populations

Many of the activities that were planned for 2020 needed to be adjusted or postponed due to the Covid-19 pandemic, which heavily restricted travel and in-person activities from March onwards. A further challenge to delivering activities was the impact of the pandemic on work schedules, as many were unable to work as normal due to the challenges of zoo closures.

Activities in 2020 were therefore focused primarily on *ex situ* activities and communications that could be conducted virtually. Major success in this area included the development and implementation of virtual husbandry training sessions for Indonesian zoos and supporting Indonesian facilities to increase capacity through engagement and breeding and transfer recommendations. Good progress has also been made with education activities, with the second Action Indonesia Day held in August this year.



John Andrews from Lincoln Park Zoo, Telena Welsh from Point Defiance Zoo & Aquarium and Josephine Vanda Tirtayani from Gembira Loka Zoo during the Introduction to Studbook Keeping & Population Management training webinar. Photo: PKBSI

1. Ex situ conservation: Healthy back up ex situ populations fit for reintroduction

Breeding and transfer recommendations

A primary aim of the Action Indonesia GSMPs is to achieve healthy backup *ex situ* populations for each species. This is particularly important for Indonesian zoos, as they have a number of founder animals, whose genetics are potentially underrepresented in the Indonesian and global zoo population. GSMP population management working groups have been working with studbook keepers and zoos since 2016 to produce cooperative breeding and transfer recommendations in Indonesia. The second set of breeding and transfer recommendations was produced in 2018 during the second GSMP Planning Workshop. New recommended births are important steps forward in our goal of maintaining healthy global *ex situ* populations, which is critical to the long-term conservation of the species.

As a result of the second set of breeding recommendations, four anoa, twelve banteng and five babirusa have been born so far, including an anoa birth, a babirusa birth and a banteng birth confirmed in 2020 (Figure 1). Since the recommendations process began in 2016, there have now been at least 30 recommended births, including four babirusa, eight anoa, and eighteen banteng. These births help to grow the *ex situ* populations towards the Indonesian National cooperative breeding targets (Table 2).

Congratulations to all those institutions that have had successful recommended births so far: Taman Safari Indonesia (TSI) Bogor, Surabaya Zoo, TSI Prigen, Anoa Breeding Center Manado, Ragunan Zoo and Banteng Breeding Centre, Baluran National Park! No recommended transfers were completed in 2020, in large part due to the effect of Covid-19 and the associated limitations on conducting animals transfers during this period. Some transfers were also delayed because of swine flu.

It is recognised that an increase in breeding and transfer efforts takes time to happen, as zoos become familiar with the cooperative population management approach, identify how they can increase space to hold recommended offspring, and work to improve the transfer process. Continued support from PKBSI, the KSDAE, Ministry of Environment and Forestry of Indonesia (KKH) and the GSMP will contribute to facilitating more recommended animal transfers in the future. Please get in touch with PKBSI-GSMP Officer Yonathan for more information (yonathan030892@gmail.com).

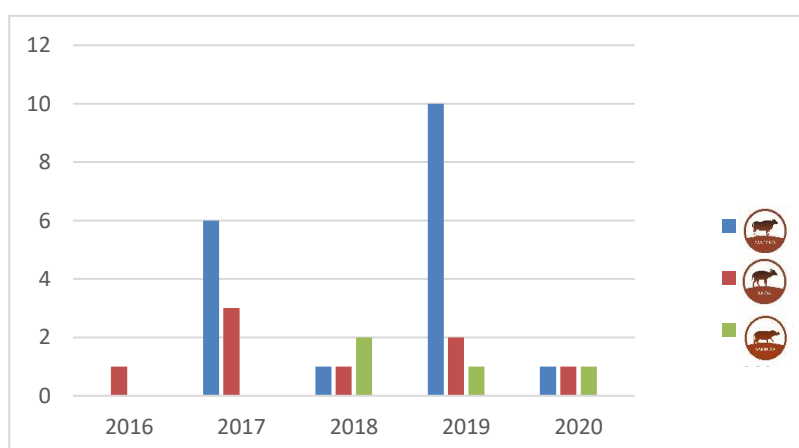


Figure 1: Births of anoa, banteng and babirusa in Indonesian zoos following breeding recommendations.

