NEWSLETTER OF THE IUCN SSC ASIAN SONGBIRD TRADE SPECIALIST GROUP

DAWN CHORUS

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Newsletter of the IUCN SSC Asian Songbird Trade Specialist Group

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FOREWORD BY DAVID JEGGO[1]

[1] *Chair of the IUCN SSC Asian Songbird Trade Specialist Group (ASTSG)*

Welcome to the Asian Songbird Trade Specialist Group's second issue of Dawn Chorus. This newsletter contains articles on a wide range of activities of the Group which address the effects of the ongoing Asian Songbird Crisis and the risk that so many taxa are exposed to from unsustainable trade. Considering the continuing effects of the Covid-19 pandemic, it is remarkable to see the high level of activity currently directed towards the Asian Songbird Crisis. Importantly it features aspects of songbird trade in Viet Nam and Malaysia. It is often perceived that the conservation crisis facing songbirds is solely confined to Indonesia, this is clearly not the case.

Other contributions, Caroline Dingle on stable isotope analysis and Sicily Fiennes on machine learning-driven learning image recognition tool, show that, increasingly, technology can be and is being applied as an aid to songbird conservation. The interview with the makers of the Sabda Alam music video is an example of how different skills can be used to aid conservation efforts. In this case, they explore how animation might connect us with a wider audience and by this greater exposure gain increased understanding and support.

The articles by Jochen Menner and Bertie Ferns from the Conservation Breeding and Reintroduction sub-group describe how conservation breeding programmes can be a last resort and certainly a wise precaution but are not necessarily that straightforward. It is not a comforting thought that a growing number of taxa may now exist only in captivity and that conservation breeding programmes could be their last hope. We see this in the work being undertaken with the various Shama taxa that are being worked with at the Prigen Conservation Breeding Ark. Perhaps more alarming is the fact that, in this case and several others, there is a risk of losing songbird diversity before it is properly known or understood how distinct some taxa are. Last resort or not, while some individuals exist it is not too late but recovery from low numbers is not easy and takes time. Bertie Ferns' account of the work with Rufous-fronted Laughingthrushes at Cikananga Conservation Breeding Centre makes the point that for certain species, conservation breeding is far from straightforward and it takes time to fully understand their requirements for successful captive management.

It is really pleasing to be able to feature the encouraging news on Bali Myna. The authors of this contribution state that the work on this iconic species is finally paying dividends and it is showing signs of recovery. This species was extensively trapped fifty years ago and was probably the first of what is now far too common where it is realised that poaching of many songbirds has brought them to the very edge of extinction. It is only by the supplementation with captive breed birds that has enabled the wild population to survive. This has been a long time in the making and illustrates that species recovery programmes usually require long-term commitment if they are to be successful.

In this respect it is appropriate to draw your attention to the article that appeared in the latest edition of BirdingASIA, as this details the support that has been given during the pandemic to sustain vital ongoing songbird conservation projects. It is important to consider that even when we are through the current Covid-19 emergency many of the recovery programmes for songbirds that are being embarked upon will require sustained support to secure them in the long-term and there are likely to be few quick fixes.

I do hope you find this newsletter informative and useful in keeping up to date with at least some of the activities that are going on to improve the situation for Asian songbirds so affected by trade. Do also check out our social media for information on what is going on. These avenues all serve to try and keep us better informed and if you have news items you would like to share do please send them.

- David Jeggo

TRADE AND LEGISLATION

photo by Sofiya Shukhova

Yellow-vented Bulbuls

CREATING A MACHINE LEARNING-DRIVEN IMAGE RECOGNITION TOOL FOR ASIAN SONGBIRDS

Written by Sicily Fiennes[1,2]

[1] *University of Leeds*
[2] *Member of Trade and Legislation sub-group, ASTSG*

Project summary

Southeast Asian bird trade involves hundreds of wild bird species. While bird identification experts exist, there are many more marketplaces than there are experts. In general, species misidentification or lack of identification can lead to underestimating species richness and volume in marketplaces and can limit the detection of illicit trade. Studies in Indonesian marketplaces and national seizure data have revealed a range of 25 - 36% of birds as unidentified to species level.

The magnitude of this trade poses immense challenges for law enforcement agencies, especially since there is not yet the technology to rapidly identify species. There is, therefore, a great need for easy to use, cheap, and practical tools to support law enforcement. Although past work has shown that artificial intelligence (AI) can identify individual birds, it was unknown until recently if the same algorithms could identify birds behind cage bars in wildlife markets.

Sicily Fiennes, a PhD student at the University of Leeds tested a proof of concept for using AI to identify Asian songbirds from market images in a previous Master's project. This involved working with conservation organisations and many talented photographers (special thanks to the excellent James Eaton) to build a photo repository for 37 species.

