Donor Update Report

EcosystemImpact Simeulue Songbird Bird Breeding Programme Update Report

Wildlife Reserves Singapore Group

January 2021

1. Project Background

Simeulue (Barusan) shama (*Copsychus malabaricus hypolizus*) and Babi (Barusan) shama (*Copsychus malabaricus opisthochra*) are classed by the IUCN Asian Songbird Trade Specialist Group (ASTSG) and European Association of Zoos and Aquaria (EAZA) Silent Forest Campaign as near-extinct subspecies (Lee *et al.,* 2016; Silentforest, 2019). This programme aims to secure the survival of these endemic subspecies of Barusan shama through a breeding programme based on Simeulue Island.

In December 2020 EcosystemImpact gained permission from the local and regional environmental government sectors to procure some of the remaining captive individuals of Simeulue (Barusan) shama and Babi (Barusan) shama. EcosystemImpact has procured six male and six female Barusan shama.

Each Barusan shama subspecies is notoriously hard to differentiate. There is a real concern that breeders often breed birds from different islands, leading to birds of mixed origin. Although there is a bird breeder on Simeulue Island who deals shama, he has admitted to mix breeding birds. In order to give the best chance of procuring genuine Simeulue individuals, EcosystemImpact has purchased birds from locals within villages that the owners have claimed are from Simeulue. Although EcosystemImpact has tried to find Babi shama, there has been no mention of birds originating from Babi Island.

EcosystemImpact is currently holding these Barusan shama in purpose-built aviaries at Mahi-Mahi Surf Resort (see Figure 1.) and plans to start breeding the birds once they have settled into the new aviary. Meanwhile, EcosystemImpact continues to stay vigilant for any information or sightings of wild birds, and have gained funding from Marlow Birdpark and Zoologischen Gesellschaft für Arten und Populationsschutz (ZGAP) to carry out a Simeulue Islands wide survey and initiate a community monitoring and protection plan for areas discovered by this survey to be prime habitats for the translocation of birds bred in the EcosystemImpact Songbird Breeding Facility.

Figure 1. Barusan shama aviaries within garden and forest setting.

The expected result of this project, is that EcosystemImpact will be able to secure the survival of the Simeulue Barusan shama, by successfully purchasing, housing and breeding some of the last individuals of these subspecies. EcosystemImpact has built a set of eight aviaries for Barusan shama and then aims to build a following set of aviaries for Simeulue hill myna, an equally endangered Simeulue endemic subspecies. Through cooperation with Sumatra Orangutan Conservation Programme (SOCP) and a number of other breeding facilities across Indonesia, EcosystemImpact aims to play a crucial role in saving these subspecies from extinction.

2. Funding

Current funding round from WRS (SGD 10,000), and previous funding from Marlow Birdpark and ZGAP, for the EcosystemImpact Songbird Breeding Facility has enabled:

- Barusan shama aviaries to be completed and maintained,
- birds to be acquired,
- CCTV security cameras installed,
- cockroach and grasshopper breeding to be set up, and the
- beginning of a training programme / cadetship for participants from the surrounding community to be able to look after birds.

3. Programme Progress

3.1. Aviary Completion

The Simeulue Breeding Facility Aviaries are now fully complete. All finishing touches in order to securely house the birds having been completed, such as the fitting of CCTV and appropriate signage, hose, sprinkler and pump, feeding platforms and locks on both the aviary walkway doors and individual aviary room doors.

Due to the ongoing Indonesian lockdown, Mahi-Mahi Resort – the location within which EcosystemImpact operates and the aviaries are positioned – maintains closed. The post-corona plan was that Mahi-Mahi security guards would patrol the aviary in order to maximise security and minimise theft risk. With Mahi-Mahi closed, there is a substantially reduced work force, with only one security guard positioned at the staff entrance to the resort, at the farthest end of the resort to the aviaries. Although uncertain, it looks as though Indonesia will continue to be closed to foreign tourism, and therefore Mahi-Mahi will continue to be closed for the foreseeable future.