Species	Current population (Nov 2020)	Target
Banteng	86	100
Anoa	37	75
Babirusa	75	100

Table 2: Indonesian National *ex situ* cooperative breeding targets and the current *ex situ* populations.

Updated recommendations for 2021

The GSMP population management Working Groups have been working with Indonesian studbook keepers and PKBSI since October to collect the latest studbook data for anoa, babirusa and banteng in Indonesian zoos. Using this updated studbook data; the GSMP population management Working Group leaders are producing breeding recommendations for the Indonesian zoo populations in 2021. These will be an update on the second set of breeding recommendations that account for any changes within zoos over the last year. In early 2021, these recommendations will be sent to the zoos for their valuable feedback and adjusted accordingly. The next GSMP Planning Workshop will be held in 2022, during which time a third set of breeding and transfer recommendations will be made.



1-month-old male babirusa piglet, born on 26 February 2020 at Surabaya Zoo. Image: Joe Forys.

Encouraging zoo support of breeding programmes:

In March 2020, a joint team from Action Indonesia and PKBSI visited 12 zoos in Java and Sumatra. The team included Tony Sumampau, Gono Semiadi, Michael Sumampau, Latifah Dwi Susilowati, and Yonathan (PKBSI), James Burton (AWCSG), Joe Forys (Audubon Zoo), Corinne Bailey (AWCSG) and BKSDA representatives. A primary purpose of the visits was to update zoos on the progress with the second set of PKBSI-GSMP breeding and transfer recommendation.

The visits were also excellent opportunities for PKBSI-GSMP experts to provide input and advice on animal husbandry and enclosure design, to re-engage with zoos about the importance of cooperative breeding, and to identify areas that the GSMP team can contribute to in the future, including workshops, collection planning and capacity building. The information gathered from the trip guided future activities in 2020, such as the husbandry training webinars and updating breeding and transfer recommendations. We are confident that the productive discussions during this visit will help to facilitate the cooperative breeding of these GSMP species into the future. Many thanks to all the zoos that were visited for their logistical support and generous welcome.



Ivan Chandra, Indonesian banteng studbook keeper, presenting on cooperative breeding of banteng in Taman Safari Indonesia Prigen, Java. Photo: Yonathan



Anoa calf at Surabaya Zoo Photo: Surabaya Zoo

Genetic population assessment

In order that the greatest genetic diversity can be maintained in the *ex situ* populations, genetic assessment is required to verify the studbook data, determine the genetic make-up of the individuals and determine the geographical origin and relatedness of the wild caught individuals. This will help guide the breeding and transfer recommendations to retain as much genetic diversity as possible. This is being led by PKBSI, with technical input from Copenhagen Zoo and Queen Mary's University, London. After much work to develop the collaboration and apply for the permissions, we are excited that permits have been issued and sampling can begin in 2021. PKBSI will coordinate with the zoos holding the animals to be sampled, so sample collection can begin in the coming months.

Optimising general and breeding related husbandry through training

One of the goals of the Action Indonesia GSMPs is to 'optimise general and breeding related husbandry through training'- to share global knowledge and expertise and build capacity and skills in animal husbandry. While it has not been feasible to hold in-person husbandry training and workshops during the Covid-19 pandemic, the Husbandry Working Group has worked with the PKBSI Education Division to provide virtual training for PKBSI member zoo staff in Indonesia on a wide range of husbandry topics. Training webinars began in July on a trial basis, and ran to the end of 2020. The topics for the webinars were determined based on a survey conducted by PKBSI Education Division as well as input from GSMP Husbandry Working Group following the zoo visits in March.

This series of husbandry webinars were presented by international and Indonesian zoo experts and practitioners. The general format of each webinar session included two presentations delivered on a selected topic, followed by a question-and-answer session with participants. Ten husbandry training sessions were delivered during 2020, the logistics and delivery of which were facilitated by the PKBSI Education Division. See Table 3 for the topics and presenters of each session.



