4. SPECIES ACCOUNTS

4.1 Introduction to the Species Accounts

The species accounts present the information collected on each species in the East Asian - Australasian Flyway. They follow a common format with information presented in sections as outlined below. The aim of this introduction is to assist the reader to find and interpret the information presented in the species accounts. The species accounts appear in taxonomic order based on Christidis and Boles (1994).

Summary Box

The Summary Box appears at the beginning of each species account and summarises key information on population size. Three values are presented for the EAA Flyway (abbreviated to 'Flyway' in the Summary Box):

- *Estimate*. The Population Estimate for that species in the EAA Flyway, as generated by the process detailed in the Methods section.
- *1% threshold*. Derived from the Estimate, this value was used to identify important sites. Counts that exceeded this threshold were considered to be 'internationally important'. The calculation and use of 1% threshold values are discussed in the Methods section.
- *Staging threshold*. Also derived from the Population Estimate, this value was used to identify important staging sites during migration periods.

In addition to the three Flyway values, the Summary Box includes a global estimate for each species, derived from the population estimates presented by Delany and Scott (2002).

Population

The Population section provides information on the species, including:

- Whether the species is monotypic, or whether subspecies have been recognised.
- The proportion of the species' (or subspecies') population that is thought to migrate via the EAA Flyway.
- A simplified description of the breeding and non-breeding distribution of the species and, where relevant, subspecies.
- The conservation status of the species, where applicable (Birdlife International 2001).

Unless otherwise stated, the information provided in the Population section was sourced from Hayman *et al.* (1986), Higgins and Davies (1996) and Delany and Scott (2002). In order to reduce repetition these references are not cited in the Population section.

Data

The Data section provides information as to how our data compare with other sources, and highlights any major trends that are evident. This section may include:

- A statement that summarises the comparison of our estimate to that of Delany and Scott (2002);
- A statement that summarises the comparison of our estimate to other estimates;
- A rationale to any major changes from the estimates of Delany and Scott (2002);
- Comments on broad trends in the population such as the distribution of the species in the non-breeding period.

Important Sites

This section presents the internationally important sites for the population across its annual cycle. It highlights the regions within the Flyway which are important for the species. Site-specific maximum counts, and an indication of importance of these sites during the annual cycle, are provided in the Table of Sites of International Importance for each species (see below).

Migration

This section discusses patterns of migration based on the distribution of important sites for each species across the year.

Table of Sites of International Importance

This Table lists internationally important sites for the species. Sites are presented in decreasing order of the maximum count. Explanations of the headings used in the table follow:

Site Code: site number used in the figure showing sites of international importance.

Site Name: the site name (in English).

Country: three letter country code.

Max. Count: highest count for the site.

Date: the date that the highest count was made. Occasionally a date of the highest count was not provided in the reference source, in which case 'NA' (Not Available) appears in place of a date.

SM: southward migration period.

NB: non-breeding period.

NM: northward migration period.

B: breeding period.

Ref.: reference cited for maximum count.

A tick mark (✓) under the headings of SM, NB, NM, or B indicates that species counts have exceeded the relevant threshold for international importance at least once during the designated period at this site.

Rows in the table listing sites with counts that only meet the staging criterion are shared

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Figure(s) of Sites of International Importance

This figure(s) shows the distribution of sites of international importance for that species. Both non-breeding and staging sites are shown (differentiated by the size of the site marker as defined in the figure key). The numbers adjacent to site markers refer to the respective site in the Table of Sites of International Importance. The breeding range shown was usually derived from del Hoyo *et al*. (1996), and other authors in a few cases as cited.

Figure of Non-breeding Distribution

This figure is a map that shows the distribution of a species in the non-breeding period (December to February). It is presented only for species for which a “Sum Country Estimate” appears in Table 3.1. Graded shading has been used to indicate the approximate percentage of the Population Estimate that occurs in each country during this period. The percentage range that each shade represents is indicated on the figure key.

