



# CONVENTION ON MIGRATORY SPECIES

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Quito, Ecuador, 4-9 November 2014

Agenda Item 24.1.1

## PROPOSAL FOR THE INCLUSION OF THE GREAT KNOT (*Calidris tenuirostris*) ON CMS APPENDIX I

### Summary

The Government of the Philippines has submitted a proposal for the inclusion of the Great Knot (*Calidris tenuirostris*) on CMS Appendix I for the consideration of the 11<sup>th</sup> Meeting of the Conference of the Parties (COP11), 4-9 November 2014, Quito, Ecuador.

The proposal is reproduced under this cover for a decision on its approval or rejection by the Conference of the Parties.



**PROPOSAL FOR THE INCLUSION OF SPECIES ON THE APPENDICES OF THE  
CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF  
WILD ANIMALS**

**A. PROPOSAL:** To list Great Knot *Calidris tenuirostris* on Appendix I

**B. PROPONENT:** Government of Philippines

**C. SUPPORTING STATEMENT**

**1. Taxon**

- |            |                     |  |
|------------|---------------------|--|
| <b>1.1</b> | <b>Class</b>        | Aves   |
| <b>1.2</b> | <b>Order</b>        | Charadriiformes  |
| <b>1.3</b> | <b>Family</b>       | Scolopacidae   |
| <b>1.4</b> | <b>Species:</b>     | <i>Calidris tenuirostris</i>                                       |
| <b>1.5</b> | <b>Common names</b> | Great Knot, Eastern Knot, Bécasseau de l'Anadyr, Correlimos Grande |

**2. Biological data**

*Calidris tenuirostris* is the largest of the calidrid species.

**2.1 Distribution**

It breeds in north-east Siberia, the **Russia Federation**.

More than 80% of the global population stage in the Yellow Sea of **Democratic People's Republic of Korea, Republic of Korea and China**, especially on northward migration. Distribution within the Yellow Sea is patchy and it is likely that some staging strongholds have yet to be identified. Most northbound birds fly non-stop from non-breeding grounds to Yellow Sea staging areas, but significant passage numbers are recorded in **Japan** (50-10,000 individuals), **Philippines** (3700), **Thailand, Malaysia**, and also in **Vietnam and Indonesia**. Flight from Yellow Sea to breeding grounds is direct. Some post-breeding birds use the Yellow Sea, and some migrate south via the Sea of Okhotsk, **Russian Federation**, where they stage for a non-stop flight to wintering grounds.

Most of the population winters in **Australia** (probably >90%; Chatto 2003, Bamford et al 2008, Rogers et al. 2011), mainly at sites on the northern coast. There are also wintering populations on the coastline of South-East Asia including **Thailand** (c 5000 P Round *in litt* 2013) and the **Philippines** (7000 WBCP 2011), **Malaysia** (3000 in Selangor, D Bakewell *in litt* 2014.) and **Papua New Guinea** and on the coasts of **India, Bangladesh** (less than 600 birds S Choudhary *in litt* 2014), **Pakistan**, and the eastern coast of the Arabian Peninsula (Ali and Ripley 1969; del Hoyo *et al.* 1996).

Of the 41 known internationally important sites for Great Knot for the eastern population, 12 are in **China** (especially Yalujiang, Shuangtaizi estuary and Bohai Bay with more than 10,000 birds during spring 2013 and/or 2014, Z Ma *in litt* 2014), 10 in the **Republic of Korea**, 10 in **Australia**, 5 in the **Russian Federation** (Jaensch 2013), with one each in **Japan**, **Philippines**, **Malaysia** (Kapar Power Station, Selangor, D Bakewell *in litt* 2014) and **Thailand** (Inner Gulf, P. Round *in litt* 2013). For the smaller Arabian Sea population, three known internationally important sites are in west **India** (S. Balachandran *in litt* 2014), two in **United Arab Emirates** and one each in **Oman**, **Iran** and **Saudi Arabia** (Delany *et al.* 2009).