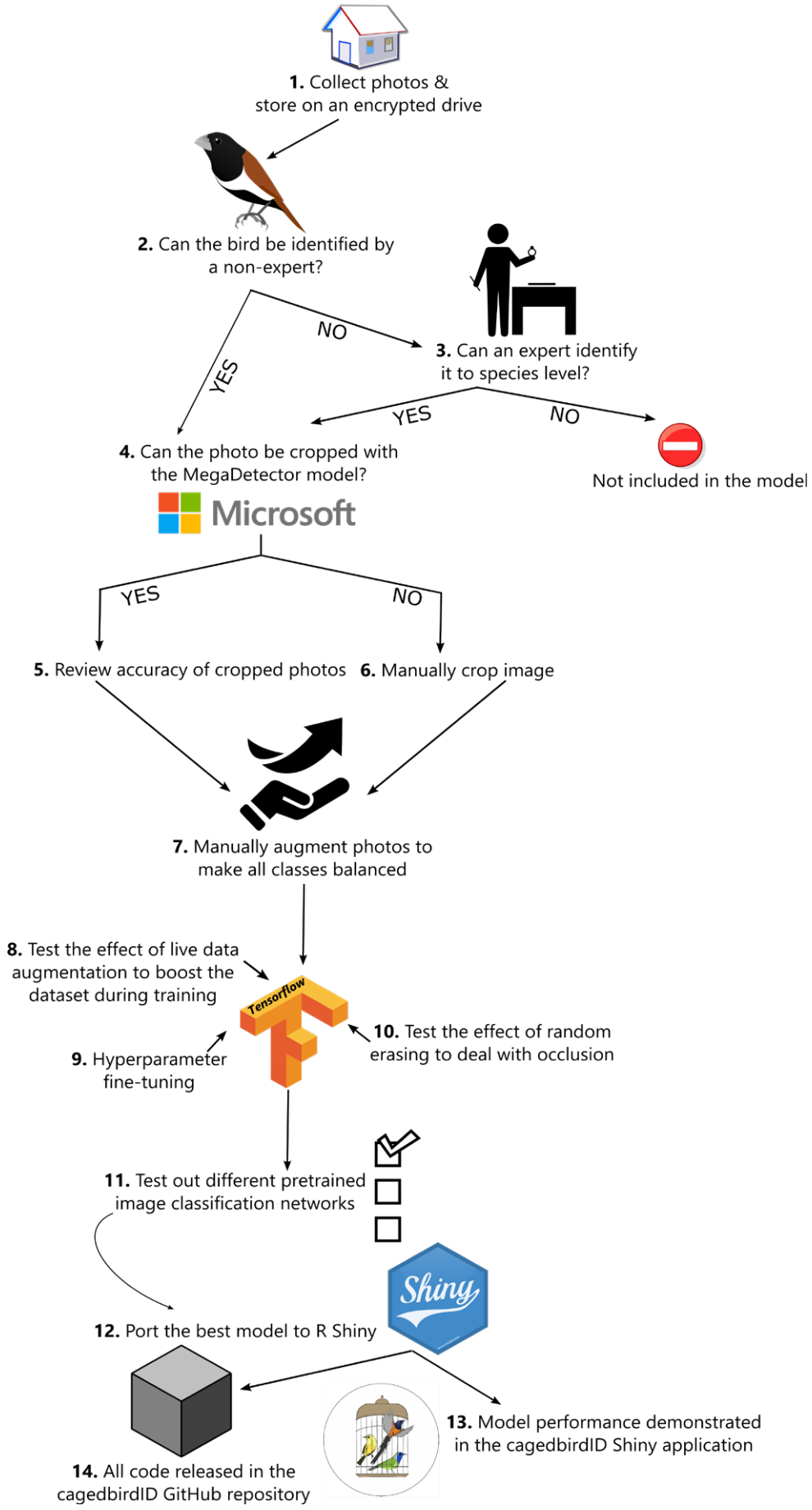
Image-based classification

The general use of an image-based machine learning model is to classify categories (from a pre-labelled data set) and assign labels to new, unseen images. Pre-trained models are available, trained on over 1,000 classes and 1 million photos, which can be used to learn new, small-scale datasets such as those assembled for this project. The initial results from this research are encouraging. On a relatively small test set of unseen images (c.a. 1,500), an accuracy of 94% was achieved, where the correct species was the top label predicted by the model.

The code for building the image classification model can be found online to make this information more widely available to other practitioners. Planned updates to the existing technology involve boosting data collection to incorporate more species into technology and training another algorithm to count the number of birds in images. This technology development process will occur in parallel with discussions on technology use and extinction themes with law enforcement actors.

Potential impacts

Technology explicitly focused on bird identification could mitigate the extinction of endangered bird species by enhancing data



The model workflow for the project

collection and providing a toolkit to monitor responsible, legal bird trading. The resulting application from this project could serve as an aid during market surveys conducted by NGO staff or even have a replacement role in market confiscations, processing birds at checkpoints and during seizures.

Challenges

Potential challenges lie in terms of the usability of image-based software in saturated marketplaces, where traders may be unhappy with visitors (local or international) taking photos and the viability of technology to deal with the cryptic diversity of the several subspecies involved in the trade. Nonetheless, we are still actively collecting pictures, so you are welcome to contribute here.

An example of a sample user interface and predictions of the species identity

photo by Koji Tagi

Collared Laughingthrush

WHEN COLLECTORS' TRADE BECOMES AN ADDITIONAL THREAT: THE CASE OF THE COLLARED LAUGHINGTHRUSH

Written by Simon Bruslund[1,2,3]

[1] *Marlow Birdpark*
[2] *Monitor Songbird Lab**
[3] *Member of Trade and Legislation sub-group, ASTSG*

The Collared Laughingthrush *(Trochalopteron yersini),* a restricted range species, endemic to the Da Lat Plateau in central Viet Nam is primarily threatened by habitat degradation leading to fragmentation. The declining population is estimated between 2,500 - 10,000 individuals and the species is currently listed as Endangered in the IUCN Red List of Threatened Species. Foden et al. assessed the species vulnerability to climate change as overall high.

It occurs within the Alliance for Zero Extinction Bi Dup - Nui Ba site, one of the priority sites for global biodiversity conservation, which has also been designated as a Key Biodiversity Area, however additional protection commitment of this high biodiversity priority site is still pending.

The majority of its range is within the national parks Chu Yang Sin and Bi Doup Nui Ba and the species is legally protected in Viet Nam under *Decree of Government No. 32/2006/ND-CP, and Decree 06/2019/ND-CP on management endangered, precious and rare species of forest fauna and flora* demanding licencing for any trade and trapping.

Unfortunately, these measures do not seem to offer sufficient protection, and although the Collared Laughingthrush's conservation priority is amply demonstrated, there are currently no conservation activities dedicated to this species that are known to the author.

In 2013 and 2016 Hung and Craik documented the first indications of regular but low trade in

the species in the domestic market which they described in their 2016 article *Notes on the trading of some threatened and endemic species from Vietnam*. Therefore, it was disconcerting to observe at least two importations of multiple birds into the European Union (EU) between 2016 and 2018. It is estimated that at least 40 birds arrived through imports from the wild during this period, with birds offered for sale and kept by collectors in Netherlands, Germany, Greece, France, Portugal and UK as reported by Juergens et al. in the Songbirds in Trade Database. In the EU, the species is traded at high prices exceeding EUR 2,000 per pair and there is an ongoing demand for the species expressed in social media. Prior to these import events the species has not been kept in aviculture in Europe and there is no indication that the entry in the EU was legal considering import restrictions have been in place since 2005.