Common Snipe

Gallinago gallinago

Flyway	Estimate:	**100 000 – 1 000 000**
	1% threshold:	1 000
	Staging threshold:	250
Global	Delany and Scott (2002):	5 670 000 – 9 470 000

Population

There are three subspecies of the Common Snipe: *G. gallinago delicata*, *G. g. faroeensis* and *G. g. gallinago*. Only *G. g. gallinago* occurs in the EAA Flyway. *G. g. gallinago* has a pan-Palaearctic breeding distribution and migrates in the non-breeding period to Africa, and central and south-eastern Asia.

Data

The Common Snipe is infrequently recorded in waterbird surveys because it is cryptic, its preferred habitats of swamps and flooded grasslands (including ricefields) are under-surveyed, and it is difficult to distinguish in the field from Swinhoe's, Pin-tailed and Japanese Snipes. Therefore, many counts of these four species must be regarded with caution. Count data were poor and it was not possible to assign the species a Flyway Population Estimate, so the range proposed by Delany and Scott (2002) has been retained.

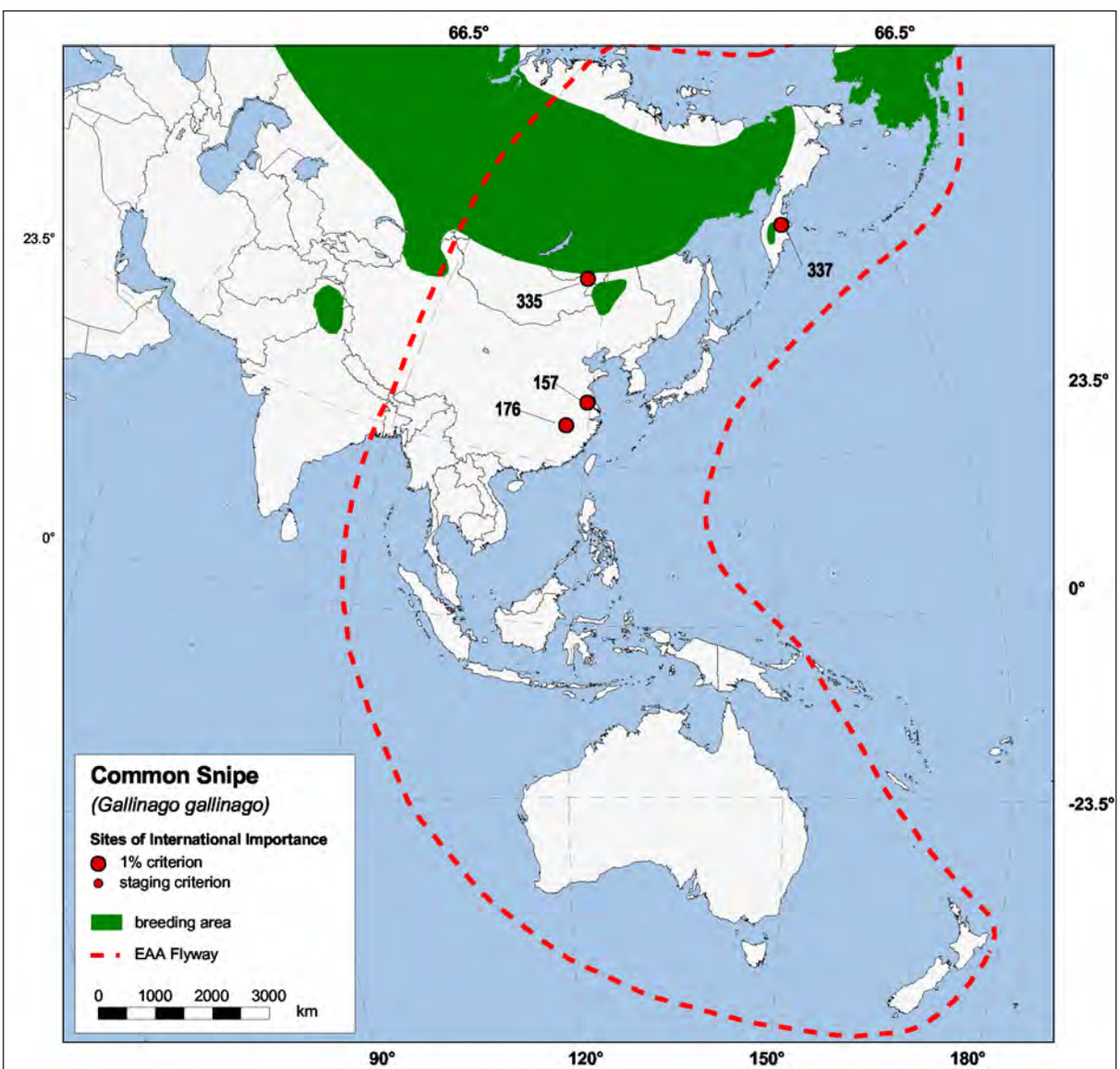

Figure 4.1 Common Snipe – sites of international importance. Numbers refer to the respective site in Table 4.1.

