

CONSERVATION REPORT

# Bird on the edge: can the Spoon-billed Sandpiper *Eurynorhynchus pygmeus* be saved?

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### Introduction

With its spatulate bill, unique among waders, the Spoon-billed Sandpiper *Eurynorhynchus pygmeus* is a weird and wonderful species, high on the wish-list of most world birders and one of the most difficult birds in the world to see on its breeding grounds. It is also a species in deep trouble, today considered to be one of the most endangered birds on the planet.

The Spoon-billed Sandpiper breeds along a discontinuous narrow strip of coastal tundra in north-eastern Russia (Zöckler & Lappo 2008). The best-known breeding sites are in Chukotka (Figure 1). On leaving its breeding grounds, the species undertakes an epic 8,000 km migration along part of the East Asian–Australasian Flyway. The birds follow the west Pacific coast south through eastern Russia, Japan, Korea and the Taiwan Strait to winter in southern and South-East Asia, with historical records ranging from India to Vietnam. It is probably at the saltpans of the inner Gulf of Thailand, primarily at Pak Thale, but also at other locations such as Khok Kham south of Bangkok, that most birders lucky enough to have seen the species have connected with the small numbers of birds that still winter there. However, sightings through other parts of the migratory and wintering range have become increasingly few and far between, and the species is in serious decline.

### A population in freefall?

The breeding area was reported for the first time only 130 years ago, when an expedition led by Nordenskiöld visited the Arctic coast of Chukotka; the species was probably relatively common in this

**Figure 1.** The range of the Spoon-billed Sandpiper. The shaded area shows the approximate limits of breeding grounds in Siberia, and wintering ground in southern and South-East Asia. A Chukotka; B South Korea (Saemangeum, in the Yellow Sea, has traditionally been one of the bird’s most important staging posts); C the Bay of Martaban, off the south coast of Myanmar, one of the species’s most important wintering areas.



**Plate 1.** Typical landscape, Spoon-billed Sandpiper *Eurynorhynchus pygmeus* breeding grounds, Chukotka, July 2005.



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**Plate 2.** Spoon-billed Sandpiper, adult in breeding plumage, Chutotka, July 2000.

**Plate 3.** Spoon-billed Sandpiper, adult in breeding plumage, Chutotka, July 2000.

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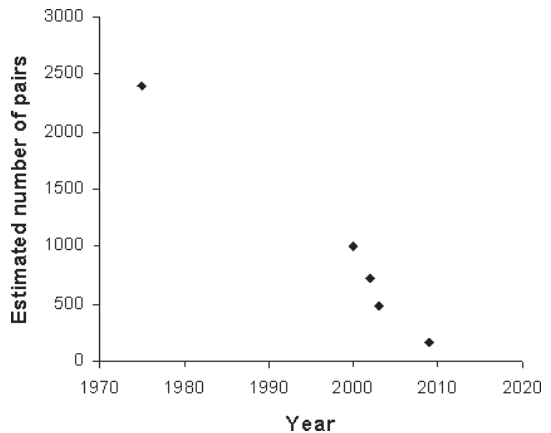


area at the time (Portenko 1972). Subsequently, small numbers of birds were reported opportunistically until 50–95 males were found in 1972–74 by Alexander Y. Kondratyev, 50 km west of the mooring site of the Nordenskiöld expedition (Tomkovich 2008). In the 1970s, Flint & Kondratyev (1977) used breeding densities from limited distribution records, extrapolated across what was considered to be the potential coastal breeding habitat, to produce a population estimate of 2,000–2,800 breeding pairs. However, even then population declines were suspected in some of the known breeding range (Tomkovich *et al.* 2002), and the species was listed as globally Vulnerable and thus at high risk of extinction in the wild (Collar *et al.* 1994; BirdLife International 2001).