The Great Knot is a regular visitor during winter and spring to the **Philippines** where more than 7,000 individuals or about 2.4% of the world population is recorded overwintering, mainly in coastal wetlands of Negros Occidental (Tibsoc and Ilog- Hilabangan) which is of international importance for Great Knot, and in lower numbers at Olango Island Wildlife Sanctuary, Cebu (DENR-PAWB 2014, WBCP 2011). It is also recorded from 13 other islands: Batan, Cuyo, Loran, Luzon, (Magsalay *et al.* 1989), Masbate, Leyte, Samar, Palawan, Mindanao, Tawi-Tawi, Sibutu, Tres Islas and Tumindao (Dickinson *et al.* 1991, Kennedy *et al.* 2000, WBCP 2014).

The Great Knot is a regular though uncommon non-breeding visitor (October to March) on the entire east coast of **India** and especially the south east coast, including Point Calimere (Ali & Hussain, 1981, Daniel & Balachandran 2002), Chennai (Ali & Ripley 1969), Pulicat Lake (Mohapatra & Rao, 1993) and the Marine National Park, Gulf of Mannar, Tamil Nadu (Balachandran 1997). It is also recorded from Assam, Orissa, the Sundarbans and West Bengal (Balachandran & Sathiyaselvam 2007, Zockler *et al.* 2005) and Andaman Islands (Ali & Ripley 1969). On the west coast, it is recorded in Gujarat (Naik *et al.* 1991) with large numbers recorded in recent years (1500 at Pirotan Island, Uran in Maharashtra (Balachandran, *in litt* 2014) and the Lakshadweep Islands (Ali & Ripley 1969)).

## 2.2 Population

The Great Knot is classified as Vulnerable on the IUCN Red List owing to a rapid population decline caused by the reclamation of non-breeding stopover grounds, and under the assumption that further proposed reclamation projects will cause additional declines in the future (BirdLife International 2014). It was upgraded from Least Concern to Vulnerable in 2010.

The global population (which is monotypic) is now estimated at c.295,000 individuals (based on 2007 census data), though given documented declines the true figure is likely to be lower (Wetlands International 2014, BirdLife International 2014). Two biogeographic populations are recognised, with the main non-breeding population centred around Australasia and Southeast (c.290,000 individuals) and a smaller population along the northern coast of the Arabian Sea (c.5,000 individuals) (Wetlands International 2014).

The population was previously estimated at 380,000 individuals, of which <45% were thought to stage in **Republic of Korea** on northward migration (Wetlands International 2006) and 360,000 winter in **Australia** (Bamford *et al.* 2008). Bamford *et al.* 2008 used data from as far back as 1986 and as such any population decline over this period may not be captured in the estimate.

Reclamation and development of tidal flats in **Republic of Korea** has led to dramatic declines of c.90,000 Great Knots since reclamation in 2006 at Saemangeum, where c 25% of the global population previously staged (Rogers et al. 2006, 2009). Birds were not simply displaced to other sites in Republic of Korea (Moores et al. 2008). Counts in the non-breeding stronghold in north-western **Australia** declined by ~20% in the same period, coinciding with a decline in apparent annual survival of adults. This strongly suggests that most individuals previously using Saemangeum died rather than being displaced (Rogers *et al* 2009).

While there have been no observed declines at the main **Philippine** overwintering wetlands on Negros, and increases in the past decade of up to a 25 times, to 5000 birds, in the Inner Gulf of **Thailand** (P Round *in litt* 2013) and up to five times in **Malaysia** (both Peninsular Malaysia and Sarawak (East Malaysia) (D Bakewell *in litt* 2014), further declines have occurred at smaller staging grounds in **Japan** and at major wintering grounds in **Australia** and also in **India**.