ROLES OF ZOOS IN CONSERVATION

WAZA chief executive Dr Martin Zordan and Professor Gono Semiadi joined Ligaya and Yonathan in December's webinar to present on the roles of zoos in conservation Photo: PKBSI

Table 3. Husbandry Webinar Topics and Presenters

Webinar Session	Topics	Presenter
1 (11 th July)	Preparing to Reopen During Covid-19	1. Willem Manansang - PKBSI 2. Achmad Muchsinin - Ragunan Zoo 3. Marcel Alaze - Allwetter Zoo
2 (25 th July)	Nutrition for Animal Health	1. Dr. Francis Cabana - Singapore Zoo 2. Paramitha Adelia - Gembira Loka Zoo
3 (8 th August)	Introduction to Studbook Keeping & Population Management	1. John Andrews - Lincoln Park Zoo 2. Telena Welsh - Point Defiance Zoo 3. Sri Pentawati - Surabaya Zoo
4 (22 nd August)	Enrichment	1. Sarah McGregor - ZSL Whipsnade Zoo 2. I.A. Ari Janiawati - Bali Safari
5 (5 th September)	Husbandry & Exhibit Design	1. Joseph Forys Jr. - Audubon Zoo 2. Elizabeth Wilson - Audubon Zoo
6 (3 rd October)	Collection Plan	1. Matt James - Dallas Zoo 2. Keni Sultan - Bandung Zoological Garden
7 (17 th October)	Record Keeping	1. Desy Satya Chandradewi - Direktorat KKH 2. Sharmy Prastiti - TSI Bogor
8 (31 st October)	Tiger Husbandry	1. Lori Hieber – San Diego Zoo Safari Park 2. Autumn Nelson – San Diego Zoo Safari Park 3. Telena Welsh – Point Defiance Zoo & Aquarium 4. Yasfi Hakim – Ragunan Zoo
9 (14 th November)	Tiger Behaviour Management & Breeding	1. Jim Mackie – ZSL London Zoo 2. Lori Hieber – San Diego Zoo Safari Park 3. Kathryn Sanders – ZSL London Zoo 4. Erin Carey – Point Defiance Zoo & Aquarium
10 (5 th December)	Roles of Zoos in Conservation	1. Dr. Martin Zordan – WAZA 2. Prof. Dr. Gono Semiadi – PKBSI

The virtual training sessions have had high participation, with an average of 60 participants from 26 institutions joining the sessions. The session on Enrichment delivered by speakers from ZSL Whipsnade Zoo and Bali Safari had the highest participation, with 76 participants from 33 institutions in attendance. A range of participants have joined the webinars, including zookeepers, vets, curators, managers and directors.

The virtual husbandry training has received positive feedback from speakers and participants. For each session, pre- and post- questionnaires were given to participants to monitor the effectiveness of the sessions in increasing knowledge and interest in topics. The results from the questionnaires demonstrate an increase in knowledge during all sessions (Figure 2).

These husbandry training sessions represent the first time that the GSMP has delivered training virtually instead of face-to-face. This method of training has been very successful in providing the opportunity for experts from Indonesia and around the world to present and answer questions on key husbandry topics to a wide range of Indonesian zoo staff. We hope to make the sessions even more interactive and participative in 2021. The virtual training sessions will be available to Indonesian zoos in the future and will be a valuable resource in the development of a sustainable and accessible husbandry training programme.