Much of the more recent information about the species on its breeding grounds has resulted from regular Arctic expeditions to Chukotka, initiated in the 1980s by Pavel Tomkovich and supplemented by the work of Evgeny Syroechkovskiy and colleagues including Christoph Zöckler from 2000. Results of the 2000 expedition raised the level of concern for the species, as numbers had declined and birds had disappeared from some of the previous breeding sites. A recent analysis of data collected from four breeding sites between 2002 and 2009 estimated a decline of 26% per annum and a total decline of 88% over this period (Zöckler *et al.* 2010a). This suggests a decline from a total population of approximately 1,000 breeding pairs in 2000 to just 120–220 in 2009. The IUCN threat status of the Spoon-billed Sandpiper was upgraded from Vulnerable to Endangered in 2004 and to Critically Endangered (indicating an extremely high risk of extinction in the wild) in 2008. Today, with a breeding population that could well be below 100 pairs (Figure 2), imminent extinction is a very real possibility.

Although only four populations had been monitored sufficiently often to estimate a decline rate, the rate is roughly similar for all of them and is considered to be representative of the whole breeding population. Observations from a three-year study in the 1980s (Tomkovich 1995) and more recently (Zöckler *et al.* 2010a) suggest that birds are quite site-faithful once they have settled to breed, and while it is possible that some of the birds from the monitored populations have emigrated, the lack of immigration from other populations indicates that this was not the case. This is further supported by a study (Green *et al.* unpublished report) in which population trends modelled *only* using demographic data from one of the four monitored populations resulted in a reconstructed population trajectory similar to that from recent counts.

**Fig. 2.** Population trends in the number of Spoon-billed Sandpiper *Eurynorhynchus pygmeus* breeding pairs in Chukotka, Russia. Data from: Flint & Kondratiev 1977; Tomkovich *et al.* 2002; Syroechkovskiy 2005; Syroechkovskiy *et al.* 2010; Zöckler *et al.* 2010a. Mid-points of estimated population range estimates are shown.



Few staging or wintering sites have been monitored systematically, but existing records are consistent with the declines observed on the breeding grounds. While large congregations of birds were seen at several staging posts and wintering sites historically, such as a record of 'several hundred' Spoon-billed Sandpipers in the Nakdong estuary, South Korea (e.g. Gore & Won 1971), and 257 individuals reported in 1989 from the Bay of Bengal (Howes & Bakewell 1989), numbers of birds observed at these sites are now much lower.

Although the Spoon-billed Sandpiper's non-breeding range has not been documented comprehensively, the search effort for wintering birds has increased considerably in recent years. In 2008, an expedition to Myanmar focused on the locations where three specimens were taken by Victorian collectors and lodged in the British Museum of Natural History. Remarkably, Spoon-billed Sandpipers were found at all three locations and one, the Bay of Martaban, is probably the most important wintering site for the species, holding about half the world population (Zöckler *et al.* 2010b). Since the early 2000s, several hundred birds have been marked on their breeding grounds with coloured leg flags, and while these can be difficult to see at distance in the field, observations of colour-marked birds in the Bay of Martaban link this important site to the South Chukotka breeding grounds (C. Zöckler pers. comm.). The Bay of Martaban and the Ganges Delta and East Bengali coast south to the Arakan coast in West Myanmar appear to be the key wintering sites for the species (Zöckler *et al.* 2010b). Historically, many hundreds



and even several thousands of Spoon-billed Sandpipers may have wintered in the Bay of Martaban, but gone unnoticed. This is perhaps not as surprising as it may initially appear, as even experienced birdwatchers have difficulty picking out Spoon-billed Sandpipers in large, distant wintering wader flocks; moreover, search effort will have been very low in this area because Myanmar was not accessible to foreigners until relatively recently.

The available data suggest that the Spoon-billed Sandpiper population is in freefall and, if current trends continue, the species could be at such low levels that extinction through stochastic events could happen within 5–10 years. Although there is currently no evidence to suggest that the population is much larger than was estimated by Zöckler *et al.* (2010a), population modelling shows that, were the population to be double that estimated, this would only be likely to delay the likelihood of extinction by a couple of years as the decline rate is so high (Green *et al.* unpublished report).

