

CONSERVING THE  
**East Asian-Australasian Flyway**

Many bird species travel vast distances to avoid the harsh conditions of winter in their breeding grounds, as well as to find more stable food supplies. On their annual migrations, they move along a number of regular routes. **Yong Ding Li** looks at threats and efforts to preserve the largest of the world's eight major flyways: the East Asian-Australasian Flyway, of which Singapore is a part.

PHOTOS **Choy Wai Mun, Esther Ong, Yong Ding Li** and **Raphael Jordan**



Bar-tailed Godwit (*Limosa lapponica*) and Great Knot (*Calidris tenuirostris*) on the Yalu River estuary, Liaoning, one of the most important area of wetlands in the region. Studies using satellite tags have shown that some Bar-tailed Godwit individuals made a non-stop flight from their breeding grounds in the high arctic tundra of Alaska to where they winter on the shores of New Zealand, covering a staggering 11,000 km one way. Photo: Yong Ding Li

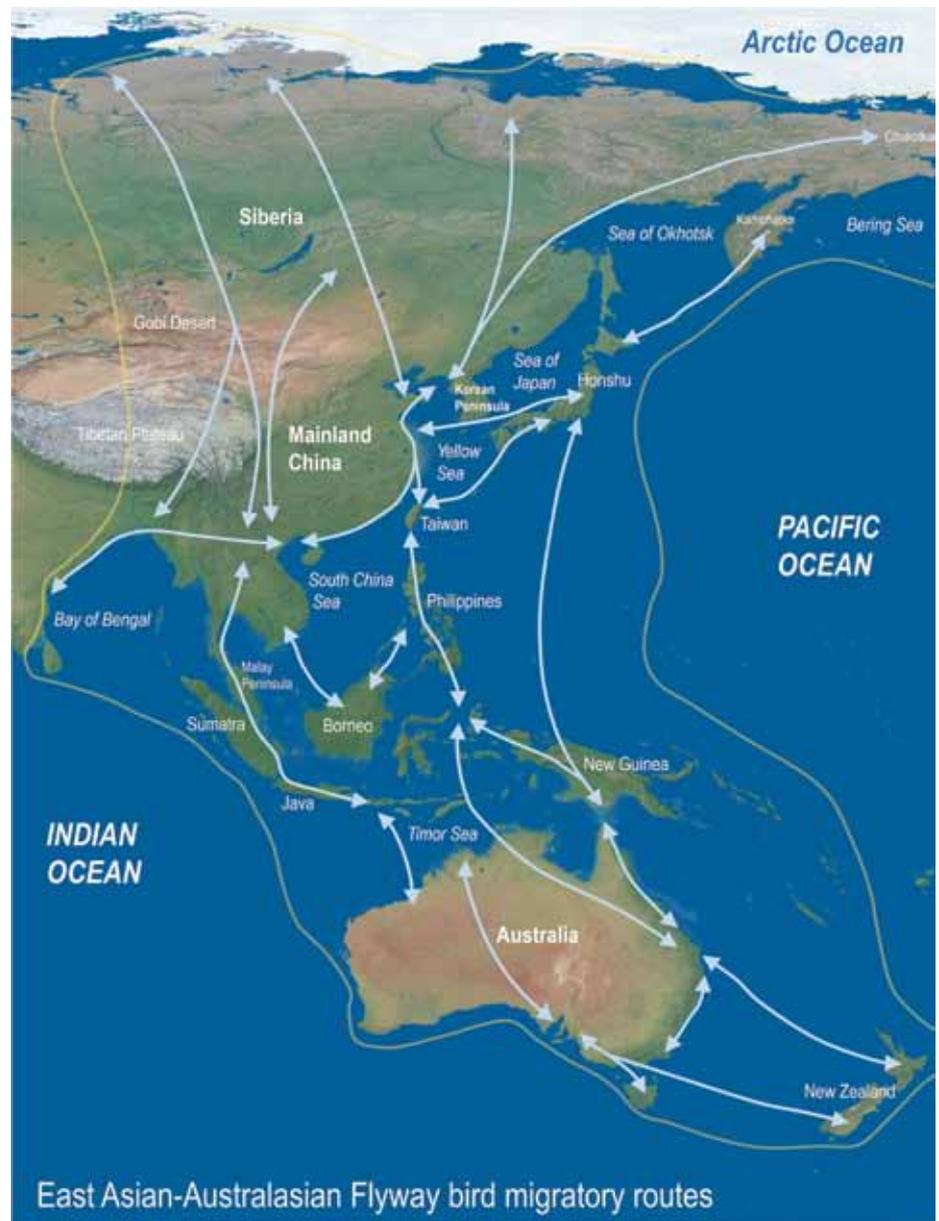
Since time immemorial, migratory birds have evolved to brave mountains, oceans, deserts and storms on their journeys, travelling thousands of kilometres from their breeding grounds to warmer parts of the world to spend their winter.

