



THRIVE
CONSERVATION

BROKEN WINGS

SOUTHEAST ASIA WILD BIRD TRADE

Current threats and future hope for Southeast Asia's wild birds

AUTHORS:

Carla Kerstan
Made Abiyoga Udaya
Sophie Lewis
Sarah Lewis

ADVISOR:

Professor Stuart Marsden
*Manchester Metropolitan University
Vice-Chair, IUCN SSC Asian Songbird Trade
Specialist Group*

ACKNOWLEDGEMENTS:

We would like to extend our utmost gratitude to the IUCN SSC Asian Songbird Trade Specialist Group, in particular, Jessica Lee, Serene Chng and Sofiya Shukhova, for the wealth of knowledge they have provided us on the wild bird trade in Southeast Asia and their kind review of our report. We would also like to thank Professor Stuart Marsden for his insights and scientific advisory during this process. Thank you to Paul Hilton and StudioBirthplace for joining forces with us to better understand and shine a light on this issue. Finally we express our gratitude to all of the people we crossed paths with who provided us with first-hand insights and local knowledge during our investigation.

CONTRIBUTOR:

Paul Hilton

All photos included in this report are © Paul Hilton

ABOUT THRIVE CONSERVATION:

Thrive Conservation is a nonprofit organization focused on addressing localised environmental issues through dedicated frontline projects, which empower future leaders of conservation.



TABLE OF CONTENTS

SECTION 1: INTRODUCTION TO BIRDS - THE GLOBAL CONTEXT

CONSERVATION STATUS

IMPORTANCE OF BIRDS FOR PEOPLE AND THE PLANET

6

7

8

SECTION 2: BIRDS IN SOUTHEAST ASIA - AN OVERVIEW

DIVERSITY & DISTRIBUTION

BIRD POPULATION DECLINES

PRIMARY THREATS

9

10

11

11

SECTION 3: MARKETS AND TRADE - A CLOSER LOOK

DEMAND DRIVERS

MOST TRADED SPECIES

PHYSICAL BIRD MARKETS

THE ONLINE MARKETPLACE

COUNTRY-SPECIFIC TRADE EXAMPLES

CATCH AND TRANSPORT METHODS

IMPACT

12

13

15

16

16

17

18

19

SECTION 4: CONSERVATION - REASONS FOR HOPE

AREAS OF FOCUS

REASONS FOR HOPE

WORTH MORE IN THE WILD: BIRD ECO-TOURISM

23

25

26

27

SECTION 5: CONCLUSION

28

HOW YOU CAN GET INVOLVED

30

REFERENCES

32



EXECUTIVE SUMMARY

Southeast Asia is one of the most biodiverse regions on Earth, and is home to one fifth of the global bird species. Unfortunately, this richness has brought about the notorious wildlife trade, driving the harvest of approximately one-third of the world's bird species.

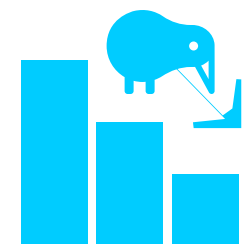
Illegal overexploitation of birds continues throughout the region to fulfil global demand for pet trades, traditional medicine, ornamental products, and food, causing wild populations to decline at alarming rates.

Over time, improved networks in the legal and illegal bird trade have expanded globally, seeing birds being sold far beyond their native regions. The significant growth of the bird trade is, in part, due to the increasing popularity of songbird competitions, now practiced in 19 countries worldwide. The trade has also penetrated the digital world, with all kinds of birds readily for sale on many online platforms. The accessibility and ease of virtual transactions no longer limit sales to physical bird-markets, and has expedited the trade significantly. The associated issues have raised deep concerns in both conservation and animal welfare contexts. Birds provide ecosystem services crucial for the health of natural habitats, and with 1,409 of all bird species classified as threatened with extinction by the International Union for Conservation of Nature (IUCN) RedList, the overexploitation of wild birds is leading to the destruction of natural balances, and spread of disease.

Nevertheless, in the midst of ever-growing concerns, regional and global conservation efforts have seen victories with promising recovery shown by native bird populations and improvements of critical habitats. Through effective awareness campaigns and collaborative frontline conservation work, there are potential opportunities, such as bird eco-tourism, that would divert Southeast Asia's passion and pride from caging wild birds to celebrating them in their natural habitat.

This report aims to shine a light on the wild bird trade in Southeast Asia and provide insight on the current status of wild birds, various aspects of the market and trade, and past and present conservation efforts. We've compiled the key relevant knowledge from various sources of literature (scholarly peer-reviewed articles, reports, and other reputable sources) into one document. Our intention was to provide an easy-to-digest resource for the general public and anyone interested in learning more about this complex yet overlooked conservation issue.

BY THE NUMBERS



49%

The proportion of bird species worldwide with declining populations



ONE IN EIGHT

The proportion of bird species threatened with extinction worldwide



260

The number of Southeast Asian bird species threatened with extinction



ONE THIRD

The estimated proportion of Southeast Asian bird species that will be extinct by 2100



66-83 MILLION

The estimated number of birds kept in cages on Java, Indonesia; arguably exceeding the number left in the wild on the island



UP TO 90%

The pre-export mortality rate of wild birds in the trade



\$120 BILLION

The annual global revenue from wildlife tourism



\$96 BILLION

The annual revenue from birdwatching tourism in USA (in 2016)



\$23 BILLION

The annual global revenue from the illegal wildlife trade



4.5 MILLION

The number of jobs provided through the wildlife watching industry in the Asia-Pacific region



INTRODUCTION TO BIRDS

SECTION 1: THE GLOBAL CONTEXT

CONSERVATION STATUS

7

IMPORTANCE OF BIRDS FOR PEOPLE AND
THE PLANET

8



CONSERVATION STATUS

According to the IUCN Red List of Threatened Species, one in eight bird species (12.8%) are at risk of extinction, while a staggering 49% of all bird species are experiencing population declines¹. These declines, which are not limited to rare species but also affect common and widespread species, are occurring worldwide. Some bird species do have stable populations (38%), but sadly, very few are experiencing population growth (6%). There also remains some whose population trends are unknown². Across North America and Europe (regions with the most comprehensive long-term data on birds) total bird abundance has declined substantially, with more than 3 billion birds lost in the last 50 years².

IMPORTANCE OF BIRDS FOR PEOPLE AND THE PLANET

PEOPLE

We may take birds for granted, but we depend on them more than we realise.

CULTURAL

The lives of birds and humans have been intertwined for millenia. Birds have served as a significant source of inspiration for folklore worldwide, with cultural and religious tales often featuring birds as key figures, lending them a reputation that transcends beyond the tales themselves.

HEALTH AND WELL-BEING

Research has suggested that exposure to birds, either through direct observation or listening to their sounds, can have a positive impact on human mental health, including increased well-being and a greater perceived restorative effect ^{3,4,5,6}.

ENVIRONMENT

Birds provide important ecosystem services that are critical for people and nature to thrive, including pollination and seed dispersal for the foods that we eat. Their sensitivity towards changes in habitat quality also make them important environmental indicators, and their presence or absence may indicate the current health of an ecosystem ^{7,8,9}.



PLANET

Birds provide many ecosystem services, essential for maintaining the balance of our ecosystems.



Pollinators



Seed dispersers



Ecosystem engineers



Predators of insects and rodents



Nutrient cycling

“Birds are indicators of the environment. If they are in trouble, we know we’ll soon be in trouble”

- Roger Tory Peterson, American naturalist, ornithologist, author.



BIRDS IN SOUTHEAST ASIA

SECTION 2: AN OVERVIEW

DIVERSITY & DISTRIBUTION	10
BIRD POPULATION DECLINES	11
PRIMARY THREATS	11

Southeast Asia (i.e. Brunei, Cambodia, East Timor, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam) is a biodiversity rich region that encompasses four of the global 25 biodiversity hotspots (Indo-Burma, Sundaland, the Philippines, and Wallacea)¹⁰.

Although the region covers a mere 3% of the world's total land area, it is home to almost a quarter of global flora and fauna, including one fifth of all bird species¹¹.