Important Sites

Only four sites have been identified that exceed the 1% threshold, with two qualifying counts in Russia (the number from Daursky Nature Reserve being an estimate) and two in China Table 4.1). The Russian counts were from late during northward migration and within, or close to, the breeding range of the species (del Hoyo *et al.* 1996). The Chinese counts were from the non-breeding period.

No sites exceeded the staging threshold.

Migration

Data were insufficient to enable comment on the migratory paths. Important sites were inland rather than coastal.

Table 4.1 Common Snipe - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
335	Daursky Nature Reserve	RUS	30,000	1/06/1995	.	.	✓	.	71
337	Kharchinskoe Lake	RUS	5,000	23/05/1999	.	.	✓	.	67
176	Poyang Hu National Nature Reserve	CHI	3,900	23/01/1988	.	✓	.	.	169
157	Gaoyou Hu/Shabo Hu	CHI	3,800	16/01/1990	.	✓	.	.	169

Japanese (Latham's) Snipe

Gallinago hardwickii

Flyway	**Estimate:**	**36 000**
	1% threshold:	**360**
	Staging threshold:	**90**
Global	**Delany and Scott (2002):**	**25 000 – 100 000**

Population

The monotypic Japanese Snipe occurs only in the EAA Flyway, breeds in Japan and parts of the Russian Far East and migrates to eastern Australia for the non-breeding period (Nechaev 1994).

Data

The Flyway population estimate of 36 000 is based on studies carried out in the mid-1980s on the breeding grounds in Japan (Naarding 1986). The estimates fall within the range of 25 000 – 100 000 proposed by Delany and Scott (2002). It was not possible to revise this estimate because, as with other snipe, the species is poorly surveyed and there were few new count data.

Until 1985 the species was hunted in parts of Australia with up to 10 000 birds taken annually, including at least 6 000 in 1984 (Watkins 1993). The estimate of 36 000 was generated shortly