If the species is targeted further, future trade and trapping should indeed be considered a very real additional risk to its survival.

*The Monitor Songbird Lab is a collaborative effort between the Silent Forest Group, Species360 - Conservation Science Alliance and Monitor Conservation Research Society which aim to make evidence-based, information on songbird trade available to stakeholders, decision-makers and conservation organisations as well as advocate for conservation action.

In the case of the Collared Laughingthrush the Monitor Songbird Lab recommend introducing international trade regulations.

Collared Laughingthrush offered on social media in the EU, 2019

photo by TRAFFIC

Hume's White-eye seizures among a menagerie of wildlife confiscated in Malaysia

PENINSULAR MALAYSIA'S REVISED WILDLIFE LAW PACKS A PUNCH: WHAT DOES IT MEAN FOR SONGBIRDS?

Written by Kanitha Krishnasamy[1,2] & Elizabeth John[1]

[1] TRAFFIC International Southeast Asia
[2] Member of Trade and Legislation sub-group, ASTSG

It took a decade but finally, the Wildlife Conservation Act (WCA) 2010 got a much-needed update in December 2021 when Parliament passed the amendment Bill. Much of the debate and focus previously was placed on protecting species from poaching and hunting. This absolutely remains crucial, but to be more wholly effective in protecting species, the threats associated with illegal trade cannot be treated as the poor cousin. Trade concerns are now prominent in the long list of amendments introduced in the revised law. These include tighter regulation on traders, permits and licensing, import-export, captive breeding, trade in controlled species, record-keeping, organising competitions and the use of wildlife for religion, culture or tradition.

Powerhouse fines have been introduced (see table on the next page; based on Bill presented and passed in Parliament), for totally protected species (generally prohibited from hunting, trade or possession) and protected species (hunting and trade is regulated). Songbirds are listed in both categories. Birds are often also trapped in wildlife reserves and sanctuaries, and new provisions have been introduced to cater for this problem. In a clause for 17 totally protected species, including the Straw-headed Bulbul *(Pycnonotus zeylanicus)* as the only songbird species, violations now carry higher penalties. Malaysia is amongst few countries that specify higher penalties for juvenile and female wildlife. This distinction - when used - can send a strong message to poachers and traffickers particularly given that high-volumed birds that are trafficked regularly involve a male-female-juvenile combo.

photo by PERHILITAN

Juvenile White-rumped Shamas seized in Malaysia in 2021

photo by Jonathan Beilby

Straw-headed Bulbul

In several provisions, minimum fines have been substituted for maximum penalties. TRAFFIC's monitoring of wildlife case prosecution and conviction show that rarely, if ever, are maximum penalties utilised. The introduction of minimum fines also eliminates the opportunity to hand out paltry penalties. Importantly, the removal of a maximum fine allows the court to determine the severity of a case and issue a fine based on the role offenders play; whether they are individuals keeping a few birds without a license, or hunter, middleman, supplier or trader that is part of a more extensive network, systematically collecting, distributing and trafficking thousands of birds at a time.

Another significant change in the new law is that species requiring stricter control are listed separately in a Schedule, rather than explicitly named within a Section. This means the

Subject	Wildlife Conservation Act 2010 (old)	Wildlife Conservation Bill (Amendment 2021)
Hunting, taking, disturbing or destroying anything at all from a reserve or sanctuary; applies to all species, including birds, bird nests and eggs.	No corresponding clause	Maximum MYR 1 million (USD 250,000) and up to 10 years imprisonment
Section 60 (2) [specifying White-rumped Shama, Oriental White-eye, and Hill Myna]*	Violations exceeding 20 birds: MYR 20,000 - 50,000 (USD 5,000 - 12,500) fine, or up to 3 years imprisonment, or both	Violations exceeding 5 birds: Minimum MYR 50,000 (USD 12,500) fine, or up to 3 years imprisonment, or both Violations under 5 birds: MYR 20,000 - 50,000 (USD 5,000 - 12,500) fine, or up to 3 years imprisonment, or both
Section 61 & 62 [concerning juvenile and female protected species]	Maximum MYR 100,000 (USD 25,000) fine or up to 5 years imprisonment, or both	Minimum MYR 20,000 (USD 4,000) fine or up to 7 years imprisonment, or both
Section 65 [concerning illegal import and export of protected species]	MYR 20,000 - 50,000 (USD 4,000 - 12,500) fine and up to 1 year imprisonment	Minimum MYR 50,000 (USD 12,500) fine and up to 15 years imprisonment
Section 68 [violations concerning totally protected species]	Maximum MYR 100,000 (USD 25,000) fine or up to 3 years imprisonment, or both.	MYR 50,000 - 500,000 (USD 12,500 - 125,000) fine or up to 3 years imprisonment, or both
Section 68 (2)b [specifying select number of totally protected species, which includes the Straw-headed Bulbul as the only songbird species]	MYR 30,000 - 100,000 (USD 7,500 - 25,000) fine, and up to 2 years imprisonment, regardless of the number of birds	MYR 30,000 (USD 7,500) per bird, and up to 15 years imprisonment
Section 69 [concerning juvenile totally protected species]	Maximum MYR 200,000 (USD 50,000) or up to 10 years imprisonment, or both	Minimum MYR 20,000 (USD 5,000) per animal, but not exceeding an aggregate of MYR 500,000 (USD 125,000) and up to 15 years imprisonment
Section 70 [concerning female totally protected species]	Maximum MYR 300,000 (USD 75,000) or up to 10 years imprisonment, or both	Minimum MYR 20,000 (USD 5,000) per animal, but not exceeding an aggregate of MYR 500,000 (USD 125,000), and imprisonment of up to 15 years or both
Section 71 [concerning illegal import and export of totally protected species]	MYR 30,000 - 100,000 (USD 7,500 - 25,000) fine and up to 3 years imprisonment	Minimum MYR 20,000 per animal but not exceeding an aggregate of MYR 1 million, and imprisonment of up to 15 years or both

Table: Summary of some key amendments WCA as is it applicable to songbirds.
Note: In most cases, violations for a species includes either the animal, its part or derivatives.