**Australia:** There was a 23.9% decline from 2001 to 2008 in the largest non-breeding site at Eighty-mile Beach (Rogers et al 2008). A separate national analysis discovered a declining trend of 48% over 20 years, with 95% confidence intervals placing the decline rate between 65% and 24% (C. Studds *in litt*. 2014). Wilson et al (2011) estimated an annual decline rate of 4.5% in Moreton Bay, Queensland, between 1992 and 2008, and the species is no longer regular at some sites along the south coast which used to consistently support small numbers (Australasian Wader Study Group database: Birds Australia *in litt*. 2011). A recent survey of significant coastal wetlands in the North and North-East found no evidence that Great Knots have shifted their wintering grounds in Australia (Ray Chatto *pers. com.*).

With an annual survival rate during 2011-2012 of 0.63 and annual breeding output of 0.15, it is predicted that the global population of great knot will halve within four years. Only the immediate provisioning of suitable staging grounds in the Yellow Sea region, during both northward and southward migration, may now help to prevent extinction (Piersma et al in prep).

**India:** at the Marine National Park, Gulf of Mannar, Tamil Nadu, there was a decline of c 60% from 350 in 1985-86 to 140 in 2006-2007 (Daniel & Balachandran 2002) with a recovery to 450 in 2012, perhaps due to a redistribution from sites east of India. Similarly, in recent years, numbers have increased on the East coast (300 at Chilika Lake, 1200 at Point Calimere in 2012). However, numbers remain higher on the west coast with more than 1500 in the Gulf of Kachchh.

**Philippines:** at the Olango Island Wildlife Sanctuary, Cebu, counts since 2005 show a 9% decline with an average mid-winter population per 5-year period 2005-2009 of 650 individuals and 590 individuals for the 5-year period 2010-2014 (Arne Jensen, Wild Bird Club of the Philippines 2014 *in litt.*). Intensified coverage of the internationally important coastal wetlands of Negros Occidental, however, shows a substantial increase in the mid-winter population: from about 3,000 individuals in 2013 to 6,590 individuals in 2014 (DENR-PAWB 2014, Godfrey Jakosalem *pers. comm.* 2014), however, rather than suggesting a possible shift in overwintering grounds, this probably reflects improved count coverage (C Custodio *in litt* 2014).

These data make it clear that the population is declining overall (Moores *et al.* 2008, Amano *et al* 2010; R. Clemens *in litt.* 2010). Given that reclamation in the Yellow Sea is not

restricted to Saemangeum, and many more reclamation projects are proposed within the region (MacKinnon et al 2012), it is reasonable to assume that declines will continue in the future, hence a precautionary decline of 30-49% over 22 years (three generations) is estimated.

### 2.3 Habitat

*Breeding:* The species breeds on plateaus or gentle slopes with montane tundra in the subarctic, at heights of 300-1,600 m (del Hoyo *et al.* 1996).

*Non-breeding:* The species is restricted to coastal habitats, the great majority of the population occurring at sites with extensive tidal flat systems, where the species (a specialised molluscivore) forages mainly on bivalves. These sheltered coastal habitats include inlets, bays, harbours, estuaries and lagoons with large intertidal areas of mud and sandflats, and oceanic sandy beaches with nearby mudflats. It roosts in refuges such as wave-dampened beaches, shallow water in sheltered sites or on salt-flats amongst mangroves during high tides. The species also roosts on sandy spits and islets and occasionally on exposed reefs or rock platforms (del Hoyo *et al.* 1996, Higgins and Davies 1996, Rogers *et al.* 2006). Rarely uses inland wetlands,

*Staging:* estuaries and on intertidal mudflats (Moore 2006, Tomkovich 1997). Also inland wetlands (eg Pong Dam, Himachal Pradesh, India) (S Balachandran *in litt* 2014).

### 2.4 Migrations

This species is a long-distance migrant that largely travels along the coast making few stopovers, but utilising different routes in the autumn and the spring (Higgins and Davies 1996). It breeds from late-May to late-June, departing the breeding grounds in July and arriving on the wintering grounds between August and October. The return migration to the breeding grounds takes place from March to April, although immature non-breeders often remain in the tropical parts of the wintering range for the breeding season. The species forages in large flocks of one hundred to many thousand at favoured sites on passage (del Hoyo *et al.* 1996).