Despite the growing interest and work in this region over the last one to two decades, there are still conservation and knowledge gaps to cover and more work to be done. However, the existing studies (as referenced throughout this report) and anecdotal evidence point towards alarmingly high volumes of birds being poached and traded.

DIVERSITY & DISTRIBUTION

A remarkable 2,620 species of bird have been recorded throughout the region of which 869 are believed to be endemic, ranking Southeast Asia first, in terms of the highest mean proportion of endemic (national level) bird species of all tropical regions^{11,12}. Although birds can be found almost everywhere in the world, occupying a huge variety of habitats from the poles to the equator, their distribution both in numbers and species composition varies greatly between the different biogeographic realms. The greatest of such diversity occurs in lowland primary rainforests and coastal mangroves¹⁰.

IMPORTANT BIRD AREAS (IBAS) IN SOUTHEAST ASIA

The uneven distribution of birds across the world causes some areas to require greater conservation attention than others. The Important Bird and Biodiversity Areas (IBAs) program was developed to determine certain areas as being vital for conserving bird populations^{13,14}. Southeast Asia currently hosts 672 IBAs, covering 525,930 km² of land area^{13,15}, although not all IBAs have been granted formal protection, undermining their capacity to offer secure environments for avifauna.

BIRD POPULATION DECLINES

Throughout Southeast Asia, 260 species are threatened with extinction, with Indonesia standing out as having more globally threatened bird species (162) than anywhere else in the world². It is estimated that approximately one third of Southeast Asian bird species will be extinct by 2100, if the threats they face continue at the predicted rate^{16,17}. Such projections however, may not accurately represent the actual rate of decline in wild bird populations¹⁸, highlighting the critical need for further research and data collection.

PRIMARY THREATS



HABITAT LOSS AND DEGRADATION

Southeast Asia has suffered the second-highest magnitude of habitat loss across all tropical regions (second only to Central America and the Caribbean) due to various factors such as deforestation, agricultural expansion, urbanization, mining, and infrastructure development. Habitat fragmentation also increases the risk of extinction for species with low dispersal capacity and has been seen to have a greater negative impact on birds in the tropics¹⁹.



CLIMATE CHANGE

Tropical bird species have been highlighted as being particularly at risk from the effects of climate change²⁰ and in Southeast Asia, shifts in their ranges in response to a changing climate have already been found²¹. Climate change amplifies all other pressures birds face, especially for those species with limited geographic and climatic ranges.



MARKETS AND TRADE

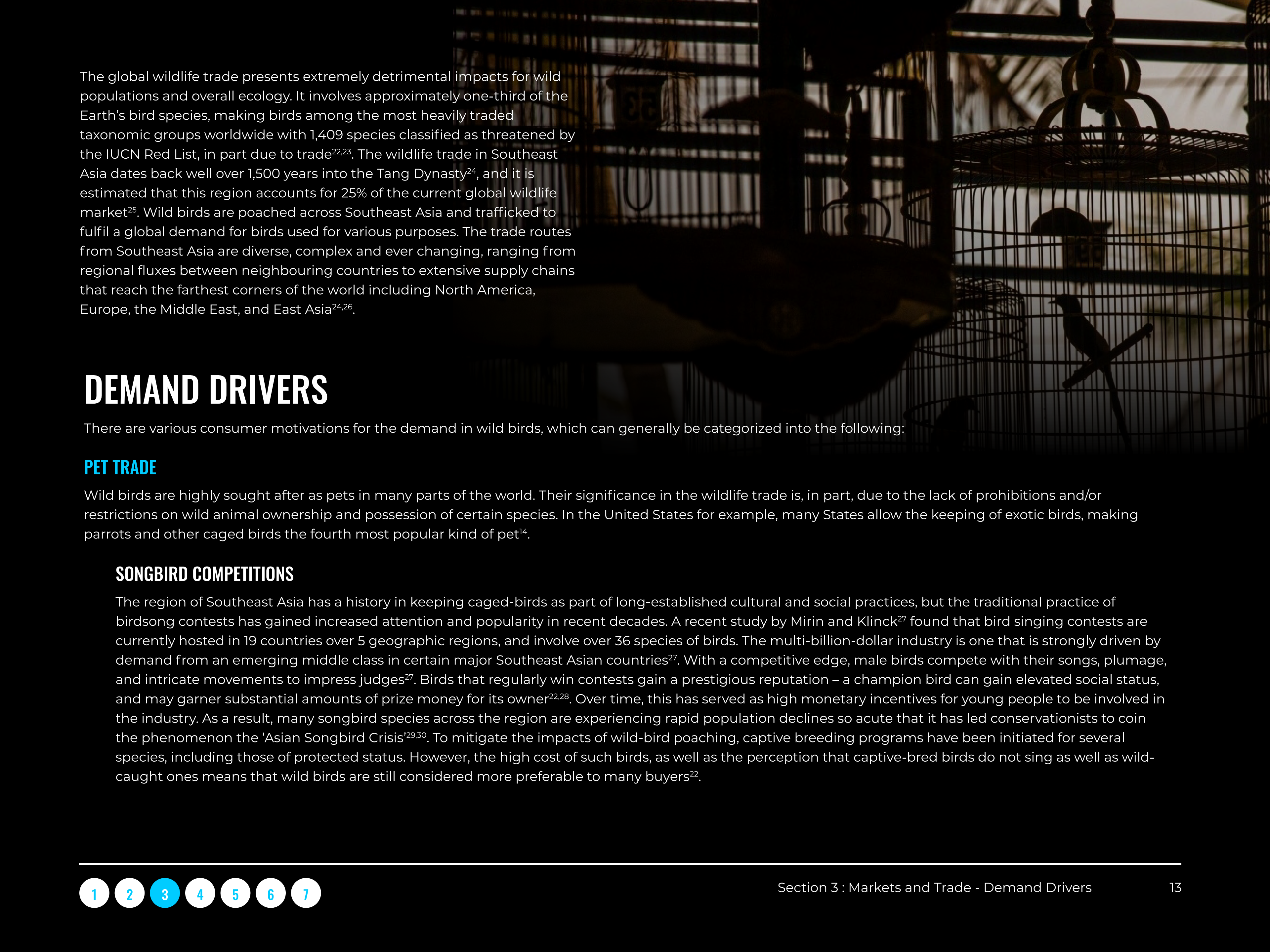
In Southeast Asia, birds are hunted and traded for meat, traditional medicine, ornamental products, and to be kept as prized pets by collectors and hobbyists, both within the region and globally. The trade in itself is a serious issue, but may also lead to other ecological catastrophes such as the introduction of invasive species, and the spread of zoonotic diseases.



MARKETS AND TRADE

SECTION 3: A CLOSER LOOK

DEMAND DRIVERS	13
MOST TRADED SPECIES	15
PHYSICAL BIRD MARKETS	16
THE ONLINE MARKETPLACE	16
COUNTRY-SPECIFIC TRADE EXAMPLES	17
CATCH AND TRANSPORT METHODS	18
IMPACT	19



The global wildlife trade presents extremely detrimental impacts for wild populations and overall ecology. It involves approximately one-third of the Earth's bird species, making birds among the most heavily traded taxonomic groups worldwide with 1,409 species classified as threatened by the IUCN Red List, in part due to trade^{22,23}. The wildlife trade in Southeast Asia dates back well over 1,500 years into the Tang Dynasty²⁴, and it is estimated that this region accounts for 25% of the current global wildlife market²⁵. Wild birds are poached across Southeast Asia and trafficked to fulfil a global demand for birds used for various purposes. The trade routes from Southeast Asia are diverse, complex and ever changing, ranging from regional fluxes between neighbouring countries to extensive supply chains that reach the farthest corners of the world including North America, Europe, the Middle East, and East Asia^{24,26}.

DEMAND DRIVERS

There are various consumer motivations for the demand in wild birds, which can generally be categorized into the following:

PET TRADE

Wild birds are highly sought after as pets in many parts of the world. Their significance in the wildlife trade is, in part, due to the lack of prohibitions and/or restrictions on wild animal ownership and possession of certain species. In the United States for example, many States allow the keeping of exotic birds, making parrots and other caged birds the fourth most popular kind of pet¹⁴.