Wildlife Department may now amend species listings in a Schedule as needed, rather than undergoing arduous parliamentary processes to amend a Section in the law. As a species becomes threatened, from the cage bird trade for example, this allows the government to respond more nimbly to threats. This change applies to a new Schedule introduced for regulating hunting, keeping and illegal trade for three songbirds – White-rumped Shama *(Copsychus malabaricus)*,* Oriental White-eye *(Zosterops palpebrosa)*** and Hill Myna *(Gracula religiosa).* These species were reported on extensively previously due to the large number of seizures for both domestic and international trade across the region.

The highly-debated illegal online wildlife trade now has a dedicated clause that limits the promotion of wildlife for business purposes to a licensed dealer. TRAFFIC's past online surveys and continued monitoring show that online platforms are the leading marketplace for the live bird trade, both for totally protected and protected species. What remains ongoing is a revision of the species protection list, along with the administrative procedures and regulations. It is hoped that the new list will more realistically consider species already severely threatened from trade, like the Oriental Magpie-robin *(Copsychus saularis)* that continues to be poached and trafficked in large numbers.

The new law is expected to come into force in July 2021. These amendments pack a strong punch and can safeguard species from its threats. But their effectiveness rests solely on how well the law is wielded, backed by sufficient resources, skills and expertise to prevent and tackle wildlife crime head-on.

photo by PERHILITAN

Some of the thousands of Oriental Magpie-robins seized by the Peninsular Malaysia Wildlife Department in 2020

*Some authors use *Kittacincla* as an alternative to *Copsychus* for Shamas

**Under IUCN nomenclature, this now falls under Swinhoe's White-eye *(Zosterops simplex)* due to a taxonomic overhaul of the *Zosterops* complex. Several other species have undergone taxonomic changes, and therefore species names in the WCA should be updated accordingly.

FIELD RESEARCH

photo by Mas Untung

Bali Myna perched on the top of a family temple in Gilimanuk

BALI MYNA: CONSERVATION ACTION FOR AN ENDEMIC SPECIES

Written by Luh Putu Eswaryanti Kusuma Yuni,[1,2] Thomas Squires[2,3,4] & Stuart Marsden[3,5]

[1] Udayana University
[2] Member of Field Research sub-group, ASTSG
[3] Manchester Metropolitan University
[4] Member of Conservation Breeding and Reintroduction sub-group, ASTSG
[5] Vice-chair of Field Research sub-group, ASTSG

The Bali Myna *(Leucopsar rothschildi)* is the only bird species endemic to the island of Bali in Indonesia and has been designated as the symbol of the Province of Bali since 1991. Its existence was first reported by Dr. Baron Stresemann in 1911 and its initial population size was retrospectively estimated to be 300 - 900 individuals, although this may have been an underestimate. The myna is only historically known to have occurred along Bali's north-west coast from Bubunan in the east to Bali Barat, and from there along the south-west coast as far as Negara. The combined pressures of trapping for the pet trade and habitat loss precipitated enormous declines in the Bali Myna population. The export of hundreds of birds to Europe and the United States in the 1960s and 1970s prompted the myna's inclusion to the Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Additionally, it has been protected under Indonesian law since 1957, is listed as Critically Endangered on the IUCN Red List of Threatened Species, and Bali Barat National Park (BBNP) was designated in 1984 to preserve its remaining habitat. Despite legal protections and efforts to conserve the species that began in the early 1980s, the Bali Myna population continued to decline, and it is suggested that it went extinct in the wild in the 2000s.

photo by Andri Nugroho

Bali Myna (with rings) perched on Kemloko (Phyllanthus emblica) branches at Bali Barat National Park

In 2007, the Bali Myna conservation strategy was ratified by the Director General of Forest Protection and Nature Conservation. In 2015, a Decree of the Director General of Conservation of Natural Resources and Ecosystems determined that 25 priority endangered Indonesian species, including the Bali Myna, should be managed to increase their population by 10% (2015 - 2019). Underpinning the above legislation, rehabilitation efforts have been carried out through multiple release efforts in the

myna's natural habitat in BBNP. Recent monitoring data indicate that the number of free-flying birds in BBNP had reached around 355 individuals in 2020 (BBNP unpublished data). Many of these individuals were from the captive breeding programme, but the population also included many wild-bred birds. A foundation of the apparent success of Bali Myna management in BBNP has been the obligation for any breeder of the species within Indonesia to return at least 10% of the captive yields to their natural habitats.

We have been studying the Bali Myna in and around BBNP since 2019, with the assistance of Mas Untung Sarmawi and Andri Nugroho in the field. We have recorded mynas in several areas both inside and outside the national park. We have recorded mynas at several sites around the Prapat Agung peninsula that were known to be favoured historically and, excitingly, we have also recorded birds recolonising areas to the east and south of the national park's limits. Birds have been observed perching and foraging in trees near to human settlements, as well as foraging in papaya and coconut plantations, and possibly even nesting in some of these areas as well. As part of a year-long productivity study, we monitored the nestboxes that have been installed at several sites in the national park, and documented 76 Bali Myna chicks fledging from 54 nesting attempts. Considering the recent history of the species, our initial tentative findings that suggest population growth and occupied area expansion are reasons for cautious optimism. However, the population is still heavily supplemented by captive-bred individuals, so there is undoubtedly a long way to go before the population can become self-sustaining.

Cooperation between the national park and both local and international partners must continue to be improved, including the regular monitoring of the wild population, further study of its ecological needs, and empowerment of the local community surrounding the national park. But there are signs that our efforts are starting to bear fruit and with it, the chances of survival for Bali's iconic endemic myna.

photo by *Andri Nugroho*

Bali Myna feeding its young at a nest box at Bali Barat National Park

GENETIC RESEARCH

photo by Sofiya Shukhova

Birds on sale in Hong Kong

STABLE ISOTOPE ANALYSIS TO DETECT ILLEGAL TRADE

Written by Caroline Dingle[1,2]

[1] *The University of Hong Kong*
[2] *Member of Genetic Research sub-group, ASTSG*

Determining whether an animal is being traded legally or illegally often depends on whether the individual was caught from the wild or bred in captivity. However, it can be difficult if not impossible to distinguish between captive-bred or wild-caught individuals visually. In those cases, other methods are needed to help determine an individual's origin. Stable isotope analysis (SIA) has been shown to be useful for this purpose in a range of taxa involved in trade, from mammals, to fish, reptiles, and most recently in birds (Grey Parrots *(Psittacus erithacus)*, Yellow-crested Cockatoos *(Cacatua sulphurea)*).