## 3. **Threat data**

### 3.1 Direct threats

In the **Chinese, Democratic People's Republic of Korea** and **Republic of Korea** regions of the Yellow Sea and in **Australia**, especially the east and south, the species is threatened by disturbance (e.g. from off-road vehicles, tourists and hunters) (Tomkovich 1997, Kellin and Qiang 2006). There is also increased disturbance from beach tourism in **India** (Rahmani, *in prep*).

### 3.2 Habitat destruction

The species uses few staging sites in very high concentrations, making it particularly vulnerable to site loss. It is especially threatened by wetland loss and degradation in the Yellow Sea where c.80% of the population stages on northward migration (Barter 2002; Bamford *et al.* 2008; van de Kam *et al.* 2010). Intertidal mudflats in the Yellow Sea have

declined by 65% in 50 years (Murray et al. 2014). In **Republic of Korea**, after the loss of the important Saemangeum stopover area, and almost all of the tidal-flats in Asan Bay and much of Namyang Bay, possibly only five sites nationwide remain internationally important. Of these, only one, the Geum Estuary, currently has a low risk of reclamation, with the other four at risk due to the proposed construction of tidal power plants and barrages, industrial use and urban expansion (Moore 2006).

In the **Chinese, Democratic People's Republic of Korea** and **Republic of Korea** regions of the Yellow Sea the species is also threatened by the degradation and loss of wetland habitats through environmental pollution (e.g. oil contamination of intertidal mudflats) and reduced river flows (Kelin & Qiang 2006, MacKinnon et al 2012).

In the **Philippines** there are threats from increased mangrove forestation at its feeding areas within the tidal mudflats of Negros Occidental, and general deterioration of the coastal environment due to massive fishing activities including gathering of molluscs and bivalves (Godfrey Jakosalem per comm. 2014).

In **India** there are threats from the development of ports in Orissa and Andhra Pradesh, the potential habitat degradation/loss in the Gulf of Mannar from the Sethu Samudhram Canal Project, the increased risk of oil pollution due to oil exploration on the Gujarat coast (Balachandran & Sathiyaselvam in prep at Chilika Lake habitat loss due to the extension of prawn farms and invasion of halophytic plants and grasses (Balachandran *et al* 2014) and general deterioration of coastal environment due to pollution, litter and fishing activities (Rahmani *in prep*).

Threats in **Australia** include local mangrove encroachment eg in Roebuck Bay (Australian Government 2009, D Rogers *in litt* 2014) and, especially in the east and south, habitat loss and degradation from pollution, changes to the water regime and invasive plants (Garnett *et al* 2011).

### 3.3 Indirect threats

The species is also potentially threatened by climate change because it has a geographically bounded distribution: its global distribution is restricted to within c.10° latitude from the polar edge of the continent and within which 20-50% of current vegetation type is projected to disappear under doubling of CO<sub>2</sub> levels (BirdLife International unpublished data). Sea-level rise also represents a looming threat, with great knot projected to lose between 15% and 60% of its internationally important habitat, and 20% and 90% of its remaining population under sea-level rise of 50cm and 300cm respectively (Iwamura et al. 2013).

### 3.4 National and international utilization

It is hunted in many countries on migration (Barter *et al.* 1997; Ming *et al.* 1998), including **India**, for example it is trapped along with other waders by *Narikurvas* of the Tamil Nadu coast (Balachandran 1999).

In **China** hunting has been a serious threat to great knots and other shorebirds at some sites in east China (e.g. Chongming Island).. In the Yangtze River mouth in the early 1900s 33 000 – 63 000 shorebirds were being hunted by local farmers annually using clap nets (Tang & Wang 1995). Great Knot was the most common species in hunting catches varying between

22% - 30% in 1991 and 1992 (Barter et al 1997). At Chongming Dao in 1996 hunting levels were similar (Barter et al 1997). Hunting, using clap nets, was also reported from Hunaghe Delta in the early 1990s (Wang et al. 1991, 1992) with an estimated annual catch of 30 000 shorebirds in 1991. However, with the exception of Chongming Dao, no hunting was detected during extensive surveys of the Chinese intertidal areas between 1996 and 2001 (Barter 2002).