#### Why has the population crashed?

There is no information to suggest when Spoon-billed Sandpiper numbers started falling; the population could have been in long-term decline for some time before the first population estimate in the 1970s. However, from monitoring on the breeding grounds it is clear that the rate of decline has accelerated markedly, and has been very rapid indeed since at least 2000. The causal factor(s) could be acting at any, or several, stages of the species's life-cycle and across a huge geographical range, from the remote breeding grounds, anywhere along the 8,000 km migration route, to the wintering areas. Fortunately, detailed research on the breeding grounds (Zöckler *et al.* 2010a) helps narrow down this search by identifying the demographic mechanisms responsible. From studies of colour-marked individual birds, researchers found that the minimum annual survival rate for adults was 76%, and that, on average, about 0.3 birds fledged per breeding adult every year. While the survival estimates should be treated with caution, as reporting probability was low in the last few years, estimated survival is approximately what would be expected for an Arctic-breeding wader (van Gils & Wiersma 1996, Sandercock 2003), and productivity does not appear to be especially low. However, the rate of addition of new adults to the breeding population was very low, at only 0.05 new birds recruited into the breeding population per existing adult per year. Five times this number of birds would need to be recruited back into the breeding population to result in a stable population. This suggests a very low

survival of immatures between fledging and first breeding, which probably occurs at two years of age. These results suggest that whatever has caused the recent decline appears to be affecting the survival of full-grown birds outside the breeding season, and immatures much more than adults. The next step is to examine the potential factors involved.

As with many calidrids, Spoon-billed Sandpipers have an innate ability to migrate to their wintering grounds, and fledged birds begin their long journey south after the adults have left (e.g. see van Gils & Wiersma 1996). The largest congregations of Spoon-billed Sandpipers observed during migration in recent decades were on the estuarine sand and mudflat staging posts in the Yellow Sea in South Korea, especially in the Saemangeum area, where 280 birds were reported in the late 1990s (BirdLife International 2001, Yi & Kim in prep. cited in Barter 2002).

The Yellow (Huanghai) Sea is huge, spanning about 960 km from north to south and 700 km from east to west, and contains some of the largest tidal flats in the world. It is a shallow sea, partially surrounded by the coastlines of China and Korea. The importance of the coastal wetlands of the Yellow Sea as a migratory staging post and feeding area cannot be overestimated. About two million waders, 40% of all those in the East Asian–Australasian Flyway, use the region during their northwards migration, and one million during their return migration. The area supports more than 90% of the whole flyway breeding populations of six wader species (Great Knot *Calidris tenuirostris*, Bar-tailed Godwit *Limosa lapponica*, Grey Plover *Pluvialis squatarola*, Kentish Plover *Charadrius alexandrinus*, Eastern Curlew *Numenius madagascariensis* and Eurasian Curlew *N. arquata*) during their northwards migration (Barter 2002). Similarly, it supports most of the world populations of the Endangered Nordmann's Greenshank *Tringa guttifer* as well as that of the Spoon-billed Sandpiper on migration (Barter 2002).

The river catchments draining into the Yellow Sea are also home to about 600 million people—about 10% of the world's population (BirdLife International 2003). Pressure on the region's resources has included pollution of some of the waters draining into the Yellow Sea and there has been, and continues to be, massive conversion of intertidal wetlands to agricultural, urban and industrial use. A recent stark example of the loss of critical wetlands is that of Saemangeum. Formed from the estuaries of the Mangyeong and Dongjin rivers on South Korea's west coast, Saemangeum provided about 280 km<sup>2</sup> of exposed mudflats and sandflats at low tide, and was one of the Spoon-

billed Sandpiper's most important migratory staging posts. The cumulative impacts of the loss and degradation of sites like Saemangeum could be significant, with many displaced waders having nowhere to go and increased competition for remaining resources. Shortage of feeding habitat and competition for food could potentially have a disproportionate effect on the survival of young Spoon-billed Sandpipers, as has been found with other waders (Stillman & Goss-Custard 2010). Young birds can also be more susceptible to mortality from disease and other factors, especially if food-stressed, and habitat loss at staging posts is almost certainly a factor in the species's decline.