Barusan shama are highly desirable and expensive birds which leaves them vulnerable to theft. The aviaries are positioned close to the resort garden, in a quiet corner of the resort, which has raises substantial concerns around the possibility of bird theft. Due to these concerns, a CCTV system has been fitted within the aviaries and appropriate signage has been positioned close to the CCTV cameras and on the aviary doors (see Figures 2. And 3.).

Figures 2. (left) showing CCTV signage below a CCTV camera which faces one of the aviary doors and, Figure 3. (right) showing CCTV and funder logos on one of the aviary doors.

Barusan shama enjoy a mixture of perching woods and shade provided by alive natural plans within their aviaries. Each individual aviary room has been planted with local shrubbery and vines have been planted, which although still young, will climb the front walls of each aviary room providing shade and distorting the view of the birds – each adding to the comfort of the birds. Perches have also been made which hold a bird feeder cup at one end and a drinking cup at the other (Figure 5.).

Barusan shama are in insectivores, meaning they require a diet of insects which is often mixed with an insectivore pellet mix in captivity. As described within November 2020's Interim Report, EcosystemImpact is successfully breeding cockroaches (Figure 7.) as a supply of fresh insects supplement to the insectivore pellet mix. Previously EcosystemImpact attempted to breed grasshoppers, which proved less successful than cockroaches, so have switched to breeding just cockroaches and collecting grasshoppers, worms and maggots from the garden.

From observation, individual birds prefer either feeding on the ground, or from the perch feeding platforms. Feeding trays have thus been placed on the floor to give a choice of feeding locations. As Barusan shama enjoy bathing, water trays have been placed in each aviary room which are refilled along with each food and drinking station three times a day.

Figure 4. (left) aviary room showing planted local shrubbery and, Figure 5. (right) showing feeding and drinking perches.

Figure 6. (left) pump, house and sprinkler system and, Figure 7. (right) juvenile cockroaches.

3.2. On-site Recognition / Acknowledgement

EcosystemImpact has placed signs on the aviary showing the logos of each funder that has supported the project (Figure. 8). Information sheets have also been placed around Mahi-Mahi Resort (Figure 9.). Although currently closed, Mahi-Mahi will be used to spread the awareness about the Asian Songbird Crisis. Although the aviaries have been built for breeding purposes and not specifically educational, Mahi-Mahi Resort and EcosystemImpact run eco-tourism holidays. When Mahi-Mahi re-opens and EcosystemImpact continue to run eco-tourism holidays, including educational sessions on the Asian Songbird Crisis using the breeding facility as an example of conservation in action. The logos of each funder have been placed on the information sheets.