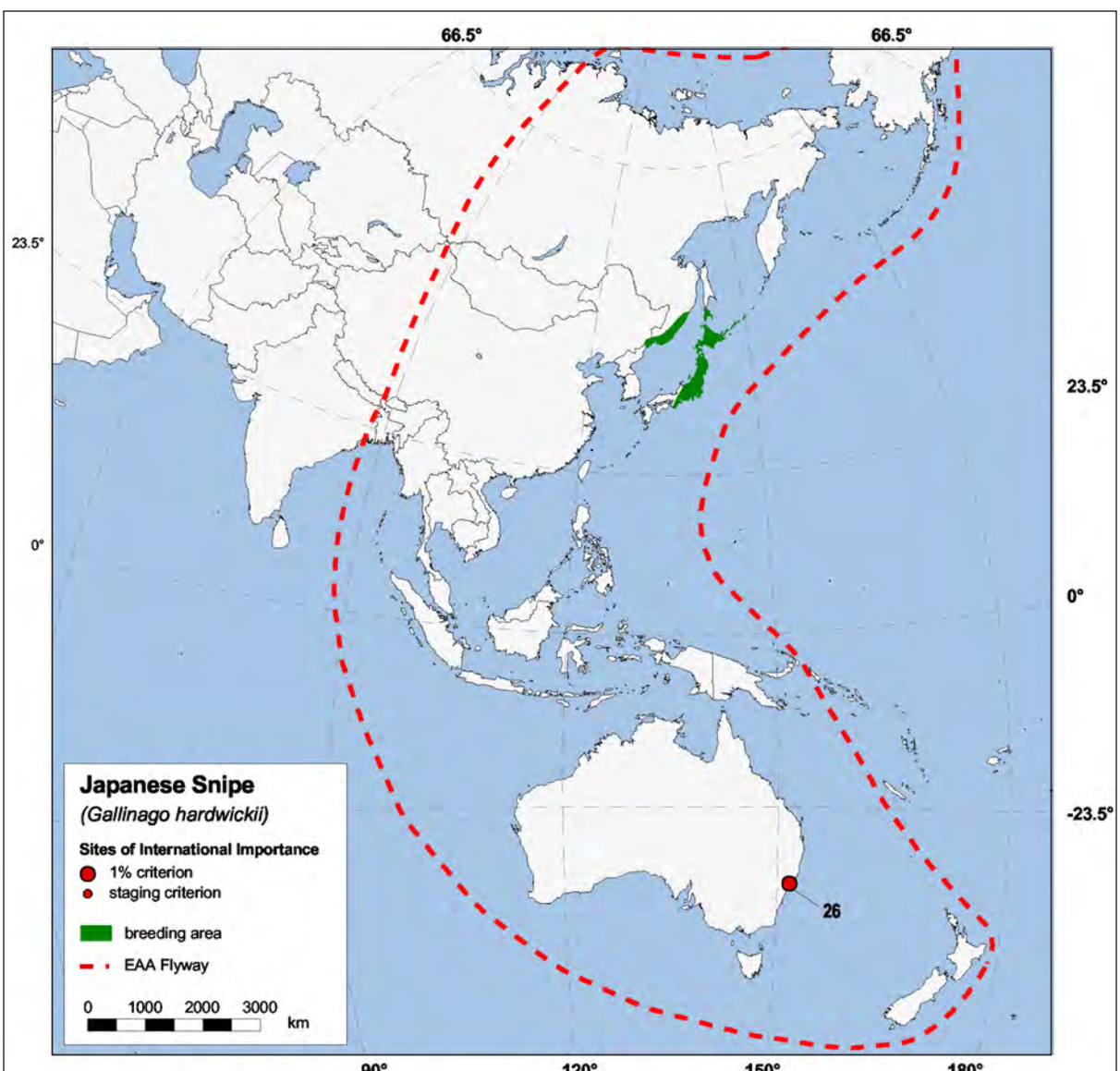

Figure 4.2 Japanese Snipe – sites of international importance. Numbers refer to the respective site in Table 4.2.

after the cessation of hunting and therefore the population may have increased. In addition, the estimate does not account for birds breeding in the Russian Far East, where Nechaev (1994) reports at least 500 pairs from Sakhalin Island.

Important Sites

Only one site exceeded the 1% threshold.

Naarding (1983) refers to a density of 50 birds/ha in Seaford Swamp (Australia) in February 1983, with a highest single count of 200 (January 1979). Given the cryptic nature of Japanese Snipe, numbers may have been higher than this, but the wetland is reported to have declined in value for the species since the reduction of sewage outfall and as a result of nearby earthworks (P. Lansley, pers. comm.).

Migration

Migration of the Japanese Snipe from Japan to south-eastern Australia is thought to be via New Guinea and north-eastern Australia (Hayman *et al.* 1986, Higgins and Davies 1996). The scarcity of records of the species on southward migration outside the Australasian region suggests that it may fly non-stop from Japan. Weight-gain studies in south-eastern Australia indicate that birds require staging in northern Australia prior to northward migration (Lane 1987), but such areas have yet to be identified.

Table 4.2 Japanese Snipe - sites of international importance.

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
26	Cedar Hill and Hexham Swamp	AUS	500	1/02/1998	.	✓	.	.	156

Swinhoe's Snipe

Gallinago megala

Flyway	**Estimate:**	**25 000 – 100 000**
	1% threshold:	**250**
	Staging threshold:	**62**
Global	**Delany and Scott (2002):**	**25 000 – 100 000**

Population

Swinhoe's Snipe is monotypic with a breeding range in central and southern Siberia and, formerly, eastern Siberia. The non-breeding range extends from India to New Guinea and northern Australia, but it is thought that the entire population of Swinhoe's Snipe utilises the EAA Flyway.