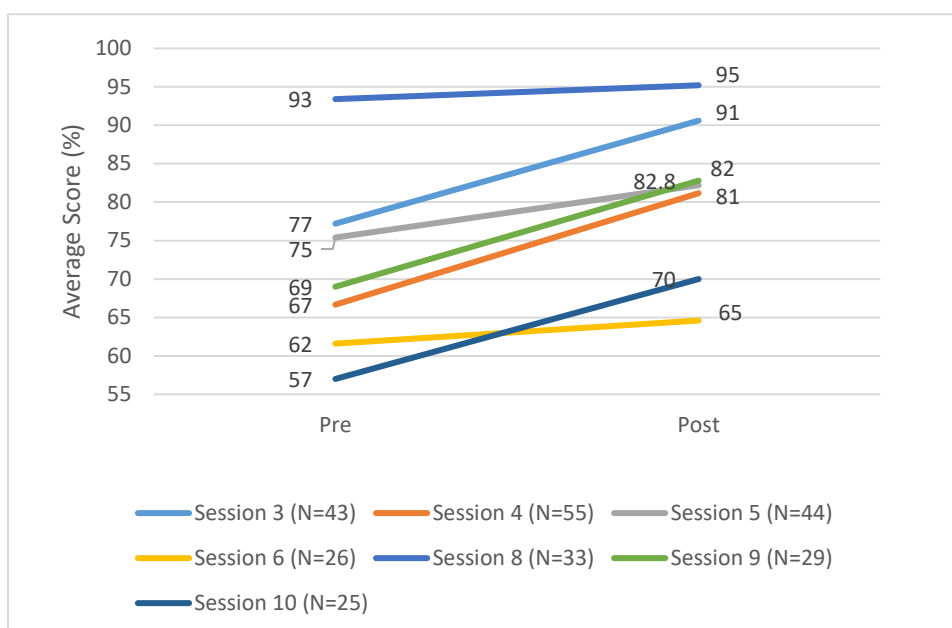


Figure 2: Average score achieved in the pre- and post- knowledge questionnaires for each session.

In parallel with the virtual husbandry training sessions, the Husbandry Working Group and PKBSI have been working to share their knowledge in the development of a husbandry training framework that can guide future sessions as a comprehensive zoo professional training programme is developed by PKBSI. This training framework will continue to be developed and adapted towards the training needs and considerations in Indonesian zoos in 2021.

Many thanks to everyone who has presented, moderated and participated in the webinars so far. Special thanks to Ligaya Tumbelaka and Yonathan from PKBSI who have led the webinars in 2020. To find out more and get involved in future webinars contact Corinne (c.bailey@chesterzoo.org).

2. Education - Action and support for conservation of target species

Global Campaign Day

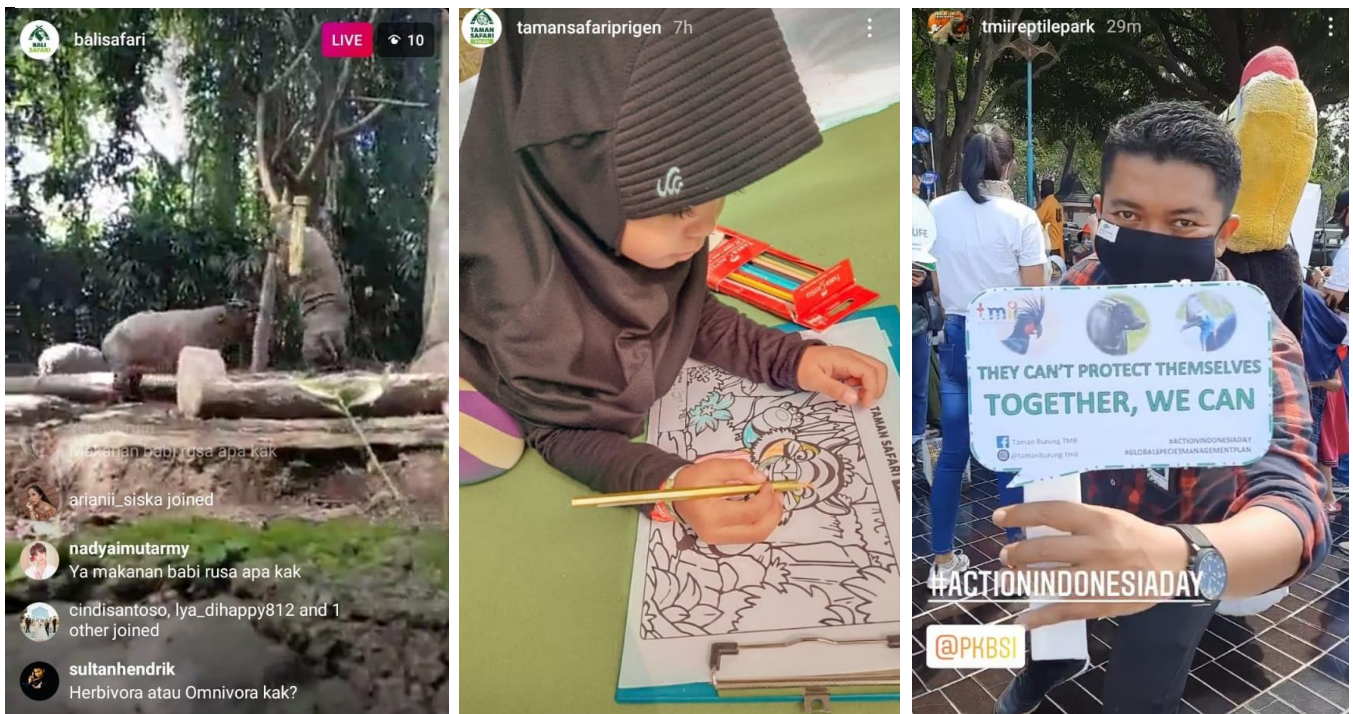
One of the goals of the GSMP is to increase public awareness and support for conservation of the GSMP species. In 2019, the Education Working Group developed 'Action Indonesia Day', an annual global awareness raising day to maximise education efforts and communication about the species and their conservation. This continues to be a major achievement in raising awareness and in the collaboration between regions.

