

Conservation

LAST RESORT

The only remaining habitat in China for migrating red knots is vanishing, due to human encroachment, posing a threat to the very survival of this species

By Wang Yan in Beijing and Tangshan

Intertidal mudflats are a crucial stopover for migrant birds, the main source of food for resident waders and a major seasonal cash cow for local shellfish harvesters

The Bohai Bay coastline in northeastern China, a magnet for migratory wading birdlife, is also becoming a playground for China's largest land reclamation companies.

As one of the world's most important wildlife habitats, Bohai Bay, located in the middle of the East Asian-Australian Flyway (EAAF), has provided a vital stopover for millions of migratory birds, and 60-80 percent of the world's total pass through the region every year.

However, Bohai Bay has also become one of the most densely populated and rapidly developing commercial and industrial areas in the world, putting humans in direct competition with the region's wildlife.

Between 1994 and 2010, a total of 450 square kilometers of offshore area, including 218 square kilometers of intertidal flats (one-third of the total area of such flats in the Bohai area), were appropriated by land reclamation projects. Ornithologists Zhang Zhengwang and Yang Hongyan from Beijing Normal University are among the naturalists decrying the destruction of this vital habitat. "[Land reclamation] has forced migrants northward to huddle in an ever shrinking 'rump,'" ran their recent joint paper on the subject. "Worse still, we predict the population density of waterfowl in these havens... will soon reach the point of collapse, in view of the continued reclamation activities in the Bohai Bay area."

Shrinking Reserves

The "ever-shrinking rump" referred to by Zhang and Yang is a region that stretches some 20 kilometers along the coastline of Luannan County, Tangshan City, Hebei Province, which plays host to 200,000 migratory waterfowl representing 60 species from March to late June each year. Zhang and Yang have focused their ornithological research in this specific area for a decade, in particular monitoring internationally significant concentrations of sixteen species. Among them are two subspecies of red knot, curlew sandpipers and, most critically, relict gulls, listed as a "vulnerable" species by the International Union for Conservation of Nature (IUCN).

In mid-July, our reporter visited this study site. Although most of the migratory birds, such as red knots, have moved to their northern breeding home, *NewsChina* was able to observe bird species such as the Kentish plover, pied avocet and black-winged stilt nesting and feeding on the tidal flats.

Despite the large flocks of waterfowl which are still visible in this area, ornithologist Que Pinjia told our reporter that their presence belies the harsh reality of alarmingly rapid habitat loss. Que, also from Beijing Normal University, was conducting daily tallies and banding of newly-hatched Kentish plovers in the area.

Two large industrial development projects have been underway on the western and northern coasts of the Bohai Bay. The Tianjin Binhai New Area located west of Bohai Bay and the Caofeidian New Area to the north were started in 1994 and 2002 respectively, with the former under the jurisdiction of Tianjin Municipality and the latter under the government of Tangshan City.

Sitting adjacent to the Caofeidian land reclamation project which covers a total area of 1,943 square kilometers, the limited coastal regions of Luannan are already dotted with dykes, harbors, roads, salt-pans, shrimp ponds and construction sites on manmade islands, all evidence of increasing human activity. These projects come alongside petrochemical giant Sinopec's 1 billion-ton oilfield which now operates on the seashore.

Yang Hongyan has done years of research on the area's two subspecies of red knot, *calidris canutus*—the *piersmai* and *rogersi* subgroups and claims that, in 2010, the area was home to at least 67 percent of the world population of the former and 57 percent of the latter during April and May.

"Peak spring numbers of the two red knot subspecies in the EAAF increased from 13 percent of the total global population in 2007 to 62 percent in 2010," wrote Yang in her research paper. "The increase in red knot numbers in this area comes alongside a decrease in the total flyway population of both subspecies, from 222,000 in 2000 down to 130,000 in 2007, and further down to 105,000 in 2009."

Yang's calculations confirm that these rare birds have been forced into ever-smaller areas of the tidal flats, and are now concentrated in the core area of Tangshan as land reclamation continues to erode habitats in Bohai Bay.

"The birds have nowhere else to go," Yang told *NewsChina*. "We can therefore conclude that waterfowl density at the remaining coastal habitats in the Bohai Bay area, especially in Tangshan, will continue to increase as intertidal flats are lost. As a result, instinct has forced the birds to congregate together or to relocate, leading to a decline in their flyway population."