This possibility must not be dismissed: the loss of staging posts through land claim is undoubtedly limiting the populations of a whole suite of waders. However, conservationists working at the key wintering sites of Nan Thar Island, in the Bay of Bengal, and the Bay of Martaban recently discovered what could be a major factor of the recent declines. Bird trappers at Nan Thar were found to be catching large numbers of shorebirds, including many small waders, with individual trappers sometimes catching more than 100 birds a night (Zöckler 2009). In February 2010, a survey team found bird trapping to be similarly common across the Bay of Martaban (Zöckler *et al.* 2010b). Much of the trapping involved mist-netting at high-tide roosts using large-mesh monofilament nets, or sometimes fishing nets. This widespread trapping appears to be mainly for the pot, with larger waders targeted and smaller waders like Spoon-billed Sandpiper a by-catch, although many are unlikely to survive even if released. While there is nothing to suggest when such trapping started, it does present a plausible cause of the recent very rapid declines. The numbers of birds that trappers indicated catching could result in a significant proportion of the wintering population being trapped each year. In addition, trapping could result in significantly higher mortality of immature Spoon-billed Sandpipers than adults, as immatures probably do not return to the breeding grounds until they are two years old, some apparently spending the whole of their first summer as well as two winters on the wintering grounds. It is also feasible that certain trapping methods may target immature birds disproportionately and that the intensity of trapping pressure may be greater at certain times of year, although research is needed to determine this.

In summary, immature survival may be affected by reduced feeding opportunities on migration, trapping and other as yet unidentified factors to which immature birds may be more susceptible than adults, or any combination of these. However, the evidence from the wintering grounds suggests

that winter trapping along with the effects of recently accelerated habitat loss, may well be responsible for the rapid recent declines.

### **What can be done?**

In the long term, survival of not only the Spoon-billed Sandpiper but the complement of waders and other waterbirds that migrate along the East Asian–Australian Flyway depends on the maintenance of critical intertidal staging posts. Unfortunately, the loss of such areas continues apace in countries including South Korea and China, as reclamation is considered important for economic development. It is perhaps ironic that in the UK, the direction of movement is towards allowing some of the historical coastal hard defences to fall into disrepair or be deliberately breached in order to recreate habitat to compensate for that lost from sea-level rise and other effects of climate change. Such 'managed realignment' can also deliver a suite of economic benefits, from natural flood-risk reduction to recreational opportunities and the enhancement of fish recruitment areas. Other countries investigating the reinstatement of more natural coastal tidal systems include Japan, where two floodgates are to be opened in the Isahaya Bay dike in Nagasaki Prefecture to study the impact on the marine environment and fisheries, following claims of reduced fish catches after the sluices were closed. Such schemes should help to demonstrate the short-sighted nature of large-scale intertidal reclamation and the many benefits of maintaining more natural coastlines. Hopefully this, along with increased identification and designation of key coastal Ramsar sites, will ensure that at least some of the key staging areas for migratory waterbirds are preserved.

Fortunately, tackling trapping on the wintering grounds appears to be more tractable. Work is already underway in the Bay of Martaban and on Nan Thar engaging with local communities and developing alternative livelihoods in those areas (Zöckler *et al.* 2010b). Preliminary indications suggest that these actions have been successful and, although more work is needed, the signs so far are positive.

However, while undertaking work on the wintering grounds is both essential and urgent, recent modelling work (Green *et al.* 2010) has shown that if a major cause of the recent decline has been correctly identified and is indeed winter trapping, and this can be addressed rapidly and effectively (with a halving of winter mortality every five years from 2011), the population will still be at an extremely low level and highly vulnerable to extinction from stochastic effects for more than a decade. These assumptions are, however, rather

optimistic. Several factors may be contributing to the declines, and the identification and provision of sustainable alternative livelihoods is both a difficult and lengthy process. Also, we still do not know where all of the Spoon-billed Sandpipers winter, although wherever they are they appear to have similarly low survival. Consequently, the species is at serious risk of extinction unless additional action can be taken.