Stable isotopes are variants of the same element which have different molecular weights. The ratios of these heavy and light isotopes in nature vary depending on geographic location, rainfall patterns, and photosynthetic pathway at the base of food webs, along with other factors. Analysis of carbon and nitrogen isotope ratios are particularly useful for detecting dietary variation between individuals. Carbon isotope ratios differ depending on whether the plants at the base of the food web are C3 (most plants) or C4 (many grasses and agricultural products), and nitrogen ratios vary between trophic levels within a food web. Captive animals that are fed a different diet than their wild counterparts have been shown to have different isotope signatures in their tissues than wild individuals.

In birds, isotope ratios are often measured in feathers. Feathers are inert so isotope ratios do not change once the feather has finished growing. Isotope ratios measured in feathers will therefore reflect a bird's diet while the feather was growing. By measuring stable isotope ratios in a bird's feather, we should therefore be able to detect whether the bird was eating a wild or captive diet at the time of feather growth. In our study on Yellow-crested Cockatoos, led by Dr. Astrid Andersson, we collected feathers from wild and captive cockatoos in Hong Kong and showed that SIA could reliably distinguish between the two.

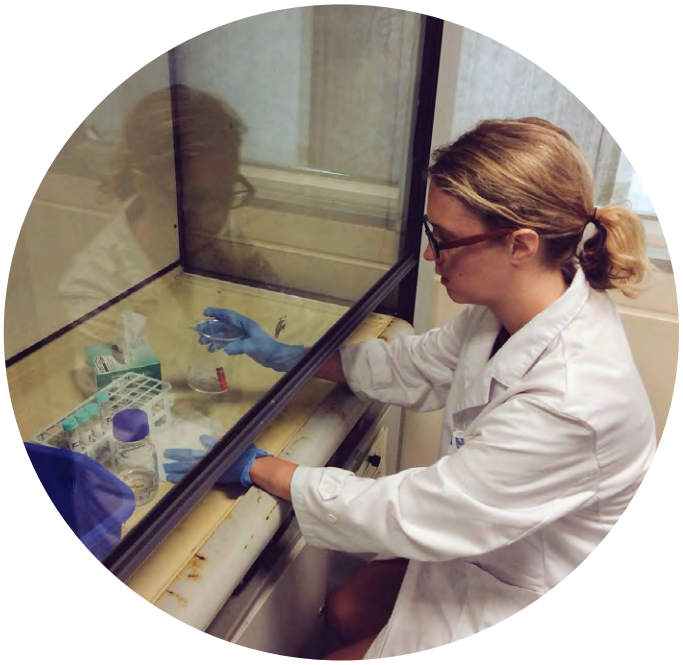


photo by Hannah Tilley

PhD student Astrid Andersson preparing feathers for stable isotope analysis in the lab

In the few cases where SIA gave ambiguous results, we used a novel technique - compound specific isotope analysis (CSIA) - which allowed us to measure isotope ratios of individual amino acids, providing a higher resolution isotopic "fingerprint". This approach allowed us to confirm captive vs wild origin in those ambiguous samples. Together, both bulk and compound specific isotope analysis provide a powerful method for testing the origin of individuals in trade.

While SIA is a promising tool for detecting illegal trade, there are some important limitations which will require more research to resolve. One clear challenge is that birds molt their feathers at least annually, and when a bird that was caught in the wild grows a new feather while in captivity, the isotope signatures in that feather will reflect the captive diet, not the wild diet. To overcome this limitation, SIA can be conducted on different tissue types which maintain stable isotope ratios for different periods of time. For example, the stable isotope signature in blood will turn over every few days, while claws provide a continuous record of diet for up to six months. Isotopes of other elements, such as sulfur or hydrogen, can also provide important information about geographic origin and diet. Given that SIA can provide data important for enforcement efforts, more research in this area is encouraged.

photo by Sofiya Shukhova

Oriental Magpie-robin

This method should work with songbirds as long as the diets in captivity differ substantially from diets in the wild. Songbirds that rely on a frugivorous or insectivorous diet in the wild are most likely to have different isotope ratios than captive birds. We plan to test the ability of SIA to differentiate between captive and wild Oriental Magpie-robins *(Copsychus saularis)* and Swinhoe's White-eyes *(Zosterops simplex)* here in Hong Kong.

EDUCATION AND COMMUNITY ENGAGEMENT

photo by Theodore Squires

REDUCING DEMAND FOR SONGBIRDS: THE IMPORTANCE OF UNDERSTANDING BIRD KEEPER MOTIVATIONS

Written by Harry Marshall[1,2] & Stuart Marsden[1,3]

[1] Manchester Metropolitan University
[2] *Member of Education and Community Engagement sub-group, ASTSG*
[3] *Vice-chair of Field Research sub-group, ASTSG*

As with many causes of biodiversity loss, demand for songbirds globally as pets is driven by people's behaviour. The reasons people engage in behaviours are often as important to the individuals or communities as the behaviours themselves. If as conservationists we want to reduce the impact or frequency of behaviours that negatively impact biodiversity, it is clear that we must listen to people's reasons and motivations for doing so.