The corridors of migratory routes taken by bird species are generalised by ornithologists as migratory flyways. The largest of the world's eight major flyways is the East Asian-Australasian Flyway (EAAF), which includes Singapore.

This vast flyway links Alaska, north-western Canada, eastern Russia and much of eastern Asia to the Indonesian archipelago, Australia and New Zealand. The EAAF is also recognised by conservationists to be the most species-rich. A few billion individuals of nearly 600 bird species regularly travel along this flyway on their annual migrations between their breeding and non-breeding areas. They range from familiar birds such as sandpipers, robins, warblers, flycatchers and eagles to less-known species such as the highly threatened Swinhoe's Rail (*Coturnicops exquisitus*).

The majority of migratory birds in the EAAF are boreal, temperate-tropical or intra-tropical migrants that move southward during the boreal (northern) winter. Many of these species breed in the tundra and coniferous forest of eastern Russia, or the mixed deciduous forests of China, Korea and Japan. But about 40 species are austral migrants: these species breed on continental Australia and New Zealand, and migrate northwards to Southeast Asia and the northern reaches of Australia during the austral winter.

Some of the migratory birds using the EAAF are indeed the world champions of animal migration. One of the best known migrants here is the Bar-tailed Godwit (*Limosa lapponica*). Studies using satellite tags have shown that some Bar-tailed Godwit individuals made a non-stop flight from their breeding grounds in the high arctic tundra of Alaska to where they winter on the shores of New Zealand, covering a staggering 11,000 km one way. On their



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return flights in spring, these birds took another six to eight days to cover the 10,000 km journey from New Zealand to the Yellow Sea coast of China to stage.

Not as well studied are the passerine migrants, although the recent work of scientists in Russia, Japan and Korea are beginning to shed light on many of them.

In 2018, a team of researchers led by Wieland Heim, working in eastern Russia tracked the migration of the Siberian Rubythroat (*Luscinia calliope*), a small passerine weighing no more than 25g, for the first time in Asia. They found that these little birds could cover up to 10,000km in a round-trip journey, flying mostly at night,



The shy Lanceolated Warbler (*Locustella lanceolata*) is among nearly 50 species of passerine migrants that visit Singapore. Photo: Raphael Jordan

and crossing both desolate deserts and mountains (of the Tibetan plateaux).

### Conserving the Flyway

The numbers of birds travelling along the EAAF have been declining year on year for the past few decades. Some of the causes of decline have to do with specific factors in breeding grounds, but other causes relate to what is happening along the Flyway.

The importance of conserving habitat for birds along the Flyway, of whatever sort of habitat, has been recognised for as long as the awareness of decline, and thankfully many sites are now better conserved. A number of key wetland sites for migratory birds are recognised by governments as Flyway Network Sites under the East Asian-Australasian Flyway Partnership (EAAFP) while many more have become Ramsar Sites, under the Ramsar Convention on Wetlands. Many of these sites have also been gazetted as protected areas at the national level, becoming national parks and strict nature reserves.

### Loss and degradation of wetlands

However, there are still many threats to wetlands. The East Asian-Australasian Flyway covers some of the most densely populated parts of the planet. It is inhabited by well over 2 billion people,

many who live in densely populated cities in close proximity to globally important areas of wetlands.

One such area is the Yellow Sea (see map), which is fringed by large areas of wetlands on the coasts of eastern China and the Koreas. The loss and degradation of coastal wetlands here due to rapid developmental expansion has been flagged by conservationists and scientists to be the single most important cause of the rapid decline witnessed for many shorebird species in Asia, with some species — such as the now rare Spoon-billed Sandpiper (*Calidris pygmaea*) and the Nordmann's Greenshank (*Tringa guttifer*) — severely affected.