SONGBIRD COMPETITIONS

The region of Southeast Asia has a history in keeping caged-birds as part of long-established cultural and social practices, but the traditional practice of birdsong contests has gained increased attention and popularity in recent decades. A recent study by Mirin and Klinck²⁷ found that bird singing contests are currently hosted in 19 countries over 5 geographic regions, and involve over 36 species of birds. The multi-billion-dollar industry is one that is strongly driven by demand from an emerging middle class in certain major Southeast Asian countries²⁷. With a competitive edge, male birds compete with their songs, plumage, and intricate movements to impress judges²⁷. Birds that regularly win contests gain a prestigious reputation – a champion bird can gain elevated social status, and may garner substantial amounts of prize money for its owner^{22,28}. Over time, this has served as high monetary incentives for young people to be involved in the industry. As a result, many songbird species across the region are experiencing rapid population declines so acute that it has led conservationists to coin the phenomenon the 'Asian Songbird Crisis'^{29,30}. To mitigate the impacts of wild-bird poaching, captive breeding programs have been initiated for several species, including those of protected status. However, the high cost of such birds, as well as the perception that captive-bred birds do not sing as well as wild-caught ones means that wild birds are still considered more preferable to many buyers²².



ORNAMENTAL USE

Some birds such as the Helmeted hornbill (*Rhinoplax vigil*), are highly sought after for their solid casques which are used to create carvings and jewelry³¹. Other birds are hunted for their vibrant feathers.

TRADITIONAL MEDICINE

There are traditional beliefs in some cultures that wild animal products can be used to treat certain ailments or support health. In traditional Chinese medicine for example, the nests of Swiftlet birds (which are entirely made out of their saliva) are considered a delicacy and believed to provide numerous health benefits. The most highly prized nests are harvested from caves in several Southeast Asian countries and sold for US \$2,300/kg to Hong Kong and China to be served in bird's nest soup³².

FOOD

In many parts of Southeast Asia, various bird species are hunted and traded for their meat. Some species are highly sought after delicacies, such as the yellow-breasted bunting (*Emberiza aureola*).

RELIGIOUS AND CULTURAL PRACTICES

Some wild bird species are used in certain religious and cultural practices. For example, birds-of-paradise, whose vibrant feathers are used for ceremonial purposes by certain indigenous communities.

MOST TRADED SPECIES

Numerous bird species are hunted throughout Southeast Asia; some legally and others illegally traded. Some of the commonly targeted species groups include:



SONGBIRDS

Songbirds such as White-rumped shama (*Copsychus malabaricus*), Straw-headed bulbul (*Pycnonotus zeylanicus*), and Hill myna (*Gracula religiosa*) are highly prized for their melodious songs and are popular as pets²⁷.

PARROTS

Several parrot species such as the Blue-naped parrot (*Tanygnathus lucionensis*) and Yellow-crested cockatoo (*Cacatua sulphurea*) are sought after as pets due to their colorful feathers and ability to mimic human speech^{33,34}.



RAPTORS

Raptors such as eagles, hawks, and owls are also targeted for their meat and body parts, which are used in traditional medicines³⁵. Raptors are also in high demand for recreational hunting, falconry, and to be kept as pets.

HORNBILLS

Hornbills are hunted both as pets and for their ivory-like casques and feathers, which are used in traditional ceremonies, as decorations, and jewelry³¹.



PHYSICAL BIRD MARKETS

Traditionally, the trade in wildlife was largely confined to physical trading areas such as city markets, port trading hubs, and storefronts. These outlets sell a range of different domesticated and wild animals, but are often referred to as 'bird markets' and are a common sight in Southeast Asia. Although many of the species sold are legally protected, their presence is pervasive throughout the region. This is due in part to the challenges of enforcing wildlife protection laws, particularly in Southeast Asian countries where such markets have been a fixture of daily life for generations.

THE ONLINE MARKETPLACE

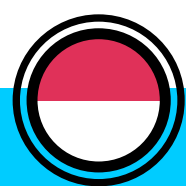
The online trade of wildlife has been on the rise for the past decade, coinciding with the tremendous growth of e-commerce and the internet. The proliferation of social media and mobile applications has further accelerated this trend. The greatest advantage of trade transactions in cyberspace is the anonymity it provides. Additionally, online marketplaces offer a significantly greater advertising reach and global exposure to sellers compared to traditional brick-and-mortar markets. Consequently, transactions are completed more efficiently and expeditiously, making it easier and faster for both buyers and sellers to engage in this trade³⁶.



COUNTRY-SPECIFIC TRADE EXAMPLES

Each Southeast Asian country demonstrates unique human motivations that drive their participation in the wild bird trade. The clandestine, complex and ever evolving nature of the trade makes it very difficult to fully understand the dynamics and routes of the trade. Here we highlight some notable examples of wild bird trade in each country.

INDONESIA



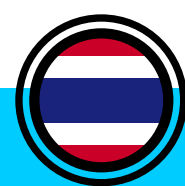
A trend in birdsong contests has contributed to an estimated 66-83 million caged birds on Java alone (one bird for every two of the island's human population), a figure possibly exceeding the number of birds left in the wild on the island²⁹.

SINGAPORE



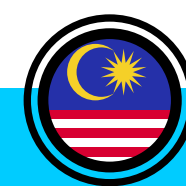
Singapore is a leading transit hub in the global wild bird trade. The country imported and exported over 225,000 and 136,912 birds respectively, between 2005 and 2014, with African grey parrots (*Psittacus erithacus*) topping the list as the most traded bird species³⁸.

THAILAND



Over 546 pieces of hornbill parts and products were found to be advertised across 32 Facebook groups based in Thailand, with posts dated between 2014 and 2019. Concerningly, 83% of these commodities comprised of the Critically Endangered Helmeted hornbill^{31,36}.

MALAYSIA



At least 26,950 trafficked Oriental magpie-robins (*Copsychus saularis*) were intercepted in Malaysia between January 2015 and December 2020, with 66% of them confiscated in 2020 alone. The majority of these birds were destined for neighbouring Indonesia to supply the huge demand for songbirds^{38,39}.

THE PHILIPPINES



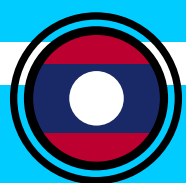
Many birds native to Indonesia are exported to the Philippines, where they are often laundered into legal trade streams through captive breeding facilities and traded onwards both domestically and internationally⁴⁰.

CAMBODIA



Although Cambodia's songbird trade is less documented than other countries in Southeast Asia, 19 orders of birds were discovered to be involved in wildlife trafficking activities in the years between 2001 and 2018, with the largest percentage of confiscated birds being songbirds⁴¹.

LAOS



Laos is part of an international transit system for illegal goods supplying animals from Africa to Asia, mainly supplying China and Vietnam. Helmeted hornbills are increasingly trafficked to China, with Laos serving as a transit and trading point, despite being fully protected in their range states³⁷.

TIMOR-LESTE



Hunting for local consumption is a particular threat to Timor-Leste's birds. For example, intensive hunting by local people for celebrations has devastated populations of the Endangered Timor green pigeon (*Treron psittaceus*)⁴².

VIETNAM



Over 99% of birds surveyed across 52 vendors were species native to Vietnam, with the majority of them lacking any form of regulations governing their trade under Vietnamese legislation. In fact, seven species have been recognized as being directly threatened by trade in the region⁴³.

MYANMAR & BRUNEI



These countries are also involved in the bird trade to a certain extent. More light has been shed on their involvement in exports, cargo transits, imports, or domestic trade of birds as evidence continues to grow. Current data deficiencies highlight the requirement for further investigations in these nations.



CATCH AND TRANSPORT METHODS

Various trapping methods are used to capture wild birds. The main methods used in Southeast Asia are:

GLUE

Sticky gum is applied to branches and bird song is played via speaker or mobile phone to attract the birds. Sometimes a decoy bird is tied nearby as an additional lure. Curious birds approach the scene and land on the gum covered branches, instantly trapped. Only birds deemed valuable in the trade are taken, while unfavourable birds are discarded. However, the removal of birds can lead to damaged wings and loss of feathers, leaving some individuals flightless and unable to survive in the wild.