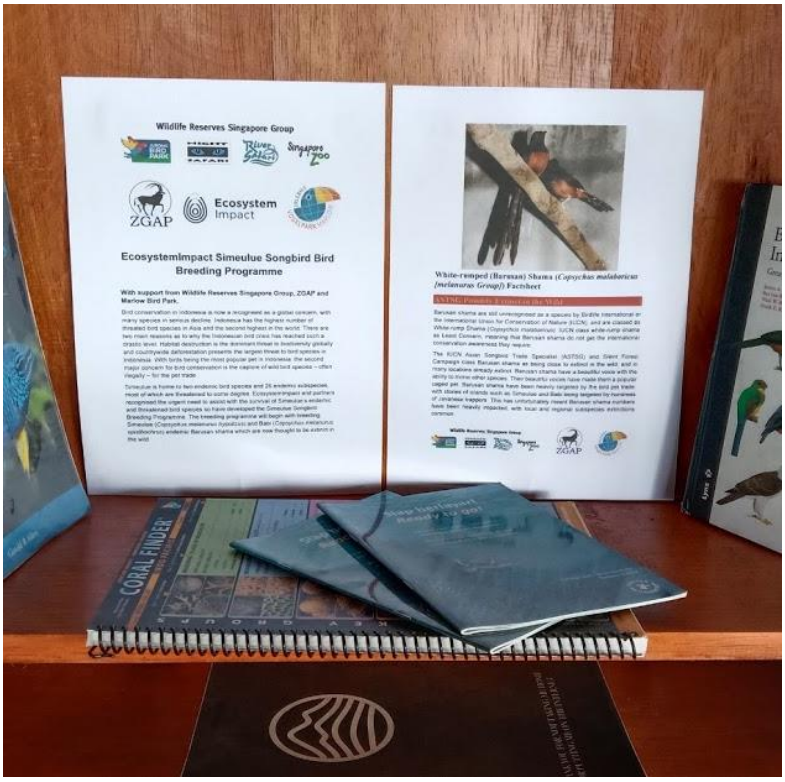

Figure 8. (left) logo of supporting funders placed on the aviary and, Figure 9. (right) Conservation Corner at Mahi-Mahi Resort showing information on the Simeulue Songbird Breeding Programme with funder logos, along with wildlife information and identification books.

3.3. Bird Procurement

EcosystemImpact has procured the 12 birds budgeted for within this founding round. The original budget was for 14 individuals, however due to security concerns, a CCTV system was installed, leaving enough funding for 12 individuals. Budget reallocation was confirmed by WRS before the purchase of the CCTV system.

As to give us the best chance of purchasing pure Simeulue Barusan shama, EcosystemImpact have been purchasing birds through a local proxy from people within Simeulue villages that have stated the birds were from Simeulue. The breeder on Simeulue island breeds a variety of

shama from different locations, so we are concerned these may not be pure Simeulue shama. Buying them from local villagers however, has meant each bird has cost a different amount, as there has been negotiations inevitably leading to different agreed final prices (see budget).

Unfortunately, three birds – two female and one male – have been lost due to suspected stress leading to mortality. White-rumped / Barusan shama are known to be easily stressed. In their study of ex-situ white-rumped shama breeding in Bengkulu, Sumatra, Putranto *et al.* (2020) state:

'locally this bird is also widely known as a stressful bird based on its high mortality rate when they have to adjust themself into a new ex-situ environment or treatment by keepers. For example, a new changing feed from raw feed such as kroto (ant eggs) or crickets into a commercial feed, a new cage body or new cage facilities, or a new face of new fancier can be a stressor which leads to a mortality of this bird species' (p. 870-871).

These issues are very similar to ones that EcosystemImpact is facing when moving birds into the new larger aviaries. Each of the purchased birds has been kept in a small cage contained within the homes of their previous owner and fed on insectivore pellet mix. It is likely that the move from their previous home to the EcosystemImpact aviary has proved too stressful for these three birds, leading them to stop eating. This issue has been minimised by keeping birds within their existing cage within the larger aviaries before release. The remaining nine birds have settled in, are showing no obvious signs of stress and are eating good amounts of cockroaches, grasshoppers, worms and the insectivore pellet mix.

Table 1. Showing Individuals Within the Aviary, the Village They Were Purchased and Date, Includes Temporary Holding and Individuals Lost

Aviary							
Female: Air Pinang (15/1/2021)	Male: Lubung (13/1/2021)	Female: Lubung (13/1/2021)	Male: Air Pinang (15/1/2021)	Female: Lubung (13/1/2021)	Male: Kampong Air (14/1/2021)	Male: Kampong Air (14/1/2021)	Female: Lubung (13/1/2021)

Temporary holding room – a secure room next to the aviary currently being used to hold birds before they have been paired.

Male: Salur (21/1/2021)	Lost: - Male: Lubung (13/1/2021) - Female: Kampong Air (14/1/2021) - Female: Salur (21/1/2021)

Figure 10. (left) a female Simeulue shama showing shorted tails and Figure 11. (right) showing male Simeulue shama with longer tail.

3.4. Permit and Government Relations

Considerable time was spent over the first four months of this funding round coordinating with both local and regional government and associated Environment Sectors. EcosystemImpact's relations with both local and regional government are positive, with both pledging support for the programme along with its future development.