In the past few decades, over half of

the intertidal wetlands, such as mudflats and salt marshes in the Yellow Sea region, has been reclaimed and converted to urban, industrial and agricultural land. The remaining areas are affected by numerous ongoing and planned land conversion projects (although somewhat less so in the past few years).

In Southeast Asia, coastal wetlands are increasingly reclaimed for development or converted into aquaculture ponds. The loss of coastal wetlands is especially acute in the Mekong Delta region of Vietnam and the Inner Gulf of Thailand. What were formerly vast areas of natural wetlands are now vast areas of fish and prawn ponds, and rice paddies.



Among shorebirds most severely affected by the loss and degradation of coastal wetlands due to human activity in Asia is Nordmann's Greenshank (*Tringa guttifer*), seen here at Pak Thale, Thailand. Photo: Bird Conservation Society of Thailand

Less is understood about how deforestation affects migratory songbirds, although evidence from research in Japan reveals that migratory songbirds that use forests in their wintering grounds are declining more than others.

Because many of the migratory shorebirds would travel along a chain of ‘connected’ wetland sites as they migrate to their wintering grounds, the loss of even a few areas of wetland habitats on their migratory routes could have major repercussions on their populations as a whole.

### The threat of hunting

Hunting along the Flyway is a major threat to birds. In many parts of Asia, local people have opportunistically harvested large congregations of migratory birds for food.



Waterbirds hunted for food in Southeast Asia. Photo: Yong Ding Li

One of the best known case studies of a migratory bird being affected by large-scale hunting in Asia is the Yellow-breasted Bunting (*Emberiza aureola*).

Recent reviews show that populations of this migratory species have declined by up to 90% globally, and its breeding range has contracted eastward from Scandinavia. The global decline of the Yellow-breasted Bunting is thought to be driven by demand for its consumption as a delicacy in southern China, which has resulted in extensive hunting pressure across much of China.

In many parts of Southeast Asia, local people continue to put up many metres of mist nets (often illegally) on mudflats or along the edge of fishponds and salt pans to capture migratory shorebirds. The birds harvested this way are either

## BirdLife’s work on the Flyway

The conservation of coastal wetlands in the Yellow Sea and in Southeast Asia have been a conservation priority for BirdLife International and its national partners, who work closely with EAAFP and other stakeholders. Some key projects are in:

■ **CHINA.** At Yancheng National Nature Reserve, two significant areas of wetlands, including the Tiaozini flats, were finally inscribed as UNESCO World Heritage Sites, thanks to the advocacy of many stakeholders. They include universities and UK partner, the Royal Society for the Protection of Birds (RSPB). Such inscription boosts the existing layers of protection.

■ **MALAYSIA.** At the coastal mudflats of mainland Penang and at Bako-Buntal Bay in Sarawak, the partner Malaysian Nature Society (MNS) has worked with the government, its volunteer base, and researchers to regularly monitor waterbird

numbers. MNS also annually organises Raptor Watch in Tanjung Tuan (Melaka), which draws large numbers of participants (including many school children) and has raised the profiling and awareness of raptor migration in Malaysia.

■ **MYANMAR.** In the Gulf of Mottama, south-east of Yangon, Myanmar partner the Biodiversity and Nature Conservation Association (BANCA), has worked with the government to successfully secure an area of more than 40,000ha of coastal mudflats in 2017 as a Wetland of International Importance under the Ramsar Convention. This Ramsar site has

been expanded to cover over 160,000ha in 2020. Work with the villages around the Gulf has also established local conservation work groups to engage local communities to participate in conservation activities, including patrolling important areas and harvesting natural resources sustainably.

■ **SOUTH KOREA.** At Geum estuary, one of the most important sites for migratory shorebirds on the Korean Peninsula, BirdLife Australia, the Seocheon county government and BirdLife International, work to strengthen monitoring, raise awareness, and establish artificial trial roosts for shorebirds.

■ **THAILAND.** In the salt pans of Khok Kham and Pak Thale, partner Bird Conservation Society of Thailand (BCST) has worked for many years to engage local people and monitor shorebird populations. It recently established a brand new nature reserve at the latter site. BCST also regularly organises bird festivals, educational and awareness activities to promote the bird conservation.