NETS

A net is spanned across a route where birds are expected to fly, entangling them mid flight. This is the common method used at migration routes where multiple birds are targeted at once.

SNARES/ TRAPS

For larger birds of prey such as raptors, snares are sometimes used with bait.

REMOVAL FROM THE NEST

Certain bird species such as cockatoos are taken directly from their nests, usually at night while they are sleeping. Some species are taken as eggs or hatchlings, and reared.

Once captured, birds are placed in bags, boxes, cages or tubes for transport to market; a journey that may pass through numerous locations, means of transport (i.e. plane, ship, overland) and middle men depending on their final destination.

IMPACT

The removal of large volumes of birds from the wild could have profound impacts on the species' population dynamics that we are yet to fully understand. It may also impair the functionality of the surrounding environment due to reduced ecosystem services provided by birds. In addition, keeping wild birds confined in unkept markets, and in close contact with other animals, can lead to the spread of zoonotic diseases, affecting the health and well-being of both humans and birds.

WELFARE CONCERNS

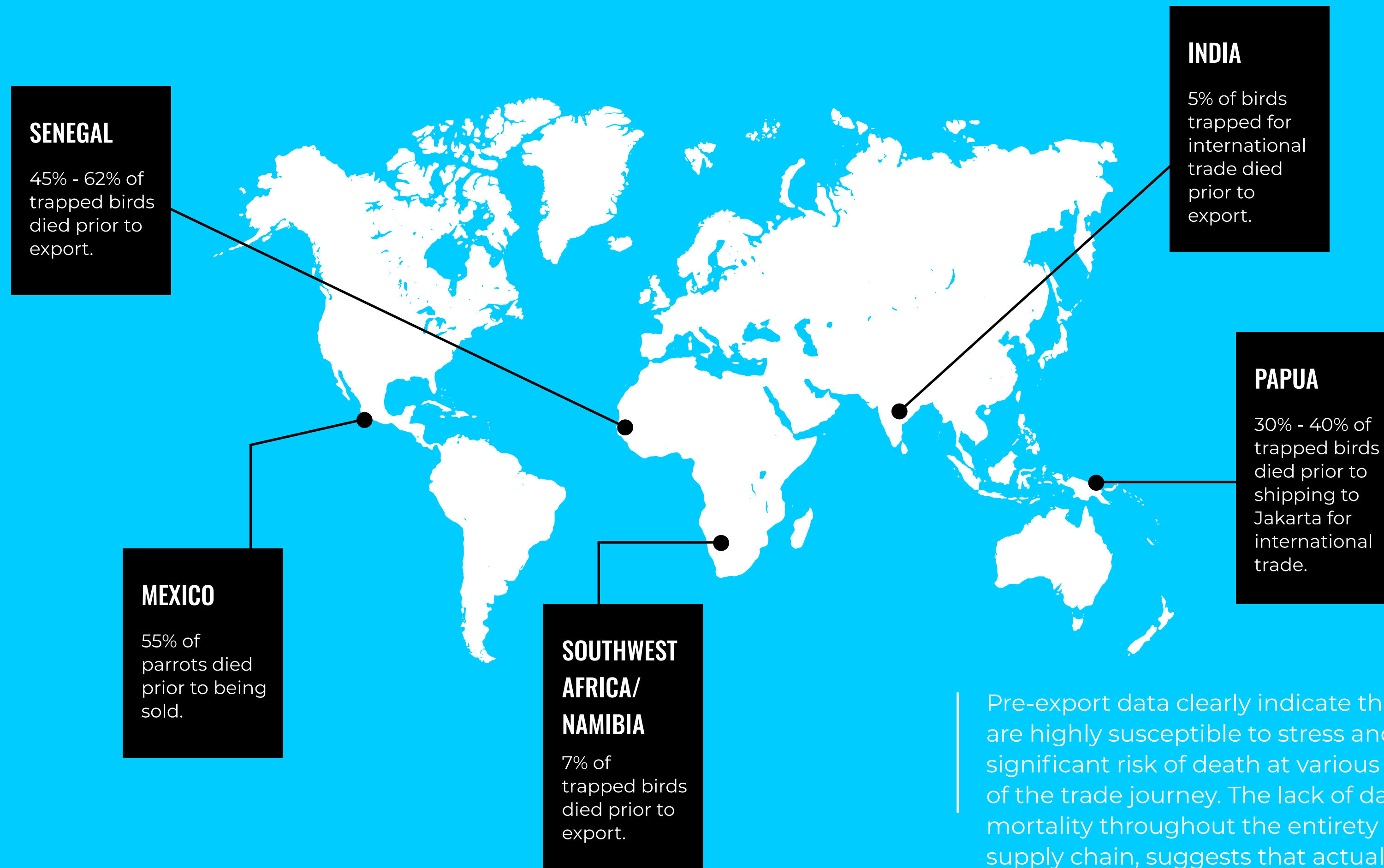
The study of animal welfare is largely absent in the literature about wildlife trade^{44,45}, despite extensive evidence that birds are sentient and capable of experiencing pleasure and pain, and suffer immensely throughout the trade. Welfare concerns occur at all stages of the trade journey, from capture to transport, holding, handling, breeding, market and their sentencing of a lifetime in captivity⁴⁴. As much of the trade is illegal, birds are often smuggled in hidden and confined spaces, sometimes going days without food, water or daylight. Such conditions induce stress for any animal, but birds are particularly sensitive and excessive stress can be fatal for these delicate creatures. Post-capture mortality rate is high with many birds dying in transit from crushing, suffocation, starvation, dehydration, temperature shock, disease, injury, or stress.

For individuals that do survive the trade, a lifetime in captivity, frequently kept in isolation inside cages that do not allow room for flight, can induce further physical and psychological trauma, with many captive birds displaying stress behaviours. Parrots, for example, will pluck out their own feathers due to mental stress.

MORTALITY RATES

Mortality occurs at various stages of trade, from capture, to transport, quarantine, shipping, market storage, and even during rehabilitation or release. It is an aspect often overlooked in the scientific literature due to the challenges in quantifying such data across the supply chain. Most of the existing data is acquired from interceptions at some point during transport, often before departure, providing insights into the high rates of pre-export mortality. Data from intercepted containers of African grey parrots, for example, demonstrated post-capture and pre-export mortality rates as high as 70-90%⁴⁶.

Another study⁴⁷, compiling data mainly from the 1980s-1990s, sheds further light on pre-export mortality estimates for birds in international trade:



Pre-export data clearly indicate that birds are highly susceptible to stress and face a significant risk of death at various stages of the trade journey. The lack of data on mortality throughout the entirety of the supply chain, suggests that actual mortality numbers may be much higher.

A wild bird's journey from capture to market (and release in the cases where illegal trade is intercepted):

CAPTURE

1

Capture methods often cause injury and significant stress. Also, unfavourable birds captured are discarded in the wild often with damaged wings unable to fly and survive.

Mortality is often highest during transport due to adverse conditions (i.e., inadequate food and water, lack of ventilation, extreme temperatures, overcrowded conditions, wounds, disease spread etc.).

2 **TRANSPORT**

MARKET

3

Unfavourable conditions and infectious diseases can also add to stress and mortality during quarantine or storage at transit points or markets with other animals.

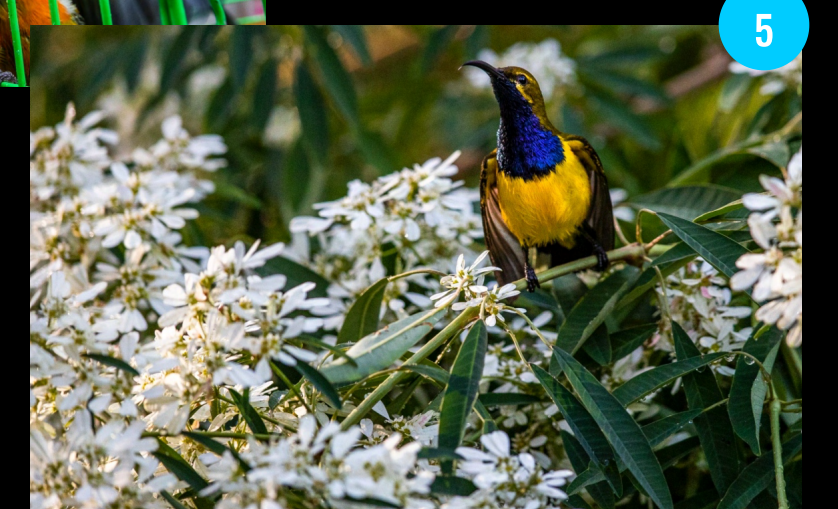
Due to the stress and shock, many birds do not eat or drink and need one-on-one care. Unfortunately, rehabilitation centers frequently demonstrate low survival rates because they are over capacity.