Human Threat

Intertidal flats in Luannan are so far the only intact haven for the migratory shorebirds along the entire Bohai coastline. Despite this, commercial salt-pans and shrimp ponds have occupied much of the coastal territory in the region, and now rumors of a planned sea cucumber farm, an expensive local delicacy, have begun to circulate.

"If this project is approved by the local government, another patch of precious mudflats will disappear, which will pose a lethal threat to the birds," Que Pinjia told our reporter.

In early July, local villagers submerged a 200,000 square meter area of tidal flats, a breeding ground for Kentish plovers, for use as shrimp farms, destroying some 60 nests and hundreds of eggs. Que, whose research site happened to cover the area, had to terminate his research. Much to his surprise, he found a number of Kentish plovers had started to nest on the edges of salt-pans. "Disruptive human activity is continuing, forcing the birds' habitats inland," he said.

Relocation of nesting birds is one thing, but migratory wildfowl need a stationary stopover if they are to survive their epic journey. Red knots, for example, fly over 10,000 kilometers each year from Australia and New Zealand, their winter habitats, to their summer breeding grounds in Siberia. Their nonstop six day flight forces them to land in Bohai Bay and feed for up to a month before resuming their flight path and preparing themselves for their breeding cycle in the Arctic.

"This bay area is historically a decisive stopover site for migratory red knots, especially now that over 30 percent of the original mudflats

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have been transformed by human development,” said Zhang Zheng-wang. “The limited remaining habitat is therefore crucial to their very survival.”

“Red knots only appear in big open intertidal coastal mudflat systems where they can find mollusks,” commented Dutch shorebird biologist Theunis Piersma, the namesake of one red knot subspecies, to *NewsChina* via email.

Theunis Piersma has been cooperating with Beijing Normal University ornithologists in their Bohai projects for years. He expressed his concerns about the survival of local species during a conference held in late May in the coastal city of Tangshan, Hebei Province. “I feel very proud to have these birds named after me, but I fear that they may actually become extinct in my lifetime,” he told delegates.

Gloomy Prospect

Past experience gives conservationists little hope. Along China’s Yellow Sea coastline, another highly developed industrial region, mudflats are vanishing at an astonishing rate, and this habitat loss has been blamed for a sharp downturn in migratory bird populations in Australia and New Zealand over the last 30 years.

A land reclamation project comprising 300 square kilometers of mudflats in Saemangeum, South Korea, in the spring of 2006 devastated some local bird species. Saemangeum was once home to 23 percent of the world’s population of great knots, but since the mudflats were closed off in 2008, this population has declined by 20 percent, resulting in the species now being labeled “vulnerable.”

“The worst-case scenario resulting from land reclamation is the global extinction of both subspecies of red knot,” Yang Hongyan told our reporter. “This could happen as soon as one or two years, just like the disappearance of great knots in Saemangeum.”

“Since most coastal areas in the adjacent regions have been developed beyond recovery we hope the limited remaining habitats can be preserved,” said Zhang. “The ecological benefit, for both humans and birds, of preservation is more than any calculable economic value of land reclamation. These wetlands have an ecological function as the ‘kidneys’ of the Bohai Sea.”

According to Zhang, promoting eco-tourism or setting up a protection zone would be a good start if the region is to be protected. However, he acknowledged that gaining official approval for a National Wetlands Reserve from the central government would take years.

“We have tried to contact the Luannan County government and submitted our proposals, but we have received no response,” Zhang told our reporter, “All in all, the county government has its sights set on short-term gain by boosting the local economy.”

“WWF Hong Kong would provide initiative funding and I believe it is not a big problem for us to get protection money from overseas, including from the Netherlands and other countries which also host these bird species’ wintering sites or breeding grounds,” said Yang, “All the countries involved on the flyway, including the US and New Zealand, are very concerned about the situation here.”

Since 2009, people from the Global Flyway Network, a collaborative global organization of shorebird researchers and birdwatchers, have come to the Luannan coastal mudflat regions every spring to