The second Action Indonesia Day took place on Sunday the 16th of August. This year, as engagement in many zoos was challenging due to Covid-19, Action Indonesia Day was held virtually, with over 30 zoos and institutions from three continents sharing their animal facts, images, keeper talks and more on social media using the #ActionIndonesiaDay hashtag. Activities from zoos around the world included quizzes, photo contests and Instagram Live videos. Some zoos also conducted on-site activities, such as Solo Zoo asking visitors to write their wish for wildlife conservation in Indonesia and Surabaya Zoo building a photobooth. Individuals also got involved by sharing pictures, stories and artwork to shine a light on anoa, banteng, babirusa and Sumatran tiger.

The virtual nature of this year's event led to a huge reach and high individual participation compared to last year. On Instagram, there were approximately 530 posts using the hashtags #ActionIndonesiaDay and #ActionIndonesia, gaining over 70,000 likes and views. Posts from our new Facebook page also reached almost 10,000 accounts cumulatively over the weekend, with 520 comments, likes and shares over the three days. With their huge combined social media following, zoos and organizations around the world have raised awareness in a large and diverse audience. In 2021, we hope to widen the engagement further through networking with zoos and providing even more resources to share. We also share the hopes of many that zoos will be in a better position and able to interact face to face with their visitors in the coming year.



Figure 3: Map of zoos that participated in Action Indonesia Day 2020.



On Action Indonesia Day, Bali Safari held an Instagram Live session with their babirusa, Taman Safari Indonesia Prigen had a colouring competition and Taman Mini Indonesia Indah shared a Keeper Talk

Raising awareness of the GSMP

A primary achievement in 2020 was the coordination and completion of a review summarising the progress of the Action Indonesia GSMP since its inception in 2016. The GSMP article, titled '**Progress of the Action Indonesia GSMPs 2016-2020: Global collaboration to conserve the anoa, banteng, babirusa and Sumatran tiger**' was featured in the December issue of [BULLETin](#), the newsletter of the IUCN SSC Asian Wild Cattle Specialist Group. The article explains the background and development of the Action Indonesia partnership and summarises its achievements to date.

A collaborative effort, this article was made possible with the input from 26 expert authors from the Action Indonesia partnership and the Sumatran tiger GSMP. The article was an opportunity to reflect on the huge progress that the GSMP has made in the past four years, and to look ahead to activities that we can pursue together for the conservation of the anoa, babirusa, banteng and Sumatran tiger.