4 **REHABILITATION**

RELEASE

5

In some cases, seized birds will be immediately released due to limited capacity of rehabilitation centers to take them in. Unfortunately however, many birds at this stage are so distressed and potentially injured, that they are unable to fly away and do not survive.



ECOSYSTEM CHANGES

It is well-documented that birds play numerous important roles within natural ecosystems, thus their removal would be detrimental to the ecological systems that depend on healthy bird populations. There is currently a large-scale defaunation occurring in the forests of Southeast Asia, but the full impact of removing wild bird species from their environments remains unclear. However, we do know that certain bird species play irreplaceable roles in ecosystems, for example hornbills are known as ‘farmers of the forest’ as they play a crucial role in dispersing numerous fruit tree species across their range⁴⁸.

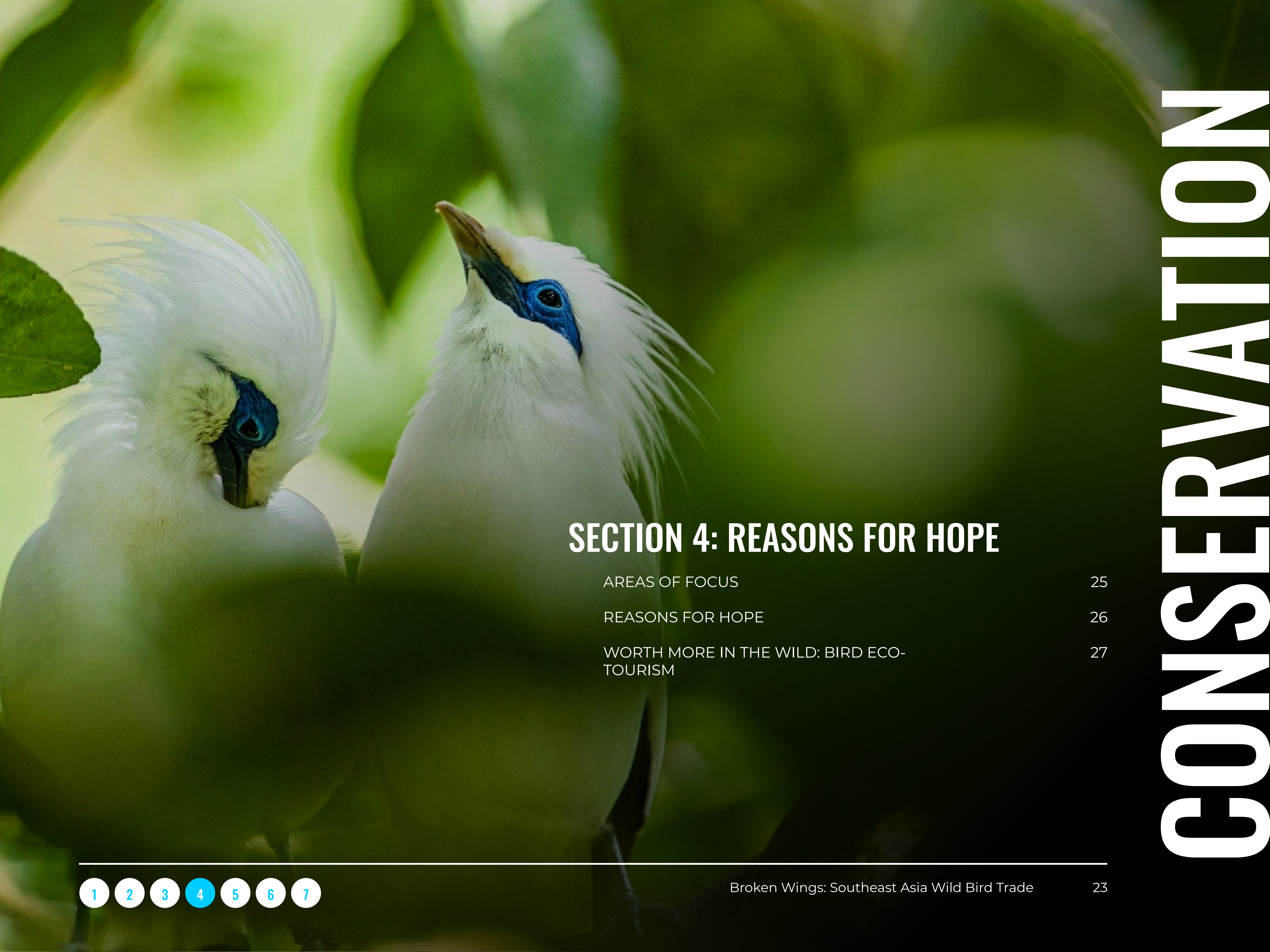
INVASIVE SPECIES

The introduction of non-native bird species imposes pressure on native species by increasing competition for resources, such as food and nesting sites, and may cause genetic implications as a result of cross breeding between native and non-native species⁴⁹. Myna birds (genus *Acridotheres*) are considered some of the most invasive birds in Southeast Asia⁵⁰. The Javan myna (*A. javanicus*), for example, is native to Java and Bali islands in Indonesia but has been introduced into Singapore and West Malaysia via the cage bird trade, where they compete with native birds for food, nesting and roost sites in urban areas^{50,51}.

ZOONOTIC DISEASES

More than 60% of infectious diseases in humans are caused by pathogens shared with wild or domestic animals⁵². By transporting and trading vast numbers of birds every year, often in poor living conditions⁵³, we have created environments that are ideal for the spread of zoonotic diseases⁵⁴. In Southeast Asian markets, wild birds are often kept in close proximity with poultry, increasing their likelihood of transmitting infectious diseases such as avian flu⁵⁵. This can have catastrophic implications for wild populations, domestic livestock as well as humans, as was experienced in the 2014-2015 avian flu outbreak in the United States where 25 million birds were culled to prevent the spread of the disease. This case represents the most costly animal health incident in US history, costing over \$879 million in public expenditures to eradicate the disease from poultry production⁵⁶.





SECTION 4: REASONS FOR HOPE

AREAS OF FOCUS	25
REASONS FOR HOPE	26
WORTH MORE IN THE WILD: BIRD ECO-TOURISM	27

There have been notable conservation efforts over the past decades that have aimed to combat the illegal bird trade in Southeast Asia. But the widely intertwined networks of organized crime syndicates provide an extremely challenging and ever-changing landscape to navigate and control.

Many conservation initiatives have celebrated exciting successes, but as new challenges constantly emerge (such as the penetration of markets into online platforms), conservationists remain in a perpetual struggle against time to prevent the extinction of vulnerable bird species. Furthermore, targeted effort is required to create change at the scale needed to ensure wild bird populations in Southeast Asia are not driven to extinction.





AREAS OF FOCUS

Some regional and national task-forces have been established in Southeast Asia that are working to combat the wild bird trade. Ongoing effort is required along the following themes:

ADVOCACY AND POLICY DEVELOPMENT

Strong national and international legislation is critical in protecting threatened bird species and combating the trade, including addressing the existing legal loopholes. Legal cooperation and collaboration between countries is crucial in order to disrupt transnational bird trafficking.

STRENGTHENING LAW ENFORCEMENT

Capacity building, increasing penalties for wildlife crimes, supporting prosecutions, and effective transboundary collaboration is required to better intercept and stop illegal transactions.

MONITORING AND RESEARCH

Continued monitoring and research is needed to better understand the scope and impact of the illegal bird trade in Southeast Asia. This includes tracking trade routes, monitoring trade platforms, identifying key species, and assessing the impact of trade on wild bird populations.