As the programme is currently only breeding Barusan shama (classed as white-rumped shama), a non-protected species internationally and within Indonesia, the legal requirement is that permission is granted by the Provincial Environment Sector to purchase the birds. This step has been achieved, hence EcosystemImpact has begun purchasing birds. The second step is that representatives from the Provincial Environment Sector will come to the breeding facility and inspect the birds, identify them making sure that they are ringed and numbered, and then track their origin. Once the birds have been registered with the Provincial Environment Sector, the programme and facility can be registered online.

4. Follow-up Actions, Remaining Budget Allocations and Developments

4.1. ASTSG Discussions

There has been considerable concern and discussion within the ASTSG about the potential for mix breeding of birds of Simeulue origin with birds of mixed origin. Through discussions with the ASTSG Barusan shama group, it has been decided that although there is a risk of mix breeding, breeding should commence. DNA sampling must then be carried out as soon as possible in order to fully identify the birds. The Singapore University Aviation Evolution Lab (part of ASTSG) have stated that in order to comprehensively identify the birds, samples must be sent to their laboratory in Singapore. This requires permits from the Indonesian government and due to Corona is not currently possible. Although not enough to comprehensively identify the birds – find out the exact island origin – it has been recommended that a veterinary researcher from Universitas Syiah Kuala, Aceh, comes to Simeulue to carry out blood sampling. No rereleases of birds can occur until the birds are fully identified by the Aviation Evolution Lab, however, with blood sampling, visual identification and ASTSG confirmation, birds can be bred.

Although subject to further discussion and survey work, members of the ASTSG have raised the question that it might be too late to save individual island Barusan shama populations / subspecies, and we may have to settle for saving Barusan shama (also known as black tailed shama). As EcosystemImpact intends to rerelease the shama bred in the facility, this debate will be crucial to the future development of the programme and the accompanying translocation programme.

4.2. Provincial Environment Sector Registration Visit

As stated above, in order to fully register and legalise the breeding facility, the Provincial Environment Sector must come to Simeulue to undertake a bird and facility examinations. The Provincial Environment Sector have said they are ready to visit Simeulue and the facility, and are awaiting budget confirmation. Budget for this must be found through the programme, not by the Provincial Environment Sector.

4.3. Future Programme Funding

Marlow Birdpark in partnership with EAZA Silent Forest have agreed to fund the programme with emergency funding for three months for the period immediately after this WRS funding round finishes. This funding is for EUR 1,340 to cover basic running costs, security and bird care assistance for three months (see Table 2.). Through communications with WRS Group, SDG 15,000 has been pledged to the programme in 2021. However, it has been stated this funding is unlikely to be available before the next WRS funding round in April 2021. The Marlow Birdpark and EAZA funding is therefore to keep the programme running during the period between WRS funding rounds, through covering the minimal running costs.

Table 2. Marlow Birdpark and EAZA Silent Forest Emergency Funding

Programme: Simeulue Barusan Shama Breeding					3 Months Emergency Budget	
Description	Detail	Unit	Frequency	Cost (IDR)	IDR	EUR
1. Salaries					*18,000,000*	*1,059*
Assistant	Bird Maintenance and care assistant	1	12	2,000,000	6,000,000	353
Security Guard	2 Person x 3,6,12 Months, Half Time	2	Alternate nights	2,000,000	12,000,000	706
4. Food and Maintenance					*4,785,000*	*281*
Food and Maintenance	Bird and Aviary Upkeep x 3,6,12 Months	1	1	1,595,000	4,785,000	281
Total					22,785,000	1,340

The funding outlined in Table 2. is expected to enter the EcosystemImpact bank account in early February 2021.

5. References

Lee, J.G.H., Chng, S.C.L. & Eaton, J.A. (eds) 2016. Conservation strategy for Southeast Asian songbirds in trade. Recommendations from the first Asian Songbird Trade Crisis Summit 2015 held in Jurong Bird Park, Singapore, 27–29 September 2015.

Putranto, H., Brata, B. and Yumiati, Y., 2020. Ex-situ population of White-rumped Shama (Copsychus malabaricus): Studies of density, distribution and bird keepers in Bengkulu, Sumatra. *Biodiversitas*, 21(3), pp.865-874.

Silentforest.eu. (2019). The Asian songbird crisis – Silent Forest. [online]