Many thanks to all the authors that were involved in writing this article, providing valuable feedback and information. We were very grateful to Martín Zordan and Paula Cerdán from WAZA for reviewing the article prior to publication. The article is available [here](#).



The GSMP review featured in BULLETin in December. Click on the images to access the article

An article on Action Indonesia was also featured in the [Fall 2020](#) issue of the Zoological Association of America (ZAA) Journal. The article '**Anoa, Banteng and Babirusa: Working Together to Conserve Charismatic Indonesian Species From Extinction**' described the work of Action Indonesia and invited member institutions to get involved. It also featured a section on care and husbandry considerations for zoos interested in becoming holders of the species. This was an excellent opportunity to profile the GSMP and encourage engagement from over 500 ZAA members in more than 60 accredited facilities.

In situ Conservation - Stable and safe *in situ* population

Population monitoring

In 2019, the GSMPs, PKBSI and Alas Purwo National Park – a priority location for banteng conservation in East Java - agreed to collaborate on a monitoring project for Javan banteng. This project will build on the park's current monitoring activities and will allow us to establish how many banteng are in the park, how their population changes over time and the habitats they use. The project is supported by Chester Zoo, Stichting Wildlife Beekse Bergen and Wroclaw Zoo, with the objectives to establish effective monitoring in Alas Purwo National Park in order to better understand and safeguard the populations of banteng in East Java, and to provide longitudinal data of banteng population density of at least 4 years to inform future management and support a future Banteng Strategy and Action Planning workshop. Alas Purwo National Park is supporting this project with in kind and financial support throughout.

The banteng monitoring project in Alas Purwo is making good progress, although there have been delays due to the impact of Covid-19 and the restrictions on travel this year. The camera trap sampling strategy is being defined with design input from multiple experts to improve the method. Preparation is ongoing so that monitoring can begin as soon as possible when the situation allows. The GSMP and PKBSI are also working with the park staff to advise them on data analysis methodology for camera trapping conducted by the park in 2020. We aim to hold a larger scale camera trap survey in the park during 2021.

Using zoo expertise to help *in situ* conservation

Last year, a team from the GSMP, PKBSI and KKH visited forestry offices in Sulawesi to discuss how the Action Indonesia GSMPs could improve the handling of rescued and confiscated anoa and babirusa. Both species are threatened by habitat loss and hunting, causing population declines. Live animals are also caught and traded, which means there is a need to do health checks, care for, and find long-term homes for these animals. This interim assessment and care can be provided by transit centres before the animal is moved to its long-term home. This could be release to the wild, or transfer to a breeding or non-breeding centre. The project aims to provide KKH with recommendations about how to implement an island-wide strategy for the management of rescued anoa and babirusa with a network of transit centres at KSDA offices.

An interim report by the Sulawesi and Husbandry Working Groups on recommendations for a Sulawesi-wide network and process for managing these confiscated animals has been produced and will shortly be shared with PKBSI and the Ministry of Environment and Forestry. This report will still allow important discussions in 2021 on alignment between the Ministry and PKBSI in management of these rescued animals. Completion of assessments of certain sites was not feasible due to travel restrictions, but we hope these can be completed in 2021. This will result in a final report and detailed discussions with the government in how to implement efficient and well-staffed transit centres and the long-term care for these species.

Outlook for 2021

Thanks to your support and contributions, we were able to adapt our plans for 2020 to the continuously changing situation. Successes this year with the husbandry training webinars and the virtual Action Indonesia day have widened our imagination about what we can achieve in the coming years using a mixture of virtual and in person approaches. We will continue learning next year.

Some of the activities we hope to achieve next year include:

- Conduct more virtual husbandry training and develop a husbandry training framework
- Design and implement an interactive conservation education training course with zoo and *in situ* educators in Indonesia
- Conduct a banteng monitoring project with our partners in Alas Purwo National Park

We will also work to develop the third round of breeding and transfer recommendations for the GSMP species to be finalised in the next GSMP Planning workshop in early 2022. We look forward to the next **Action Indonesia Day on Sunday 15th August 2021**. Please check the GSMP website and social media pages for updates and resources on how to get involved in Action Indonesia Day this year.