In contrast to clapnetting, mist nets on ponds (and some tidal flats) have increased - probably more to prevent predation of the produce in the ponds rather than to catch birds for sale (D Watkins *in litt* 2014). In addition foraging shorebirds at low tide are sometimes bycatch in nets set for fish, e.g. in Bohai Bay (D Rogers *in litt* 2014).

Although there is still illegal hunting at some sites, overall the numbers of hunters has decreased over the past three decades and it is not a major threat to shorebirds compared to the rapid loss and degradation of wetland habitats (Z Ma *in litt* 2014).

#### **4. Protection status and needs**

##### **4.1 National protection status**

Protected nationally in **Australia** through listing as a migratory and marine species on the Environment Protection and Biodiversity Conservation Act 1999. Listed as Vulnerable in New South Wales, Northern Territory and Western Australia; Rare in South Australia, and Threatened in Victoria.<sup>1</sup> Also protected under Australian State and Territory legislation.

Protected in the **Philippines** under Republic Act No. 9147 the Wildlife Resources Conservation and Protection Act of 2001.

Protected in **India** under the Indian Wildlife Protection Act, 1972 (as modified in 2006). Occurs mostly within protected areas (Gulf of Mannar, Point Calimere, Chilika Lake, Pulicat Lake, Pallikaranai Marsh (Chennai), Bhitarkanika National Park, Sundarbans, and Gulf of Kachchh including Pirotan Island).

##### **4.2 International protection status**

This species was uplisted to Vulnerable in 2010 by BirdLife International (2010) and IUCN owing to a recent and ongoing decline of 30-49% in three generations, caused by the reclamation of non-breeding stopover grounds, and under the assumption that further proposed reclamation projects will cause additional declines in the future.

The Great Knot is currently listed on Column A of Table 1 of the action plan of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA).

##### **4.3 Additional protection needs**

4.3.1 Protect all remaining unprotected important sites for this species, particularly the remaining tidal flats in the Yellow Sea.

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<sup>1</sup> [http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon\\_id=862](http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=862).



- 4.3.2 Update Protected Area management planning to increase the security of the key staging habitat for Great Knot around the Yellow Sea.
- 4.3.3 Enhance the capacity of Protected Area staff around the Yellow Sea to implement appropriate management for the staging habitats used by Great Knot.
- 4.3.4 Restore habitats near reclaimed wetland sites to offset some or all of the existing and future loss.
- 4.3.5 Manage roosting and feeding sites in the species' non-breeding range to minimise disturbance (Rogers et al. 2006).
- 4.3.6. Give legal protection to the species in all Range States, drawing the attention of hunters to the issue of look-alike species.
- 4.3.7 Ensure waterbird survey and monitoring programmes are sufficient to monitor trends and shifts in distribution of the great knot population, to identify any unknown key non-breeding areas and to assess effectiveness of above management actions.
- 4.3.8 Undertake ringing, colour marking and tracking studies, for example in the Philippines and India, to improve understanding of migratory routes and help identify key sites.

## **5. Range States**

AUSTRALIA, BANGLADESH, Brunei, China, France (New Caledonia), INDIA, Indonesia, IRAN, Japan, Kuwait, Malaysia, Myanmar, Democratic People's Republic of Korea, Oman, PAKISTAN, Papua New Guinea, PHILIPPINES, Russian Federation, SAUDI ARABIA, Seychelles, Singapore, Republic of Korea, SPAIN, Sri Lanka, Thailand, Timor-Leste, United Arab Emirates, Vietnam. And as a vagrant to Bahrain, DENMARK, Djibouti, GERMANY, IRELAND, ISRAEL, MAURITIUS, Micronesia, MOROCCO, NETHERLANDS, NEW ZEALAND, NORWAY, PALAU, Qatar, UNITED KINGDOM, United States of Americas (Guam, North Mariana Islands), Yemen. (CMS Parties are shown in capital letters.).

## **6. Comments from Range States**

## **7. Additional remarks**

## **8. References**

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