One option that could help is that of conservation breeding and reintroduction. This would aim to provide a safety net to save the species from extinction, provide birds for release to supplement the wild population should it become too small to be sustainable, and provide birds for reintroduction should the wild population become extinct.

Conservation breeding appears to evoke a diverse range of reactions in people, from the very positive, to the suspicious. Positive responses perhaps come from the knowledge that conservation breeding has saved a suite of the world's most endangered bird species from extinction and allowed them to be reintroduced to the wild. The most famous examples include the Black Stilt *Himantopus novaezelandiae*, California Condor *Gymnogyps californianus*, Mauritius Kestrel *Falco punctatus*, Pink Pigeon *Nesoenas mayeri*, Mauritius Parakeet *Psittacula echo*, Hawaiian Goose *Branta sandvicensis* and Crested Ibis *Nipponia nippon*. More negative responses may arise from the fact that conservation breeding is generally a long-term and costly option, has not always been successfully deployed, and has occasionally involved people whose primary intent is not conservation. In addition, some feel that it may divert resources from other actions necessary in the wild (successes and failures illustrated in Donald *et al.* 2010). However, rather than being viewed emotively, conservation breeding should be viewed objectively, as a conservation management tool such as habitat enhancement or the management of predators or hunting pressure. Conservationists need to use the evidence available to assess which tools are most likely to succeed at achieving their objectives—in this case saving a species from extinction. The need for emergency measures to save the Spoon-billed Sandpiper is clear from the population trends, and from the modelling work described above. But are conservation breeding and reintroduction theoretically possible for a small, migratory wader breeding in such a remote location?

### **Is conservation breeding possible?**

A suite of questions need to be answered to evaluate the theoretical feasibility of breeding Spoon-billed

Sandpipers in captivity. We need to examine whether there is a precedent for keeping and breeding small waders in captivity, and (importantly) whether such long-distance migrants can be successfully reintroduced to the wild, either to supplement an existing small population or to re-establish one that has become extinct. There appears to be a popular myth that waders will not breed in captivity. This misconception may stem from cases in the past where researchers and others have taken full-grown birds from the wild, and, with a few rare exceptions, failed to get them to breed. However, aviculturists have found that waders do breed successfully in captivity when taken as eggs or young chicks, probably because birds habituate more readily to captivity when very young. Waders, including Arctic species, are now bred in captivity by numerous zoos and other bird keepers, mostly located in the temperate zone. These include small waders such as Little *Calidris minuta* and Temminck's Stints *C. temminckii*, Dunlin *C. alpina*, Sanderling *C. alba* and other *Calidris* species (Green *et al.* unpublished report). Fortunately, although Spoon-billed Sandpipers have a highly adapted bill, wader chicks peck around and find their own food as soon as they hatch, so feeding captive birds should present no particular issues.

Waders have also been reared or bred in captivity from wild-collected eggs and chicks and successfully released into the wild as part of conservation initiatives. These include the Critically Endangered Black Stilt in New Zealand (van Heezik *et al.* 2009) and the migratory Piping Plover *Charadrius melodus* in North America (Powell *et al.* 1997). Although not a wader, there is also a useful recent precedent for the reintroduction of another long-distance migrant. Chicks of Corncrakes *Crex crex*, taken from stock that had been in captivity for at least ten generations in Germany, were reared and released in Cambridgeshire, where the species had been extinct as a breeding bird for about 80 years. Corncrakes are long-distance migrants, wintering in sub-Saharan Africa, and released birds not only retained their innate ability to migrate but were found to have similar return rates to wild-bred young. Like Corncrakes and the young of many *Calidris* species, Spoon-billed Sandpipers do not take migratory cues from the adults but leave their breeding grounds as groups of immatures after the adults have departed. There is therefore no reason to suspect that this ability would be lost in birds bred far from their Arctic Russian breeding grounds.