Myself and colleagues (from Manchester Metropolitan University, Universitas Atma Jaya Yogyakarta, Chester Zoo and BirdLife International) recently published a study that aimed to provide an understanding of the reasons and motivations behind bird keeping in Java, Indonesia. The study used a mix of quantitative and qualitative social science methods to enable a rich telling of the situation. We asked people why they did not, started, and stopped keeping birds, and then used a grounded theory approach (essentially going in with an open mind and creating categories from responses) to obtain final categories. We ended with nine main reasons for starting their hobby, and six main reasons for not keeping birds. We also asked people to rate agreement (strongly disagree to strongly agree) with statements regarding wild birds and bird keeping. Finally, we explored the use of the 'theory of planned behaviour' (a theory which posits that behaviours are immediately determined by behavioural intentions) to predict intention to obtain wild-caught birds.

photo by Harry Marshall

Bird shop in East Java

Through listening to stories from both those who owned or did not own birds, we were able to capture an understanding of respondents' motivations. Few people cited health, sanitary or welfare concerns as reasons for not keeping birds as pets, in contrast to typical western concerns for welfare and a global concern for transmission of disease

from wildlife to humans. *Hobbyists* tended to start their hobby opportunistically (often after receiving birds as gifts) whereas *Contestants* and *Breeders* cited financial motivations. Interestingly, bird keepers were more likely than non-bird-owners to think bird keeping endangers them in the wild and to be concerned about the state of wild bird populations, yet tended to think birds lived longer in cages than in the wild. Worryingly though, the most abundant user-group (*Hobbyists*) were also the least concerned about wild bird populations. Social norms, such as peer pressure, appeared important drivers of intention to keep wild-caught birds, and as such may provide an avenue to reduce the acceptability of such behaviour.

Context is incredibly important in informing behaviour change programmes, and our paper provides a contextual glimpse of bird keeping behaviour to guide future efforts to reduce the impact on wild birds of a culturally and socially important hobby. Although we have plans to use these results to carefully construct messages to engage bird keepers, ideally our paper will also prove useful to other conservationists seeking to reduce the impact of bird-keeping behaviour in similar contexts. Finally, I want to state how privileged we feel to have been fortunate enough to hear people's diverse personal reasons and motivations for choosing to engage (or not) in the keeping of birds as pets.

photo by Harry Marshall

Bird singing contest in East Java

BEHIND THE SCENES OF CREATING THE *SABDA ALAM* MUSIC VIDEO ABOUT BIRD TRADE IN INDONESIA INTERVIEW WITH IVAN NADI[1], LUCE CHIARO[2] & REINO DWI[3]

[1] *Mentor at RUS Animation Studio and Director of the Sabda Alam animated video*
[2] *Student at SMK RUS Kudus & VFX Artist*
[3] *Student at SMK RUS Kudus & Concept Artist*

In September 2021, the *Sabda Alam* music video filled the social media feeds of songbird enthusiasts. By the time of publishing this newsletter, the video has been viewed over 3 million times on YouTube and shared widely across various social media platforms. The animation was produced by 95 students from SMK RUS school, and includes stories of some of Indonesia's most iconic bird species: Javan Green Magpie *(Cissa thalassina)*, Yellow-crested Cockatoo *(Cacatua sulphurea)*, Helmeted Hornbill *(Rhinoplax vigil)* and Bali Myna *(Leucopsar rothschildi)*.

We interviewed a mentor and two students involved in the video production. Ivan Nadi, Luce Chiaro and Reino Dwi's responses provide an insight into the inspirations, research and work process behind their video.

The whole video can be found on YouTube: *Sabda Alam (Music Video ft. Tohpati, Eva Celia, Fadly Padi, Mytha Lestari, Mario Ginanjar, Leisha K)*. We thank Muhammad Meisa and Ria Saryanthi from Burung Indonesia for helping to conduct this interview.

How did this project start, and what inspired you to create an animation video about birds?

Ivan: We were motivated by the fact that the types of birds in Indonesia are very diverse. People's interest in birds led to bird's trading, and these poor birds were often treated sadistically in the process. Some were put in bottles, and from what I read, half of the birds smuggled in died. Of course, it can reduce the bird population and the way it is handled is very unethical. Considering it, we decided to make a video that educates about the rights of birds to live freely in their nature.

Luce: This project was carried out by students from several generations because the production process took a long time. We cared about the environment and wanted to contribute. As vocational students, all we can do is create works that hopefully later can motivate people to preserve the environment.

photo by Djarum Foundation

Rus Animation Studio

What was your process of researching the topic prior to creating the animation?

Ivan: This video could be done in about nine months, but due to the pandemic, it took two years to finish it. Because the students were the ones working on it and we did not want them to be exposed to the virus, we followed government regulations by letting them stay at home and continued the production at school whenever it was possible.

A total of 95 students were involved. 3D animation has a lot of disciplines, namely concepts, modelling, animation, rendering. So, the team was divided into those divisions. Every student engaged in this video already had their own abilities.

Animating animals, specifically birds which have details of feathers, wings and others, was one of our challenges. We were working on how to create an animated character with natural realistic elements, how to bring the audience to feel as they are in the middle of nature, how to animate the specific movements of birds that if it slightly differs from the original without it feeling strange. We were trying to apply the natural behaviour of the bird to the animated video.

Reino: We went to Cikananga Wildlife Center to see the birds and observe their movements, in particular the animation team, who had to mimic the bird's movements as closely as possible to the real thing. We also studied bird anatomy from the internet and films. In addition to the content, we also research suitable software, for example, the one that can create bird feathers to look more detailed. We did in-depth research.

Luce: We spent a lot of time working on the birds' appearance, so each characters' look and movements ressemble real birds. The research was long, since in this project most of the characters had feathers. We finally got the right workflow using software to speed up the process. Even finding the right software took months of research.

photo by Djarum Foundation

Rus Animation Studio

What message do you wish the viewers to take away from your video?

Ivan: What we wanted to convey to the audience was that the birds were already living comfortably in nature, but they were disturbed, caught and traded. We would not want that to happen to our family, right? We hope that whoever watched the video become aware that the birds have families as well, and they help the preservation of nature. So, let them stay in their habitats.

How did your community, families and friends react to the video?

Ivan: They are happy and proud. I read some remarks coming from parents, cousins and families in the comment section of the *Sabda Alam* video on YouTube stating that they are proud because that was a hard and long struggle. But it all paid off. We encourage students to get involved and gain experience, so that after their graduation, they have a portfolio to show to the animation industry.

Luce: Very proud, of course. Moreover, this video has also been watched by people from abroad and it made us even more proud. We are very satisfied because after going through many processes we got such appreciation. There were many positive comments from the audience and that will motivate us in the future. The video has successfully gained many audiences, and the message was successfully conveyed.