COMMUNITY OUTREACH AND EDUCATION

Local awareness on the importance of wild birds and the devastating impacts of their illegal trade is an ongoing need. Additional effort is required in developing sustainable alternative livelihoods for people involved in the trade, as well as targeted research to better understand human motivations driving demand and how to change this behaviour.

RESCUE AND REHABILITATION

Birds that have been confiscated from the illegal trade require specialised and species specific care and rehabilitation. Where possible birds will be released back into the wild, but in cases where this is not possible, sanctuaries are required to provide long-term care.

REASONS FOR HOPE

There are numerous examples across Southeast Asia of inspiring conservation initiatives that are making strides to protect and recover species and habitats; here we highlight some key bird conservation projects that inspire hope.

THE BALI MYNA (LEUCOPSAR ROTHSCILDII)

Community-based and livelihood-oriented conservation approaches has helped foster local pride for this Critically Endangered songbird on the island of Bali, Indonesia, contributing to the growing number of individuals released into the wild through a successful breeding and repopulation program^{57,58}.

THE PHILIPPINE COCKATOO (CACATUA HAEMATUROPYGIA)

A unique 'wildlife warden' scheme employing ex-poachers as protectors of the Critically Endangered cockatoo, combined with the establishment of several habitat reserves, has helped the remarkable recovery of this endemic species, now amounting to over 1000 individuals in the wild⁵⁹.

TONLE SAP LAKE, CAMBODIA

The designation of conservation zones and integration of former poachers as bird guards within Southeast Asia's largest freshwater lake, enabled the rebounding of seven of the region's largest and most threatened waterbird populations⁶⁰. However, infrastructure and climate change continue to pose threats.

WEST KALIMANTAN SONGBIRD TRADE DECLINE

A holistic approach combining community-led conservation initiatives with ongoing data collection and law enforcement support, has produced important milestones in West Kalimantan, including reduced poaching, formal prosecution of songbird trafficking cases, and the closure of numerous bird markets⁶¹.





WORTH MORE IN THE WILD: BIRD ECO-TOURISM

Economics play a key role in driving the wild bird trade, but it also plays a key role in providing opportunities to combat it, in particular through wildlife eco-tourism. Global wildlife tourism is worth 5.2 times more than the illegal wildlife trade, annually generating over \$120 billion versus \$23 billion in revenue respectively. Asia-Pacific forms the largest regional wildlife tourism market worth \$53 billion in direct GDP and providing 4.5 million jobs⁶².

Birdwatching is one of the fastest growing sectors in wildlife tourism worldwide with an estimated three million international trips being taken every year for the purpose of watching birds in their natural habitat. This type of tourism brings with it vast economic benefits.

With Southeast Asia's rich diversity of bird species, including many endemic to the region and the growing demand for nature-based tourism, the potential for growth in the birdwatching tourism market is big.

The region is already showing promising signs of this growth with numbers of birdwatching tourists increasing yearly in Sarawak State, Malaysia, and events such as the Fraser's Hill International Bird Race, Kuala Tahan Bird Count, and the Borneo Bird Festival drawing bird enthusiasts from across the region⁶⁹.

Those who partake in the bird trade (in particular bird catchers and bird hobbyists) have a wealth of knowledge and appreciation for birds, which could be diverted away from the trade and towards birdwatching tourism, potentially generating more lucrative and sustainable income streams within this industry.



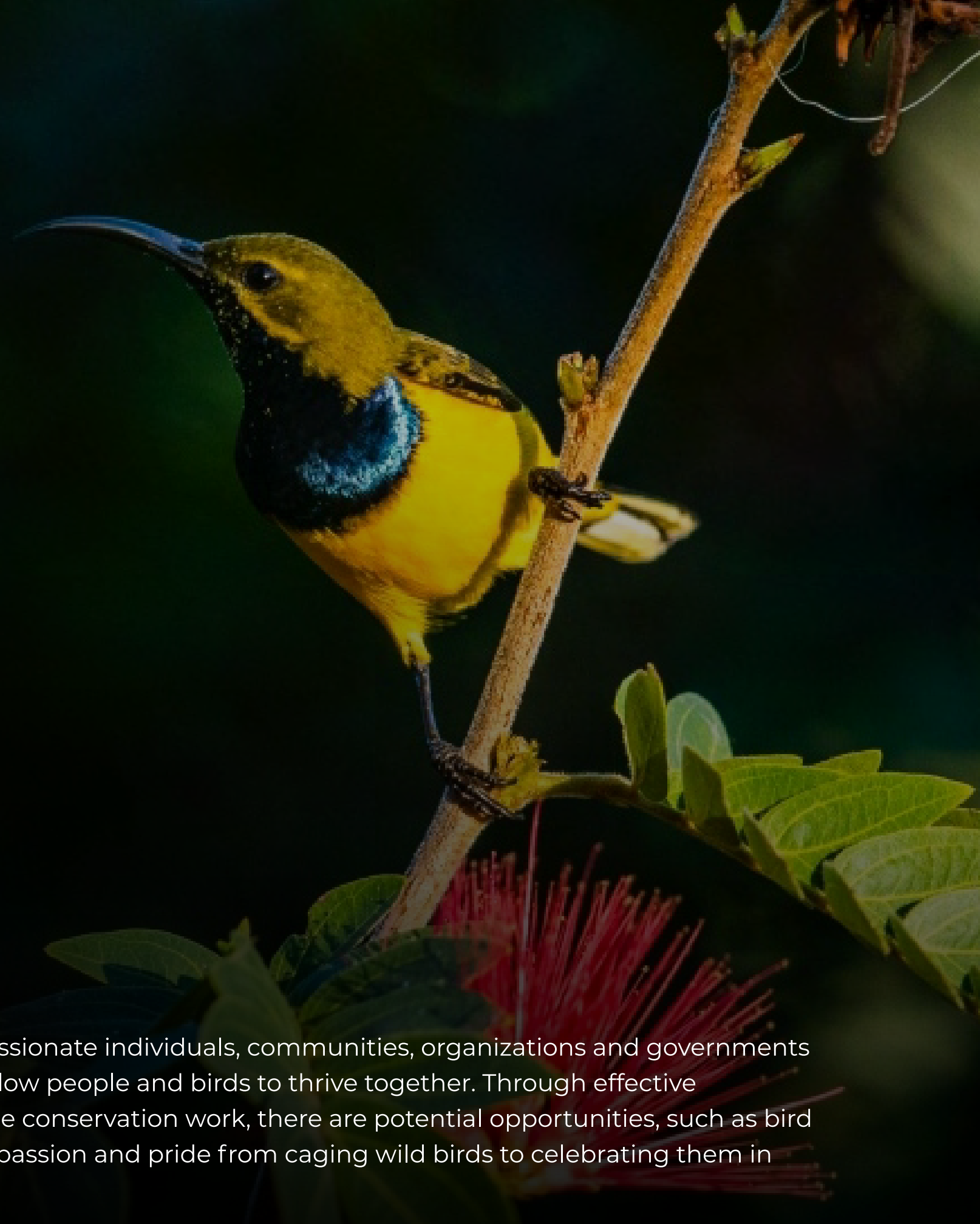
Everyday, birds are vanishing from the wild, leaving behind an unsettling silence. Their disappearance is quickly leading ecosystems and humankind towards one of their greatest losses. Birds represent one third of the global wildlife trade, making them one of the most commonly traded groups of taxa in the world. Although large gaps still remain regarding our knowledge of Southeast Asia's bird populations and the impact of the bird trade, the information collated in this report reveals a clear picture that wild birds are in trouble.

Further cause for concern is the fact that the general public across Southeast Asia and beyond remain largely unaware of the plight of wild birds and what this means, not only for Earth's ecosystems, but also for humanity. The silencing of our natural habitats through the removal of wild birds should speak louder than words that, we too, are in trouble. It is proven that birds are critical for the healthy functioning of the very ecosystems that we rely on for our survival. This emphasises the urgency and importance for further education and outreach, ultimately creating a public movement to drive action for protecting Southeast Asia's unique and important bird life. The love that people have for Southeast Asian birds is admirable, but without a deeper understanding of the harm caused by their removal from nature, the devotion of keeping wild birds is only driving the demise of their wild populations.