From what we currently know, the greatest challenges to conservation breeding and reintroduction appear to be logistical rather than



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**Plate 4.** Spoon-billed Sandpiper chick and eggs at nesting site in Chukotka, July 2005.

biological. Spoon-billed Sandpipers could not readily be maintained year-round in Russia's harsh climate, and would ideally be maintained and bred under temperate conditions; Arctic and sub-Arctic waders are known to breed successfully under temperate conditions. Chukotka is extremely remote, access is difficult because of the harsh and unpredictable climate, even during the breeding season, and Spoon-billed Sandpipers would need to be taken as eggs or young chicks and transported to a suitable captive facility. The Slimbridge headquarters of the Wildfowl & Wetlands Trust (WWT) is a suitable location for a breeding programme, as the aviculturists there have experience of dealing with Critically Endangered waterbirds both in the wild and in captivity. This includes successfully taking eggs (under licence) from wild Dunlins in the UK, transporting them long distances, and hatching and rearing birds in captivity; an exercise undertaken jointly with the RSPB, with the express purpose of helping determine the feasibility of conservation breeding of Spoon-billed Sandpipers. However, an expedition to Chukotka presents significantly more challenges. If this were to take place, one option would be to take clutches and rear birds to fledging in the Arctic north, and then to transport fully fledged birds back to a rearing facility. Hatching eggs and rearing chicks near the breeding grounds should be manageable, since clean water and electricity are available and reliable. The advantage of transporting fledged birds is that they would be far easier to keep in captivity, even in a hotel room if necessary, if there were transportation hold-ups en route (a not infrequent occurrence given the logistical difficulties of travel to and from Chukotka). Many full-grown waders have



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**Plate 5.** Spoon-billed Sandpiper chick, Chutotka, July 2000.

previously been transported successfully over long distances—for example 30 Rock Sandpipers *Calidris ptilocnemis* were transported from Alaska to the Netherlands without problem (T. Piersma pers. comm.).

The evidence suggests that, while logistically challenging, it would be theoretically possible to take Spoon-billed Sandpiper eggs or young chicks from the wild, rear and breed birds in captivity, and reintroduce them to the wild when a surplus becomes available and the major threats have been dealt with in the wild. But while it appears to be technically possible to undertake conservation breeding, is it desirable?

#### **Is conservation breeding desirable?**

Given that the population is in such a perilous position, conservation breeding may seem like an obvious measure. However, it is important to establish the potential impact of taking clutches on an already very small wild population. To establish this, Green *et al.* (unpublished report) used the estimated population size and information available on adult survival, productivity and recruitment (Zöckler *et al.* 2010a) to model the impact on the wild donor population of taking ten clutches in 2011. The modelling showed that the impact was very low, with adult population size being only about 1% lower than if clutches were not taken. This impact would be even lower if any birds were to re-lay, which is feasible. Indeed, given the decline rate, it is possible that there may no longer be 10 pairs breeding at the only known site from which eggs could be taken in 2011. The very low impact should also be considered in the context of an annual population decline rate of 26%. The reason that the impact would be so low is because



immature survival is very low—and thus any young birds prevented from fledging by taking clutches would have been very unlikely to survive to breeding age anyway.

As with any conservation action, there are no guarantees of success with a conservation breeding programme. Spoon-billed Sandpipers have not previously been kept in captivity, and it is unlikely that all eggs taken would hatch and result in healthy fledged birds in captivity. However, the available evidence has been scrutinised carefully and suggests that there is a good chance of success. The modelling exercise is important because it shows that if conservation breeding is attempted but fails, it will not have had a significant impact on the wild population. If it succeeds, it will provide the vital safety net needed. Without it, it is likely that the species will soon pass beyond the point of no return, even if actions to reduce threats in the wild are taken rapidly and are reasonably successful. The case for establishing a conservation breeding programme has therefore been judged to be very compelling, and is needed immediately, while it is still possible to find birds in the wild. Indeed WWT, RSPB, Birds Russia, Moscow Zoo, the All Russian Research Institute for Nature Conservation (ARRINC) and others are attempting an emergency rescue mission to do just this as this paper goes to press. It is, however, essential to remember that *in isolation* conservation breeding is not the answer—no conservationist wishes birds to exist only in captivity. If this happens, we will have failed. It is certainly not a case of *either* conservation breeding *or* actions to reduce trapping pressure and inter-tidal reclamation. *All* of these are essential and must be undertaken simultaneously if we are to secure the future of the species in the wild.