Reino: My family was certainly very happy. But what made me even happier was the response from school friends. The audience felt the story we made, so we feel that the message of the film is well conveyed.

CONSERVATION BREEDING AND REINTRODUCTION

photo by Prigen Conservation Breeding Ark

Larwo Shama

photo: Anaïs Tritto

MEET THE NEWLY APPOINTED CO-VICE-CHAIR OF THE CONSERVATION BREEDING AND REINTRODUCTION SUB-GROUP OF ASTSG INTERVIEW WITH ANAÏS TRITTO[1,2]

[1] Jurong Bird Park
[2] *Vice-chair of Conservation Breeding and Reintroduction sub-group, ASTSG*

Congratulations on becoming Co-Vice-Chair of the Conservation Breeding and Re-introduction sub-group of ASTSG! How would you describe your new role?

Anaïs: Thank you, I am very excited to be part of the core member group! My new role, together with Andrew Owen who is the second Co-Vice-Chair for this group, is to facilitate the communication between all the members of the Conservation Breeding and Reintroduction sub-group and give additional advice in terms of captive breeding for selective species. By overseeing all these interesting projects, we ensure that each project is aligned with the objectives defined by the IUCN SSC ASTSG and are communicated effectively to the other sub-

groups. As reintroduction projects are always coupled with community awareness and field research, it is important to continuously update the different sub-groups as overlap may and should happen to ensure the success of a conservation programme.

How long have you been working with songbirds?

Anaïs: I have been working with songbirds since 2009 during my University degree when I will either run some research projects (the biggest one being on the Blue-crowned Laughingthrush) or as a bird keeper during my holidays. I have joined Cikananga Conservation Breeding Centre (CCBC) in 2013 as a Field Biologist for the reintroduction programme of the Black-winged Myna, then as a Conservation Manager and finally as a Curator of the breeding centre. In 2018, I joined Mandai Wildlife Group in Singapore to be the Curator of Birds at Jurong Bird Park and I have been working there since then. My job at Jurong Bird Park is extremely enriching since I manage over 3,800 birds of 400 species in a greenery park in the middle of this small city-state. Our collection of Asian songbirds is big with over 40 species with several threatened ones, such as the Straw-headed Bulbul or the Black-winged Myna, that we also manage the studbooks.

Why did you choose to work with Black-winged Mynas?

Anaïs: During my University degree, I was extremely interested in Asian songbirds and I started to do research projects on them. When I graduated, I have been given the opportunity to go to CCBC to do additional research on Sumatran Laughingthrush and Rufous-fronted Laughingthrush. I have discovered the Black-winged Myna there and, during my time in Indonesia, a release of Black-winged Myna happened. I was very lucky to be part of the monitoring team. I immediately fell in love with this bird and decided to work in CCBC and continue the good work implemented by my predecessor. My passion for them continues here in Jurong Bird Park where I can still participate in their conservation even if I am not in the field with them anymore.

What does it mean to coordinate the EAZA ex-situ programme (EEP) for the Black-winged Myna?

Anaïs: Being the coordinator of an EEP means that we are the holder of all the genetic and demographic information of the species in captivity, both living and past captive population. This is the responsibility of the EEP coordinator to analyse these data and propose the best pairing recommendations that will maintain a high percentage of genetic diversity, which is vital for the long-term preservation of the species. These data are presented to a Species Committee, which gather several experts in this or similar species, and the decision is done together. Making good recommendations does not only include genetic information but also the age of the birds and the zoo location as we may face some restrictions in moving birds from one country to another, especially with Avian Influenza or, more recently with Covid-19 that created financial issues for zoos or additional flight restrictions.

You are a holder of the International Studbook (ISB) for the Black-winged Myna. Could you explain how does ISB work and impact songbird ex-situ conservation?

Anaïs: ISB is not different than an EEP in the content, only the range of targeted zoological institution changes. An EEP includes all zoos that are European Association of Zoos and Aquaria (EAZA) members and, as an European Association, they are mainly located in Europe. The ISB is under the umbrella of the World Association of Zoos and Aquaria (WAZA) and it includes zoos worldwide that are part of this association. So the ISB has a global range and the EEP could be considered as an sub-population of the ISB, covering the European countries. The difference also relies in the breeding recommendations: the ISB strongly encourages the zoos to follow the breeding recommendations, while the recommendations coming from the EEP should be strictly followed.

How do you see the future of Black-winged Myna?

Anaïs: I see the future of the Black-winged Myna as challenging. The main threat is the illegal catching for the pet bird trade and it is a multi-layer challenge to tackle due to the cultural embedment, the economy built around the trade and the lack of law enforcement. The success of the preservation of the Black-winged Myna relies on the intensive work done by all the sub-groups of the IUCN SSC ASTSG and not only on the Conservation Breeding and Reintroduction. A reintroduction programme will not be successful without the wonderful and hard work done by my colleagues in terms of tackling illegal trade, increasing law enforcement and raising community awareness. We are still keeping hope that one day we will see again the Black-winged Myna flying free in Indonesia but this species has unfortunately a long way of recovery.

photo: Anaïs Tritto

Anaïs Tritto and Andrew Owen microchipping a Black-winged Myna

CONSERVATION BREEDING FOR INDONESIA'S MOST THREATENED SHAMAS

Written by Jochen Menner[1,2]

[1] Prigen Conservation Breeding Ark
[2] *Member of Conservation Breeding and Reintroduction sub-group, ASTSG*

The Prigen Conservation Breeding Ark (PCBA) was established in 2017 as a conservation breeding facility, focusing on some of Indonesia's most threatened animal species. Located in a quiet area not open to the visiting public of Taman Safari Prigen in East Java, PCBA is a joint venture of Taman Safari Indonesia, KASI Foundation, Zoological Society for the Conservation of Species and Populations (ZGAP) and Vogelpark Marlow and is supported by a growing number of international donors. A total of 212 aviaries are designated for different songbird taxa, furthermore PCBA houses threatened parrots, galliformes, mammals and fish.

Indonesia's Shamas have always been in the spotlight of PCBA's attention, due to the fact that many taxa are highly threatened and traded in unsustainable numbers. In the beginning, the less threatened White-crowned Shama *(Copsychus (m.) stricklandii)** was bred to train the team in preparation for eventually focusing on more threatened taxa.