Nevertheless, there is hope for the future of Southeast Asia's birds, as regional conservation efforts have seen victories with promising recovery shown by native bird populations and improvements of critical habitats.

We are also witnessing a growing number of passionate individuals, communities, organizations and governments dedicated to finding solutions that ultimately allow people and birds to thrive together. Through effective awareness campaigns and collaborative frontline conservation work, there are potential opportunities, such as bird eco-tourism, that would divert Southeast Asia's passion and pride from caging wild birds to celebrating them in the wild.

Note: This report focuses primarily on peer-reviewed research publications in the English language, written by university academics, NGOs, and other research institutions. Research available on the bird trade in Southeast Asia is generally characterised by region-specific studies. Further, extensive studies are still required to provide accurate representation on the current state of wild bird populations, and the significance of impact imposed by ongoing bird trades.





HOW YOU CAN GET INVOLVED

Join the flock of passionate bird lovers uniting to save our wild birds from disappearing.



DONATE

Make a donation to conservation groups working on the frontlines to protect wild birds. Visit www.thriveconservation.org/brokenwings to donate and learn more about Thrive Conservation's work in Indonesia.



EDUCATE

Educate yourself and others by sharing the information from this report and other media related to the wild bird trade.



CONSCIOUS CONSUMERISM

Don't purchase wild caught birds or their products.



THRIVE
CONSERVATION

www.thriveconservation.org
[@thriveconservation](https://twitter.com/thriveconservation)

#brokenwings
#stopcagingwildbirds
#protectwildbirds

REFERENCES

1. The IUCN Red List of Threatened Species [Internet]. IUCN Red List of Threatened Species. IUCN; 2023 [cited 2023Apr19]. Available from: <https://www.iucnredlist.org/>
2. State of the World's Birds 2022: Insights and solutions for the biodiversity crisis. BirdLife International; 2022.
3. Fuller RA, Irvine KN, Devine-Wright P, Warren PH, Gaston KJ. Psychological benefits of greenspace increase with biodiversity. *Biology letters*. 2007 Aug 22;3(4):390-4.
4. Curtin S. Wildlife tourism: The intangible, psychological benefits of human-wildlife encounters. *Current issues in tourism*. 2009 Nov 1;12(5-6):451-74.
5. Cox DT, Shanahan DF, Hudson HL, Plummer KE, Siriwardena GM, Fuller RA, Anderson K, Hancock S, Gaston KJ. Doses of neighborhood nature: the benefits for mental health of living with nature. *BioScience*. 2017 Feb 1;67(2):147-55.
6. Uebel K, Marselle M, Dean AJ, Rhodes JR, Bonn A. Urban green space soundscapes and their perceived restorativeness. *People and Nature*. 2021 Jun;3(3):756-69.
7. Gregory RD, Noble D, Field R, Marchant J, Raven M, Gibbons DW. Using birds as indicators of biodiversity. *Ornis hungarica*. 2003;12(13):11-24.
8. Simamora TI, Purbowo SD, Laumonier Y. Looking for indicator bird species in the context of forest fragmentation and isolation in West Kalimantan, Indonesia. *Global Ecology and Conservation*. 2021 Jun 1;27:e01610.
9. Lees AC, Haskell L, Allinson T, Bezeng SB, Burfield IJ, Renjifo LM, Rosenberg KV, Viswanathan A, Butchart SH. State of the World's Birds. *Annual Review of Environment and Resources*. 2022 Oct 17;47:231-60.
10. Koh LP, Kettle CJ, Sheil D, Lee TM, Giam X, Gibson LG, Clement GR. Biodiversity state and trends in Southeast Asia. *Encyclopedia of biodiversity* (2nd ed.). 2013.
11. Baker N. Birds of Southeast Asia [Internet]. *Ecology Asia*. [cited 2023Apr19]. Available from: <https://www.ecologyasia.com/verts/birds.htm>
12. Lepage D. Southeast Asia Bird Checklist [Internet]. Avibase. 2023 [cited 2023Apr19]. Available from: <https://avibase.bsc-eoc.org/checklist.jsp?region=SEA&list=howardmoore>
13. Donald PF, Fishpool LD, Ajagbe A, Bennun LA, Bunting G, Burfield IJ, Butchart SH, Capellan S, Crosby MJ, Dias MP, Diaz D. Important Bird and Biodiversity Areas (IBAs): the development and characteristics of a global inventory of key sites for biodiversity. *Bird Conservation International*. 2019 Jun;29(2):177-98.
14. Why apply criteria [Internet]. Birdlife Data Zone. BirdLife International; [cited 2023Apr19]. Available from: <http://datazone.birdlife.org/site/ibacriteria>
15. Chan S, Crosby MJ, Islam MZ, Tordoff AW. Important Bird Areas in Asia: Key Sites for Conservation. BirdLife International; 2004.
16. Sodhi NS, Koh LP, Brook BW, Ng PK. Southeast Asian biodiversity: an impending disaster. *Trends in ecology & evolution*. 2004 Dec 1;19(12):654-60.
17. Sodhi NS, Posa MR, Lee TM, Bickford D, Koh LP, Brook BW. The state and conservation of Southeast Asian biodiversity. *Biodiversity and Conservation*. 2010 Feb;19:317-28.
18. Symes WS, Edwards DP, Miettinen J, Rheindt FE, Carrasco LR. Combined impacts of deforestation and wildlife trade on tropical biodiversity are severely underestimated. *Nature communications*. 2018 Oct 3;9(1):4052.
19. Sheard C, Neate-Clegg MH, Alioravainen N, Jones SE, Vincent C, MacGregor HE, Bregman TP, Claramunt S, Tobias JA. Ecological drivers of global gradients in avian dispersal inferred from wing morphology. *Nature communications*. 2020 May 18;11(1):2463.
20. Freeman BG, Scholer MN, Ruiz-Gutierrez V, Fitzpatrick JW. Climate change causes upslope shifts and mountaintop extirpations in a tropical bird community. *Proceedings of the National Academy of Sciences*. 2018 Nov 20;115(47):11982-7.
21. Peh KS. Potential effects of climate change on elevational distributions of tropical birds in Southeast Asia. *The Condor*. 2007 May 1;109(2):437-41.