Data

As with other snipe species, Swinhoe's Snipe is poorly counted and therefore the population range of Delany and Scott (2002) has been retained.

Important Sites

No sites exceeded the 1% threshold and only one site exceeded the staging threshold.

Migration

Within the EAA Flyway, migration is believed to be via the east coast of China, where one site exceeded the staging threshold (Higgins and Davies 1996).

Table 4.3 Swinhoe's Snipe - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
191	Yancheng National Nature Reserve	CHI	76	21/11/1991	✓	.	.	.	169

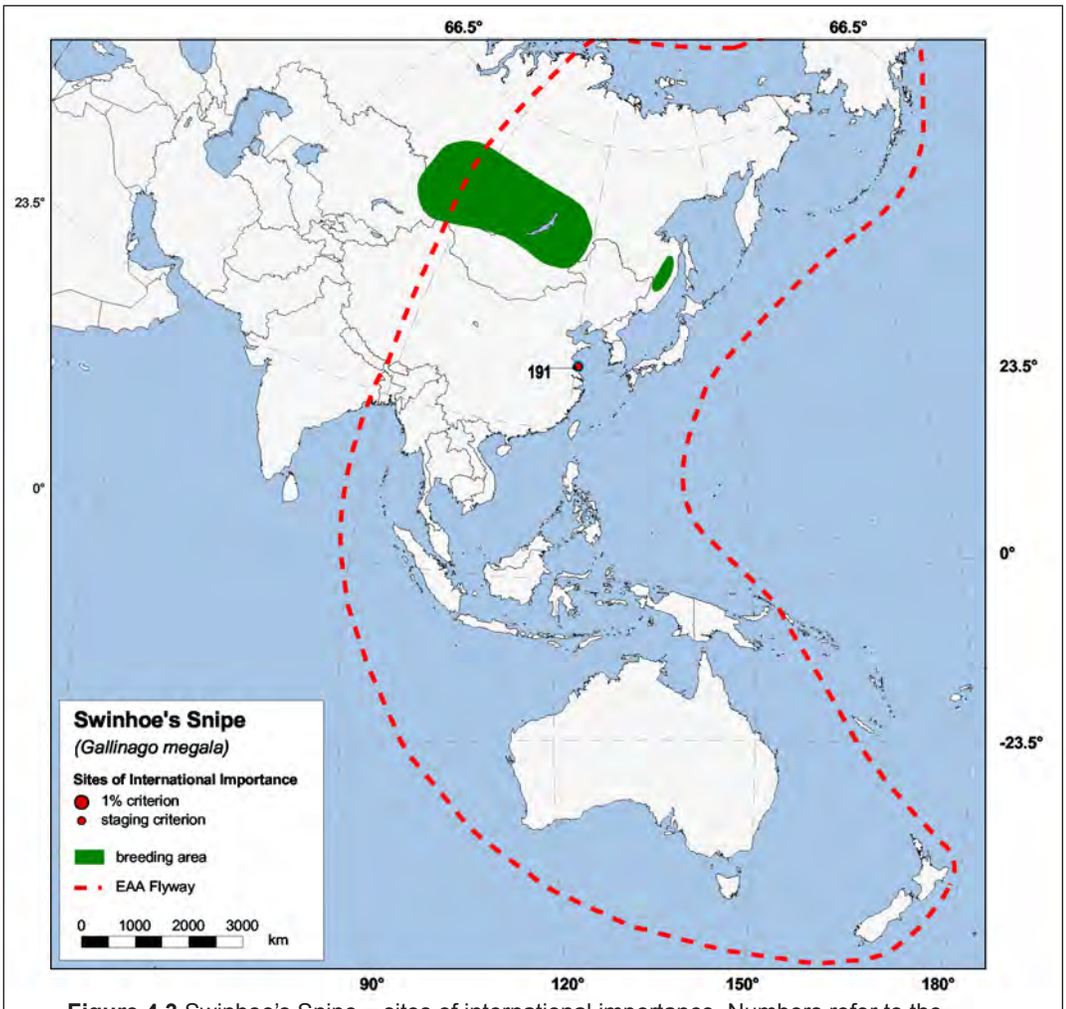

Figure 4.3 Swinhoe's Snipe – sites of international importance. Numbers refer to the respective site in Table 4.3.