In 2018 the first Maratua Shama *(Copsychus (m.) barbouri)** were discovered in social media posts of Javanese bird hobbyists and PCBA was able to secure first founder individuals. With no record of wild Maratua Shamas since 2011 and all birds received so far being quite old, it has to be assumed that this species is extinct in Maratua Island and today only survives at PCBA.

Until today ten birds have been discovered in private hands all over Indonesia and were subsequently moved to PCBA. Of these three males and seven females, two males and five females have so far contributed to the small ex-situ population. Maratua Shamas are not only morphologically very distinct from other Shama taxa but also behaviourally quite different. Not only are the males very aggressive but even females among themselves and even towards the males can be very aggressive, making breeding efforts more difficult than previously thought.

photo by Prigen Conservation Breeding Ark

Maratua Shama

photo by Prigen Conservation Breeding Ark

Larwo Shama

In 2020 the first Larwo Shamas *(Copsychus (m.) omissus)** were handed over to PCBA. Endemic to central and eastern Java, this species was long overlooked, deemed to be indistinguishable from other Shamas and possibly already extinct. Both prove to be wrong, in fact the Larwo Shama is phenotypically very distinct from all other Indonesian Shamas. Even though not yet extinct, it has been eradicated from almost all of its former range and only survives in one protected area in the far east of the island, where trapping continues to be intense. At PCBA currently three pairs of Larwo Shama are kept and first successful breeding has been achieved in 2021.

To our great surprise, in 2021 the Kangean Shama *(Copsychus (m.) nigricauda)** was rediscovered in the online trade. This species, endemic to a few islands in the Java Sea, was feared to be extinct for decades and very few literature accounts exist. While almost certainly extinct on Kangean, the species seems to survive in very small numbers on at least one other small island in the Java Sea with heavy trapping acutely threatening the survival of this population. In Java, Kangean Shamas are used to breed hybrids with Barusan Shamas *(Copsychus (m.) melanurus)*,* creating highly sought after pet birds. No efforts to breed pure Kangean Shamas seem to exist in the Javanese bird hobbyist community. With only five birds, the ex-situ population at PCBA is at a very early stage and highly dependent on the availability of additional legal founder individuals.

*Some authors use *Kittacincla* as an alternative to *Copsychus* for Shamas

photo by Prigen Conservation Breeding Ark

Kangean Shama

CHALLENGES IN CONSERVATION BREEDING: THE CASE OF THE RUFOUS-FRONTED LAUGHINGTHRUSH

Written by Bertie Ferns[1,2]

[1] *Cikananga Conservation Breeding Centre*
[2] *Member of Conservation Breeding and Reintroduction sub-group, ASTSG*

Cikananga Conservation Breeding Centre (CCBC) is situated in a small village in the foothills of West Java, Indonesia and is a main organ of the wider Cikananga Wildlife Center. Formed in 2007, CCBC was the first conservation breeding centre of its kind in Indonesia and set out with a mission to focus conservation breeding efforts on a few high priority species alongside in-situ conservation techniques. Since 2007, CCBC has grown well established breeding programmes that have consequently enabled reintroduction efforts (e.g., Black-winged Myna *(Acridotheres melanopterus)*) and the formation of ex-situ satellite populations, both nationally and internationally (e.g., Javan Green Magpie *(Cissa thalassina)*).

One species which CCBC has worked with in the ex-situ environment for almost a decade is the Rufous-fronted Laughingthrush (nominate *Garrulax rufifrons rufifrons* and subspecies *G.r. slamatensis*). A Javan endemic species, the Rufous-fronted Laughingthrush is a montane species that has been historically reported at 15 locations from West to Central Java. In the past two decades however, recorded occurrences have been limited to one location for the nominate species and one location for the subspecies. Recent studies into the market trade of this species estimate around 90 individuals per year are traded, a number which also does not take online trade into account. Whilst it is possible that the wild population estimate of 250 mature individuals is too conservative, considering the decline and relatively large numbers of birds appearing in trade annually, we at CCBC still consider the Rufous-fronted Laughingthrush to be one of the rarest bird species in Indonesia.

Due to the trends highlighted in these aforementioned studies, recommendations for the conservation breeding of the Rufous-fronted Laughingthrush have been in place for a number of years. Prior to this conservation focus, records also show this species has been kept in an ex-situ environment around the world for over two decades and consequently comprehensive ex-situ guidelines for management and breeding have followed (e.g., *Management of Laughingthrushes in Captivity, 2nd Edition* by Coles (2007), *Breeding of the Rufous-fronted Laughingthrush (Garrulax rufifrons) at Prague Zoo* by Pithard (2009) and *EAZA Best Practice Guidelines Rufous-fronted Laughingthrush, Edition 1* by Tritto). Despite these guidelines and some breeding successes, the breeding of this species however remains notoriously difficult. The very sensitive nature of this species to its environment is likely the cause of this significant challenge, with multiple factors hypothesised as impacting upon breeding efforts (e.g., proximity to other species, diet and human disturbance).

Every breeding season CCBC tries to increase our understanding of the ex-situ breeding requirements of this species. The main emphasis is on creating environments within aviaries which we believe reduce stress. This has included techniques such as aviaries with a lot of vegetation to provide visual barriers (especially around nest sites), distance from other species and experimenting with aviary size. To date, CCBC has had 26 successful hatchings; the survival rates post-hatch however are very variable and, in our current population of 16 *G.r.rufifrons*, seven individuals are not founders. These seven individuals are from four different breeding pairs. For *G.r.slamatensis*, there are no records of successful breeding by any holders. Looking ahead for the conservation breeding of this species there is still a lot of knowledge that needs to be acquired by, and shared between, holders and plans are in motion to create an EAZA ex-situ programme for the management of this species in Indonesia.

photo by H.H.Ferns - YCKT

Rufous-fronted Laughingthrush fledgling from the 2021 breeding season

photo by Theodore Squires

Thank you for reading our newsletter!

More information can be found on our website: https://www.asiansongbirdtradesg.com/

For enquiries, please email us at asiansongbirdtradesg@gmail.com

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