### How are activities being coordinated?

Many organisations have been involved in Spoon-billed Sandpiper research and conservation for some time. Initial expeditions to the remote Arctic breeding grounds were run by intrepid Russian scientists, particularly Pavel Tomkovich and then Evgeny Syroechkovskiy, supported over the last decade by Christoph Zöckler and others. A Spoon-billed Sandpiper Action Plan was produced on behalf of BirdLife International with support from the Convention on Migratory Species (Zöckler *et al.* 2008), and while this requires updating, it is an important guide for international action. Coordination of this action and the identification of new actions necessary is undertaken by the 'EAAFP Spoon-billed Sandpiper Task Force', an international group set up under the auspices of the East Asian–Australasian Flyway Partnership

(EAAFP). This is a voluntary partnership of governmental and non-governmental organisations that aims to protect migratory waterbirds, their habitat and the livelihoods of people dependent on them along the flyway. The Task Force is chaired by Evgeny Syroechkovskiy of Birds Russia, and coordinated by Christoph Zöckler.

In recent years, BirdLife International and BirdLife partner organisations in several countries within the Spoon-billed Sandpiper's range have increased their efforts on the conservation of the species, raising funds for survey and monitoring work on the breeding grounds, and working to help ensure site protection along the migratory flyway. Since the publication of demographic data confirming the extent of the declines, many more individuals and organisations have expressed their desire and willingness to help save the species. Among these are a number of UK-based organisations, including WWT and the RSPB, which have pooled their expertise and resources in a major collaborative effort to help support some of the most urgent conservation actions needed to save the species. With so many countries, conservation needs, and organisations involved, good coordination is essential, and a UK Spoon-billed Sandpiper Support Group, chaired by Nigel Clark of the BTO, has been formed to help ensure good communication and co-ordination between the different UK-based stakeholders, and to support the work of the Task Force.

Many people and organisations are involved in Spoon-billed Sandpiper conservation—this is both inevitable (for such a unique and high-profile species with an 8,000 km migration spanning many countries) and necessary, as many and varied things need to be done. The concern is that it may not be possible to find the resources necessary to do so much, so quickly.

### Can we save the Spoon-billed Sandpiper?

The Spoon-billed Sandpiper is an internationally recognisable flagship species for the East Asian–Australasian Flyway. Its long-term fate is linked to that of a whole suite of species that use the flyway, and to the conservation of sites along its length. In addition to the longer-term measures needed to protect these sites, activities such as conservation breeding and a reduction in winter trapping pressure are essential and of the utmost urgency.

It would be foolish to assume that it is going to be easy to save the Spoon-billed Sandpiper—clearly it is not. Time is very short, funds so far available are insufficient, and the logistical problems are considerable. Losing this unique species would indeed be tragic. However, a bigger tragedy would be to lose it in the knowledge that we have not





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**Plate 6.** Good luck! Spoon-billed Sandpiper moulting into breeding plumage whilst en route north in spring 2011, Mai Po, Hong Kong, April 2011.

done everything in our power to save it. This is why many organisations across the conservation community have united to attempt conservation breeding this summer, to supplement the many other essential measures needed or underway. While success is by no means guaranteed, with a huge collaborative effort, and a measure of luck, we believe that it is still possible to save this remarkable species, and we hope that others will support this effort.

### Dedication

This paper is dedicated to the memory of Dr Don Merton, 1939–2011, whose pioneering work helped save many species from extinction and inspired a generation of conservationists.

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