Solitary Snipe

Gallinago solitaria

Flyway	Estimate:	**10 000 – 100 000**
	1% threshold:	100
	Staging threshold:	25
Global	Delany and Scott (2002):	10 000 – 110 000

Population

Two subspecies of the Solitary Snipe are recognised but Hayman *et al.* (1986) consider their validity to be uncertain. *G. s. solitaria* is widespread, breeding in mountainous eastern Asia with at least a proportion of the population undergoing migration. The breeding range of *G. s. japonica* is unknown but it is a non-breeding visitor to Japan. Both subspecies are therefore migratory within the EAA Flyway, although a proportion of *G. s. solitaria* is either sedentary or migrates through central Asia and India.

Data

Data were not adequate to calculate a Flyway population estimate for the Solitary Snipe and therefore the population range of Delany and Scott (2002) has been retained.

Important Sites

Only two sites exceeded the 1% threshold. The site in Bangladesh may support birds that migrate via the Central Asian Flyway rather than the EAA Flyway, but given the lack of information on the species, it is valuable to highlight any potentially important sites. There were no

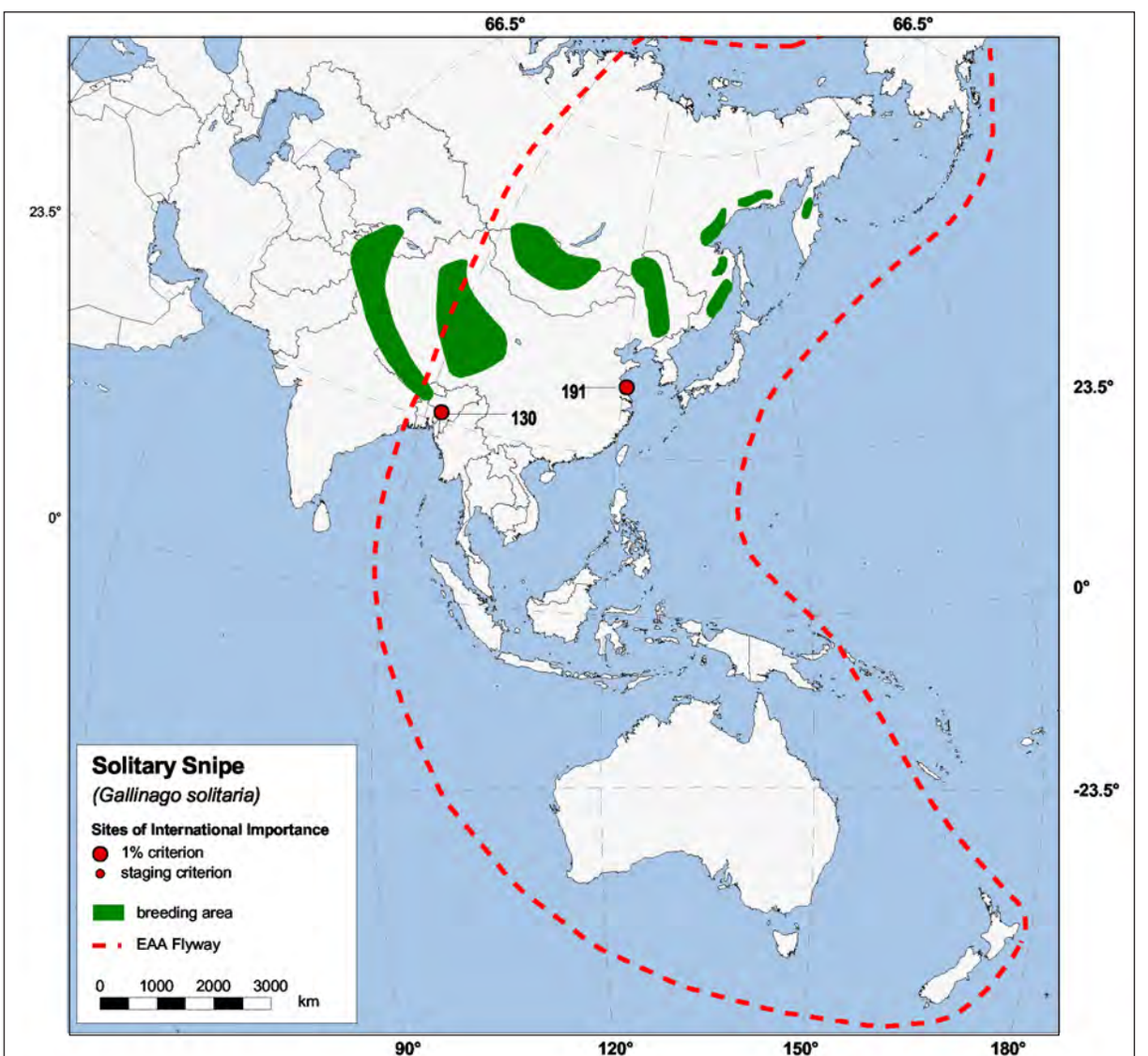

Figure 4.4 Solitary Snipe – sites of international importance. Numbers refer to the respective site in Table 4.4.

important sites in Japan despite the recognition of a race that is a non-breeding period migrant to that country.