22. Burivalova Z, Lee TM, Hua F, Lee JS, Prawiradilaga DM, Wilcove DS. Understanding consumer preferences and demography in order to reduce the domestic trade in wild-caught birds. *Biological Conservation*. 2017 May 1;209:423-31.
23. Harris JB, Tingley MW, Hua F, Yong DL, Adeney JM, Lee TM, Marthy W, Prawiradilaga DM, Sekercioglu CH, Winarni N, Wilcove DS. Measuring the impact of the pet trade on Indonesian birds. *Conservation Biology*. 2017 Apr;31(2):394-405.
24. Yong DL. The Ancient Wildlife Trade in Southeast Asia - From Zhao Rugua to Tome Pires. *Nature Watch*. 2019 Feb.
25. Lin J. Tackling Southeast Asia's illegal wildlife trade. *Sybil*. 2005;9:191.
26. Bush ER, Baker SE, Macdonald DW. Global trade in exotic pets 2006–2012. *Conservation Biology*. 2014 Jun;28(3):663-76.
27. Mirin BH, Klinck H. Bird singing contests: Looking back on thirty years of research on a global conservation concern. *Global Ecology and Conservation*. 2021 Oct 1;30:e01812.
28. Lees AC, Yuda P. The Asian songbird crisis. *Current Biology*. 2022 Oct 24;32(20):R1063-4.
29. Marshall H, Collar NJ, Lees AC, Moss A, Yuda P, Marsden SJ. Spatio-temporal dynamics of consumer demand driving the Asian Songbird Crisis. *Biological Conservation*. 2020 Jan 1;241:108237.
30. Nijman V, Nekaris KA, Imron MA. Asian songbird crisis also affects unprotected species. *Oryx*. 2019 Jan;53(1):13-.
31. Phassaraudomsak M, Krishnasamy K, Chng SCL. Trading faces: Online trade of helmeted and other hornbill species on Facebook in Thailand. *TRAFFIC*; 2019.
32. Babji AS, Nurfatin MH, Ety Syarmila IK, Masitah M. Secrets of edible bird nest. 2015.
33. Setiyani AD, Ahmadi MA. An overview of illegal parrot trade in Maluku and North Maluku Provinces. *Forest and Society*. 2020 Apr 26;4(1):48-60.
34. Romero-Vidal P, Carrete M, Hiraldo F, Blanco G, Tella JL. Confounding Rules Can Hinder Conservation: Disparities in Law Regulation on Domestic and International Parrot Trade within and among Neotropical Countries. *Animals*. 2022 May 12;12(10):1244.
35. Paridi A, Noske RA. The illegal trade of Indonesian raptors through social media. *Kukila*. 2017 Jun 13;20:1-1.
36. Siriwat P, Nijman V. Wildlife trade shifts from brick-and-mortar markets to virtual marketplaces: A case study of birds of prey trade in Thailand. *Journal of Asia-Pacific Biodiversity*. 2020 Sep 1;13(3):454-61.
37. Singapore's wild bird trade raises troubling questions about African grey parrots [Internet]. 2016. *Wildlife Trade News from TRAFFIC*. [cited 2023Apr19]. Available from: <https://www.traffic.org/news/singapores-wild-bird-trade-raises-troubling-questions-about-african-grey-parrots/>
38. Chng SC, Saaban S, Weichit A, Krishnasamy K. Smuggled for its song–The Trade in Malaysia's Oriental Magpie-robins. *TRAFFIC*. Southeast Asia Regional Office, Petaling Jaya, Selangor, Malaysia. 2021.
39. Cowan C. Malaysian hornbill bust reveals live trafficking trend in Southeast Asia [Internet]. *Mongabay Environmental News*. 2021 [cited 2023Apr19]. Available from: <https://news.mongabay.com/2021/09/malaysian-hornbill-bust-reveals-live-trafficking-trend-in-southeast-asia/>
40. Sy, E.Y., Raymundo, J.J.G. and Chng, S.C.L. (2022). Farmed or poached? The trade of live Indonesian bird species in the Philippines. *TRAFFIC*, Southeast Asia Regional Office, Petaling Jaya, Selangor, Malaysia.
41. Heinrich S, Ross JV, Gray TN, Delean S, Marx N, Cassey P. Plight of the commons: 17 years of wildlife trafficking in Cambodia. *Biological Conservation*. 2020 Jan 1;241:108379.
42. Trainor CR, Santana F, Pinto P, Xavier AF, Safford R, Grimmett R. Birds, birding and conservation in Timor-Leste. *Birding Asia*. 2008;9(2008):16-45.
43. Eaton JA, Nguyen MD, Willemsen M, Lee J, Chng SC. Caged in the city: An inventory of birds for sale in Ha Noi and Ho Chi Minh City, Viet Nam. *TRAFFIC Southeast Asia Regional Office, Petaling Jaya, Malaysia*. 2017.
44. Wyatt T, Maher J, Allen D, Clarke N, Rook D. The welfare of wildlife: an interdisciplinary analysis of harm in the legal and illegal wildlife trades and possible ways forward. *Crime, Law and Social Change*. 2022 Jan;77(1):69-89.
45. Baker SE, Cain R, Van Kesteren F, Zommers ZA, D'cruze N, Macdonald DW. Rough trade: animal welfare in the global wildlife trade. *BioScience*. 2013 Dec 1;63(12):928-38.
46. Wild at heart : The cruelty of the exotic pet trade. *World Animal Protection*; 2019.

47. Thomsen JB, Edwards SR, Mulliken TA. Perceptions, conservation and management of wild birds in trade. 1992.
48. Naish D. The ecology and conservation of Asian hornbills: farmers of the forest. 2015.
49. Yap CA, Sodhi NS. Southeast Asian invasive birds: ecology, impact and management. *Ornithological Science*. 2004;3(1):57-67.
50. Nijman V, Ardiansyah A, Siritwat P, Birot H, Winnasis S, Damianou E, Imron MA, Langgeng A, Lewis B, Nekaris KA. Wildlife trade and the establishment of invasive alien species in Indonesia: management, policy, and regulation of the commercial sale of songbirds. *Biological Invasions*. 2022 Sep;24(9):2905-16.
51. Arazmi FN, Ismail NA, Daud UN, Abidin KZ, Nor SM, Mansor MS. Spread of the invasive Javan myna along an urban–suburban gradient in Peninsular Malaysia. *Urban Ecosystems*. 2022 Jun;25(3):1007-14.
52. Taylor LH, Latham SM, Woolhouse ME. Risk factors for human disease emergence. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*. 2001 Jul 29;356(1411):983-9.
53. Naysmith S. Observations from a live bird market in Indonesia following a contained outbreak of avian influenza A (H5N1). *EcoHealth*. 2014 Mar;11:50-2.
54. Karesh WB, Cook RA, Bennett EL, Newcomb J. Wildlife trade and global disease emergence. *Emerging infectious diseases*. 2005 Jul;11(7):1000.
55. Edmunds K, Robertson SI, Few R, Mahood S, Bui PL, Hunter PR, Bell DJ. Investigating Vietnam's ornamental bird trade: implications for transmission of zoonoses. *EcoHealth*. 2011 Mar;8:63-75.
56. Seeger RM, Hagerman AD, Johnson KK, Pendell DL, Marsh TL. When poultry take a sick leave: Response costs for the 2014–2015 highly pathogenic avian influenza epidemic in the USA. *Food Policy*. 2021 Jul 1;102:102068.
57. Pramatana F, Prasetyo LB, Rushayati SB. The Habitat Susceptibility of Bali Starling (*Leucopsar rothschildi* Stresemann> 1912) Based on Forest Fire Vulnerability Mapping in West Bali National Park. *InIOP Conference Series: Earth and Environmental Science* 2017 Oct 1 (Vol. 91, No. 1, p. 012003). IOP Publishing.
58. Jepson PR. Saving a species threatened by trade: a network study of Bali starling *Leucopsar rothschildi* conservation. *Oryx*. 2016 Jul;50(3):480-8.
59. Waugh D. Loro Parque Fundación backs Katala in more conservation successes for the Philippine Cockatoo. *AFA Watchbird*. 2017;44(2):42-7.
60. Van Zalinge R, Evans T, Sun V. A review of the status and distribution of large waterbirds in the Tonle Sap Biosphere Reserve. *Wildlife Conservation Society: Cambodia Program*. 2008 Oct.
61. In one Indonesian province, Songbird Trade is on the decline [Internet]. *Asian Species Action Partnership*. 2020 [cited 2023Apr19]. Available from: <https://speciesonthebrink.org/news/in-one-indonesian-province-songbird-trade-is-on-the-decline/>
62. World Travel & Tourism Council. The Economic Impact of Global Wildlife Tourism: Travel & Tourism as a Economic Tool for the Protection of Wildlife. *World Travel & Tourism Council (WTTC)*; 2019.
63. Sekercioglu CH. Impacts of birdwatching on human and avian communities. *Environmental conservation*. 2002 Sep;29(3):282-9.
64. Birding in the US Report: A Demographic and Economic Analysis. Addendum to the 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation; Report 2016-2. U.S. Department of the Interior; U.S. Fish and Wildlife Service; 2019.
65. Schwoerer T, Dawson NG. Small sight—Big might: Economic impact of bird tourism shows opportunities for rural communities and biodiversity conservation. *Plos one*. 2022 Jul 6;17(7):e0268594.
66. Biggs D, Turpie J, Fabricius C, Spenceley A. The value of avitourism for conservation and job creation—An analysis from South Africa. *Conservation and Society*. 2011 Jan 1;9(1):80-90.
67. Hall CM, Boyd S. Nature-based tourism in peripheral areas: Introduction. *Nature-based tourism in peripheral areas: Development or disaster*. 2005:3-17.
68. Hughes R. IBA Local Conservation Groups and Caretakers - Learning from Early Experience and Future Direction. *BirdLife International*; 2005.
69. Fency S. Bird-watching and wildlife tours: alternative tourism escalates niche tourism markets: Aptness of Sarawak state, Malaysia. *Journal of Tourism*. 2017;18(2):31-47.