
Simeulue Barusan Shama Breeding Project

Ecosystem Impact for Copenhagen Zoo & EAZA Silent Forest

November 2022



1. Introduction

The Simeulue Songbird Breeding Project and Linggam Reintroduction Project discussed in this report work to save Simeulue's most threatened songbird species from extinction. The current focus species include Barusan shama (*Copsychus [malabaricus] melanurus*) and Simeulue hill myna (*Gracula religiosa miotera*). There are four subspecies of Barusan shama, with the Simeulue Barusan shama (*C. m. hypoliza*) and Lasia Barusan shama (*C. m. opisthochrus*) being the focus of this project. Barusan shama are variably recognised as a species due to a distinct morphology and restricted range (Eaton et al. 2015; Rheindt et al., 2019), with Rheindt et al. (2019) stating in their paper *The extinction-in-progress in the wild of the Barusan Shama*, that Barusan shama are 'likely to [be] extinction [sic] in the wild on all islands except Siberut' (p.33). Simeulue hill myna are a genetically and morphologically highly distinct population within the hill myna complex that may well warrant endemic species-level recognition, yet which are equally threatened with extinction (Ng et al., 2020).

2. Breeding Project Progress

2.1. Aviary Developments

Both the new Simeulue hill myna holding aviary (Aviary 2) and breeding aviary (Aviary 3) have been completed as of 13th October 2022. The aviaries consist of five holding rooms with a capacity to house 10 individuals, and three larger breeding rooms with the capacity to house six individuals, with the target being three hill myna breeding pairs. Due to EcosystemImpact not yet having gained the permit to house and breed hill myna (see Section 2.4 below), the holding aviaries are currently being used to house Barusan shama. Each of the five rooms are now occupied by shama bred within the existing Barusan shama breeding aviary. The two new aviary blocks are within the EcosystemImpact grounds, located besides the existing Barusan shama breeding aviary block – Figure 1 below.

The hill myna holding aviary rooms are 2m wide, 2.5m deep and 3m tall. The hill myna breeding aviary rooms are 3m wide, 4m deep and 4.5m tall. From discussions with a number of experts in songbird breeding, including Jochen Menner Curator of Birds at Prigen Conservation Breeding Ark, and Bayu Wirayudha CEO Friends of the National Parks Foundation, although the holding aviaries are unlikely to produce breeding success, they will be large enough to house pairs. Between the two aviary blocks a water tank and irrigation system has been developed, with each room having a bird bath.

The aviaries are within the existing EcosystemImpact garden, where, in anticipation of hill myna arrival, fruits such as papaya, banana, guava and mango have been planted to provide free local food. The EcosystemImpact grounds are guarded by security from 7pm to 7am and have CCTV surveillance.



Figure 1. Both new aviaries along with the existing Barusan shama aviary.



Figure 2. Simeulue hill myna breeding aviary, showing new water container.

2.2. Insect Propagation

It is possible to purchase insect food on Simeulue, such as meal worms and crickets. However, the supplies are irregular and Simeulue is often cut off from the mainland supplies. In order to try and secure insect food supplies for the project, we have been experimenting with insect propagation methods. We have purchased cricket eggs from Java, with the eggs having hatched and now grown to around 1.5 cm. Once the crickets are mature enough, we will provide egg laying sand containers with the aim of producing our own crickets. Mealworm beetles have also been separated from the larval form, and we have had our first successfully propagated mealworm larvae.



Figure 3. Left, crickets from Javan imported eggs and right, young meal worm larvae.

2.3. Breeding Success, Challenges and Program Losses

Since our last report in August there have been no birds bred, with the last successful chick having hatched on 25/06/2022. The last two unsuccessful eggs to hatch were laid on 01/08/2022 and hatched on 13/08/2022. These two chicks were however then thrown from the nest by the parents on the 17/08/2022. Interestingly this period of breeding unproductivity coincides with last year, with no there being no breeding activity between August – November this year and July - September last year. This year the period of breeding inactivity has been longer however, and we are slightly concerned about why this might be. Each of our birds has also recently gone through molt (between July – November), and there is a chance the reduced breeding activity coincides with the molt season.

Unfortunately, the male SBS008 from one of our most productive pairs was lost on 14/11/2022 due to an unknown cause of death. In order to replace him, we purchased a pair of Simeulue shama from Suak Bulu, Southern Simeulue, on 16/11/2022 – SBS036 and SBS037. From visual

identification, both birds appear to be Simeulue in origin due to their tail markings – see Figure 4 below.



Figure 4. Left SBS036 female and right, SBS037 male Simeulue Barusan shama. Both birds were purchased from a local enthusiast who had fastened identification rings. These have since been removed and replaced with EcosystemImpact identification rings.

During a recent nest inspection, a number of the wooden nest boxes had ant nests. Each nest box has now been replaced and fastened to the concrete aviary walls and not the wooden dividing walls, in hope that this will reduce ant infestations. Each room in the new aviaries 2 and 3 have also been fitted with a nest box. With each room in Aviary 2 now housing a pair of shama which have been bred through the breeding project, our hope is that these shama will breed to produce F3 offspring – the Indonesian government system dictates that our original breeding stock are classed as F1 and not F0, as these birds were purchased from Simeulue locals and not captured directly from the wild.

3. Linggam Island Shama Reintroduction Project Developments

Since last reporting in August, there have been a number of project developments including the completion of the ranger camp renovation. Linggam Island had an existing basic hut for the aluan coconut harvesters. Through the Linggam Reintroduction Project, the camp has been renovated and improved to include a kitchen, toilet and shower room – see Figure 8 below. The pre-release aviaries have been designed using Sketch Up online and fully priced – see Figure 9 below. Work on the building of the pre-release aviary will start in late November / early December. The aviaries will

be built by Rafuan who has been responsible for building all of the EcosystemImpact aviaries. We felt it makes sense for Rafuan to travel to Linggam and manage the builds, as he now has experience building aviaries and together we have learnt a number of important lessons.



Figure 8. Ranger camp renovation, Linggam Island.



Figure 9. Pre-release aviary design, Sketch Up.

2. References

- Eaton, J. A., Shepherd, C. R., Rheindt, F. E., C Harris, J. B., van Balen, S., Wilcove, D. S., & Collar, N. J. 2015. *Trade-driven extinctions and near-extinctions of avian taxa in Sundaic Indonesia*. <http://www.borneobirdimages>.
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- Rheindt, F.E, Baveja, P., Ferasyi, T., Nurza, A., Rosa, T., Ramadhan, R. & Gwee, C. 2019. The extinction-in-progress in the wild of the Barusan Shama *Copsychus (malabaricus) melanurus*. *Forktail* 35: 30–37.