■ **SINGAPORE.** The work of partner Nature Society (Singapore) was instrumental in driving work to conserve the mudflats and mangroves of both Sungei Buloh and Mandai. This was achieved through years

of awareness-raising, advocacy and outreach to the government. Further advocacy is needed to secure the protection of coastal wetlands such as Khatib Bongsu as well as to protect sufficient forested areas for migratory passerines. Attempts to conserve wooded slopes at Bidadari, frequented by passerines and destined for housing development, had limited success. Research is underway to address the problem of night-migrating passerines, such as Blue-winged Pittas (*Pitta moluccensis*) and various flycatchers and kingfishers which collide, often fatally, with lit buildings at night.



From left: The author (third from right) at the International Workshop for Flyway Site Managers in South Korea; at the Pak Thale Nature Reserve launch in Thailand with Bird Conservation Society of Thailand; raptor count on Pulau Ubin, Singapore. Photos: Yong Ding Li; Bird Conservation Society of Thailand; Esther Ong

consumed domestically or traded for food in markets as an additional source of income. The scale of this hunting has been increasingly revealed in surveys by local conservationists, and its potential impact on migratory bird populations is especially worrying.

### Inconsistent legal protection

Inconsistencies in legal protection across different countries in a species' distribution potentially weaken conservation efforts of the same species in the Flyway. For instance, some species may be fully protected under the national legislation of one country, but lack adequate legal protection in other countries. One example is the Great Knot (*Calidris tenuirostris*) which is protected in Australia, but not in neighbouring Indonesia.

### Cooperative frameworks

Conserving migratory birds can be more effective if the different international stakeholders, and stakeholders from countries along the Flyway join forces and work together to share knowledge, and to synergise and complement each other's conservation efforts.

A leading player in the Flyway is the East Asian-Australasian Flyway Partnership, which consists of a coalition of both government, non-government and corporate stakeholders with an interest in conserving migratory waterbirds. Coordinated by a secretariat headquartered in Incheon City, South Korea, the Partnership not only offers a platform for international cooperation, but has massively contributed to redistributing

resources and technical expertise in Asia to strengthen efforts on the ground and at the policy level for migratory bird conservation.

International NGOs – such as BirdLife International (BirdLife), Wetlands International, Wildlife Conservation Society – and the International Union for the Conservation of Nature (IUCN) all have a role to play on migratory bird conservation.

In the region, Wetlands International has provided the driving force for the Asian Wetland Census (AWC)\* since its inception in the 1980s, which has provided a strong foundation of scientific data on waterbirds to support conservation efforts. Other NGOs are involved in managing wetlands, tracking species' migration and more importantly, reaching out to local people to secure their buy-in for migratory species conservation.

Many governments in the Asia-Pacific region have also signed and ratified the Convention on Wetlands (better known as



The Pacific Golden Plover (*Pluvialis fulva*) used to winter in Singapore in flocks of many hundreds, but their numbers appear to have declined greatly. Photo: Choy Wai Mun



The Whimbrel (*Numenius phaeopus*) are among the most numerous regularly occurring shorebirds in Singapore, often arriving in flocks of hundreds. Photo: Yong Ding Li

\* See 'Counting Asian Waterbirds in Singapore' *Nature Watch* (28)2:12-15.

the Ramsar Convention). Adopted in 1971 in the Iranian city of Ramsar, the Convention provides a framework for international cooperation on wetland conservation, while advancing the sustainable usage of wetland resources. Contracting parties list and recognise wetland sites that fulfil the Convention's criteria, as Ramsar Sites, many of which are important to globally important numbers of migratory birds.

### Looking ahead

Building awareness of migratory bird conservation through science and outreach activities is important, and has underpinned much of the successful conservation work to date. Such work has to continue, and may sometimes be helped by the birds themselves. In late 2019 to early 2020, the appearance and arrival of large flocks of the Asian Openbill (*Anastomus oscitans*) and Himalayan Vultures (*Gyps himalayensis*) created a surge of interest in migratory birds among the mainstream media, as well as the wider Singaporean public.

But it is also very necessary to keep track of the emerging threats faced by migratory species. The bits and pieces of information out in the news and various reports suggest that hunting of migratory birds is an increasingly severe threat, on top of habitat loss. To fill in the underlying knowledge gaps, BirdLife continues to work with regional partners to better understand how hunting is threatening migratory species in the region, where the worst areas of hunting are, and how local people and governments can be better engaged to deal with these in conservation challenges. 🌱

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