We rely on your support, expertise and funding to carry out our activities. If you are interested in getting involved and want to find out more, please contact either James Burton (jamesaburton@yahoo.co.uk) or Corinne Bailey (c.bailey@chesterzoo.org) of the AWCSG, a Working Group leader (see Table 4 Annex) or one of the GSMP convenors:

- Anoa: Terry Hornsey (terry.hornsey@africa-alive.co.uk)
- Banteng: Steve Metzler (smetzler@sandiegozoo.org)
- Babirusa: Joe Forys (jforys@auduboninstitute.org)

**We wish all partners well for the coming months.
We need your help for the 2021 activities – please get in touch!
Find us on social media following the links below.**



[@IUCN_WildCattle](https://twitter.com/IUCN_WildCattle)



[@iucn_wildcattle](https://www.instagram.com/iucn_wildcattle)

[@action_indonesiagsmp](https://www.instagram.com/action_indonesiagsmp)

[IUCN Asian Wild Cattle Specialist Group](#)

[Action Indonesia GSMP](#)

Annex: Action Indonesia GSMP founding members, working groups and leaders

The Action Indonesia GSMPs were founded by the Indonesian Zoo and Aquarium Association (PKBSI), the European Association of Zoos and Aquaria (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) in 2015. In March 2016, they were endorsed by the Indonesian Ministry of Environment and Forestry (KKH) and WAZA.

Below is the list of the thematic Working Groups and their leaders as developed in the second GSMP Planning Workshop in 2018.

Table 4 Action Indonesia GSMP Working Groups and leaders

Name	Contact details	Affiliation(s)
Anoa Population Management		
John Andrews	jandrews@lpzoo.org	AZA Population Management Centre, Lincoln Park Zoo, USA
Yohana Tri Hastuti	yohanavet@tamansafari.net	Taman Safari Indonesia, Indonesia
Babirusa Population Management		
Joe Forys	jforys@auduboninstitute.org	Audubon Nature Institute, USA
Sri Pentawati	pipentakbs_94@yahoo.co.id	Surabaya Zoo, Indonesia
Banteng Population Management		
Ivan Chandra	ivan@tamansafari.net	Taman Safari Indonesia, Indonesia
Steve Metzler	smetzler@san-diego-zoo.org	San Diego Zoo, USA
Education		
Charlotte Smith	c.smith@chesterzoo.org	Chester Zoo, UK
Ligaya Tumbelaka	tigressgaya@gmail.com	Bogor Agricultural University (IPB) & PKBSI, Indonesia
Fundraising and Communications		
Jeff Holland	jeffhollandcctu@gmail.com	Center for the Conservation of Tropical Ungulates, USA
Terry Hornsey	terry.hornsey@africa-alive.co.uk	Africa Alive!, UK
Genetics		
Gono Semiadi	semiadi@gmail.com	Indonesian Institute of Sciences (LIPI), Indonesia
Christina Hvilsom	ch@zoo.dk	Copenhagen Zoo, Denmark
Laurent Frantz	laurent.frantz@qmul.ac.uk	Queen Mary University of London, UK
Husbandry Training		
Joe Forys	jforys@auduboninstitute.org	Audubon Nature Institute, USA
Ligaya Tumbelaka	tigressgaya@gmail.com	Bogor Agricultural University (IPB) & PKBSI, Indonesia
Steve Metzler	smetzler@san-diego-zoo.org	San Diego Zoo, USA
Tim Rowlands/ Amy Humphreys	timr@marwell.org.uk a.humphreys@chesterzoo.org	Marwell Zoo, UK Chester Zoo, UK
Anoa and Babirusa <i>in situ</i>		
Abdul Haris Mustari	haris.anoa@yahoo.com	Bogor Agricultural University (IPB), Indonesia
James Burton	jamesaburton@yahoo.co.uk	IUCN SSC Asian Wild Cattle Specialist Group, UK
Banteng <i>in situ</i>		
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Citation:

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