No sites exceeded the staging threshold.

Migration

The Solitary Snipe is an altitudinal migrant with only some birds undertaking extensive latitudinal movements (Hayman *et al.* 1986). Count data were insufficient to enable comment on migratory pathways.

Table 4.4 Solitary Snipe - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
130	Hakaluki Haor	BAN	175	15/01/1990		✓	.	.	169
191	Yancheng National Nature Reserve	CHI	157	8/01/1990	.	✓	.	.	169

Pin-tailed Snipe

Gallinago stenura

Flyway	Estimate:	**25 000 – 1 000 000**
	1% threshold:	250
	Staging threshold:	62
Global	Delany and Scott (2002):	50 000 – 2 000 000

Population

The monotypic Pin-tailed Snipe breeds over a broad area of Arctic and boreal Russia, with birds in the west of this range migrating south via the Central Asian Flyway across the Himalayas, and birds in the east migrating via the EAA Flyway. There is probably a mixing of birds of these Flyways in areas such as Bangladesh.

Data

As with other snipe species, count data were inadequate to propose a Flyway Estimate, so the range proposed by Delany and Scott (2002) has been retained. Count data suggest that most of the EAA Flyway population occurs in China and south-eastern Asia during the non-breeding period (Table 4.5).

Important Sites

Sites that met the 1% threshold for Pin-tailed Snipe were in China and Thailand in the non-breeding period, and Russia on northward