Dredging the mudflats



Land reclamation in progress



Oil drilling in Nanpu

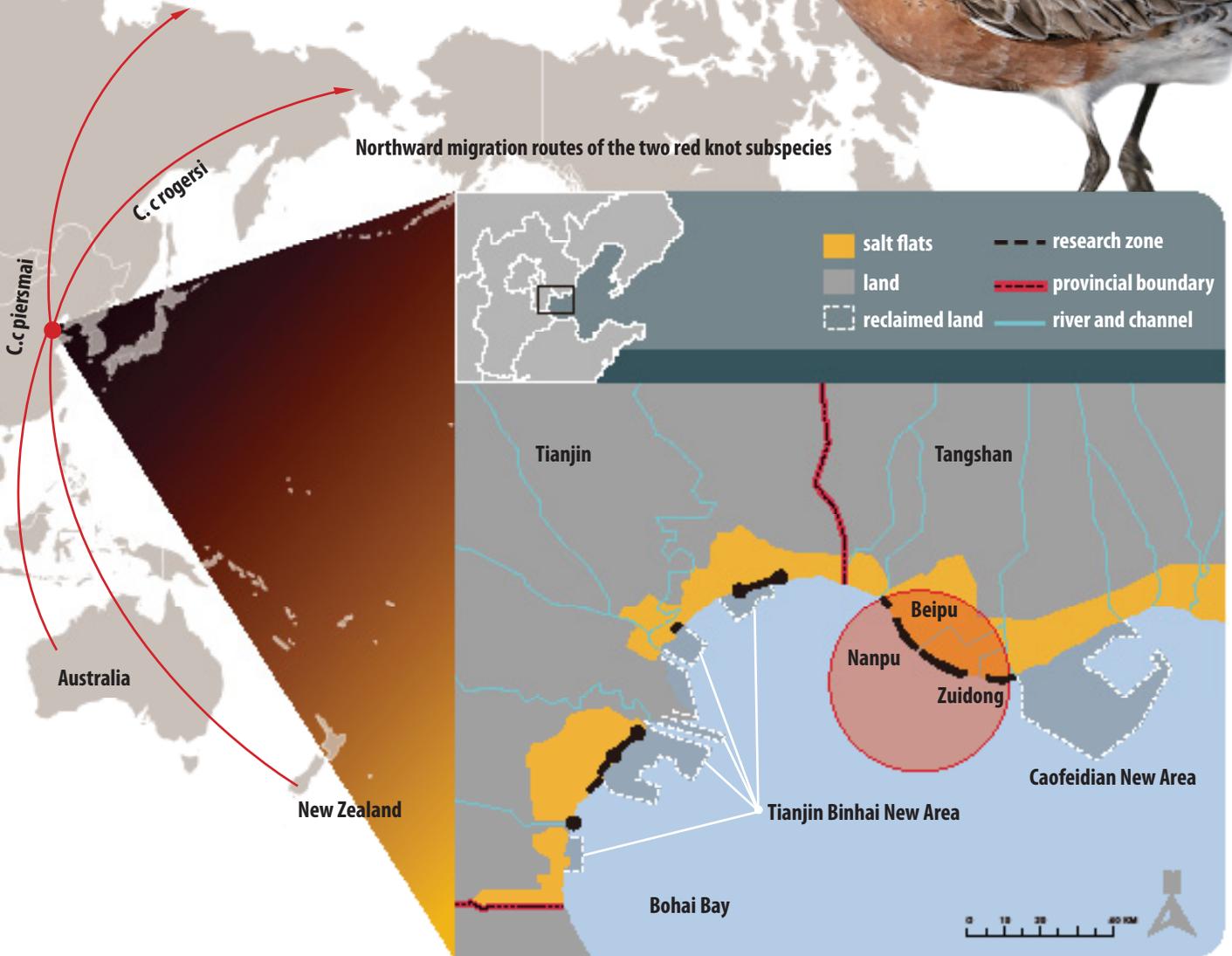


A salt plant

China



Northward migration routes of the two red knot subspecies



refused to comment on any potential development plans for the mudflats.

International Obligation

In 1992, China joined the Ramsar Convention, an intergovernmental treaty on conservation and the use of wetlands initiated in 1971. From then on, the country has set up over 40 Ramsar sites and listed over 170 wetlands as “of national importance.”

In the latest National Report on the Implementation of the Ramsar Convention on Wetlands submitted by China to the Conference of Contracting Parties in June 2012, the Chinese government listed a se-

Despite the PR, satellite monitoring conducted and published by the Chinese Academy of Sciences, a State organization, in early February this year indicates that in the past 30 years, China’s total wetland areas have shrunk by 9 percent, or 8,152 square kilometers.

WWF China’s marine program officer Wang Songlin said the Luannan wetlands already meet international standards for “wetlands of international importance.”

“We urge the local government to set up a protection area in the Luannan mudflats and apply for this status as agreed upon by the Ramsar Convention, as soon as possible,” Wang said at a recent press conference. ★