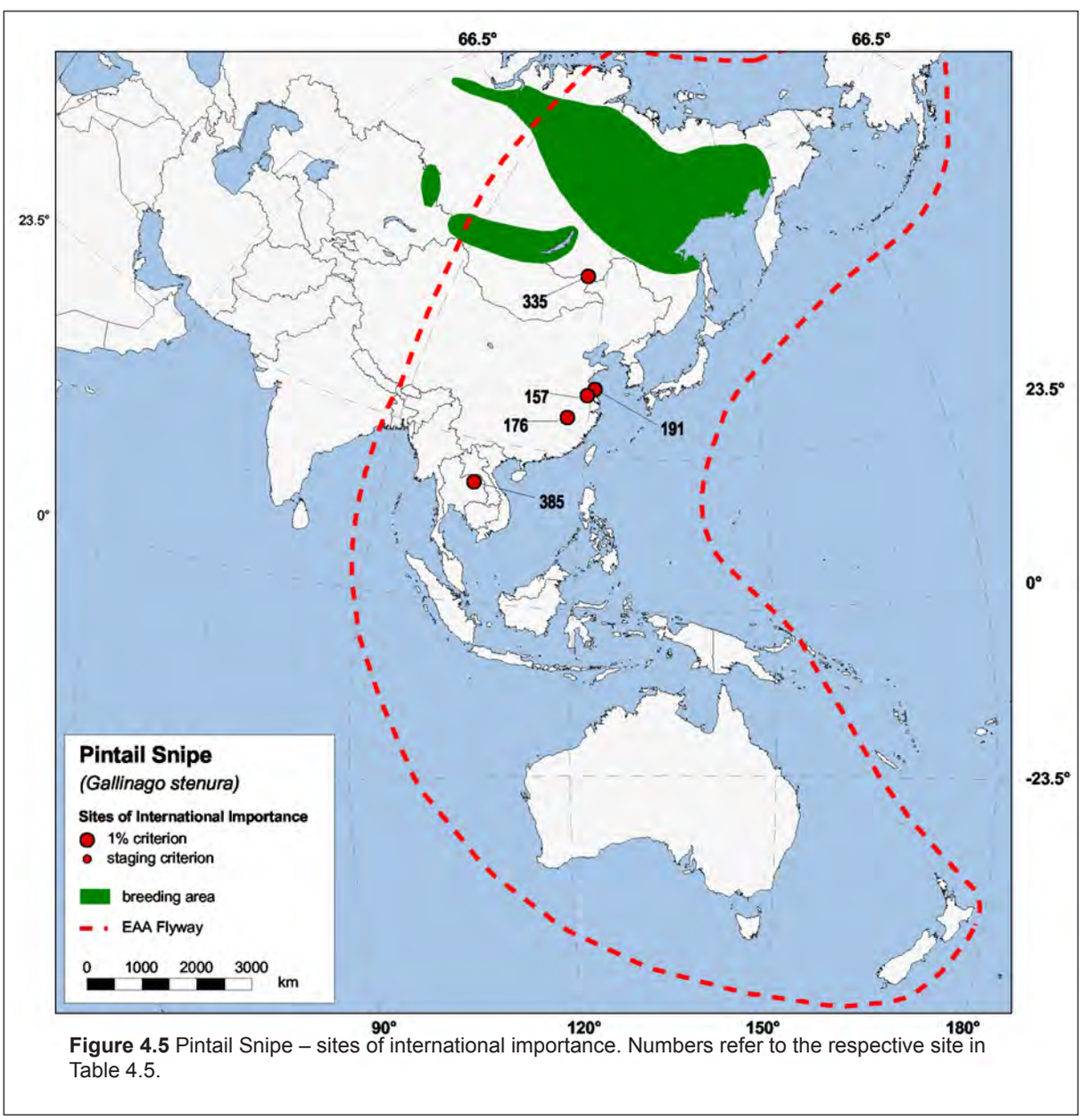

Figure 4.5 Pintail Snipe – sites of international importance. Numbers refer to the respective site in Table 4.5.

migration. Important sites have also been identified in India, but these represent Central Asian Flyway birds.

No sites met the staging threshold.

Migration

Pin-tailed Snipe are widely reported in eastern Asia during the migration period, suggesting that the species moves progressively rather than undertaking long migratory flights (Higgins and Davies 1996).

Table 4.5 Pin-tailed Snipe - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
176	Poyang Hu National Nature Reserve	CHI	4,800	23/01/1988	.	✓	.	.	169
335	Daursky Nature Reserve	RUS	3,000	1/06/1995	.	.	✓	.	71
191	Yancheng National Nature Reserve	CHI	1,114	8/01/1990	.	✓	.	.	169
157	Gaoyou Hu/Shabo Hu	CHI	800	16/01/1990	.	✓	.	.	169
385	Nong Han Kumphawapi	THA	250	6/01/1989	.	✓	.	.	169

Eurasian Woodcock

Scolopax rusticola

Flyway	Estimate:	**25 000 – 1 000 000**
	1% threshold:	250
	Staging threshold:	62
Global	Delany and Scott (2002):	15 025 000 – 16 000 000

Population

Several woodcock species occur in the EAA Flyway, but most are sedentary and some are island endemics. The Eurasian Woodcock, however, has a broad breeding distribution from western Europe to eastern Asia, with a non-breeding distribution from northern Africa to south-eastern Asia.

Data

Delany and Scott (2002) estimate a large global population size of >15 000 000. Count information for the EAA Flyway is limited and therefore a broad population range has been proposed.

Important Sites

Two sites exceeded the 1% threshold. The Daursky Nature Reserve (Russia) may be a breeding and/or staging area, while Yancheng National Nature Reserve (China) is important in the non-breeding period. No sites exceeded the staging threshold.

Migration

A poorly surveyed species that would appear to spend the non-breeding period in coastal eastern Asia.

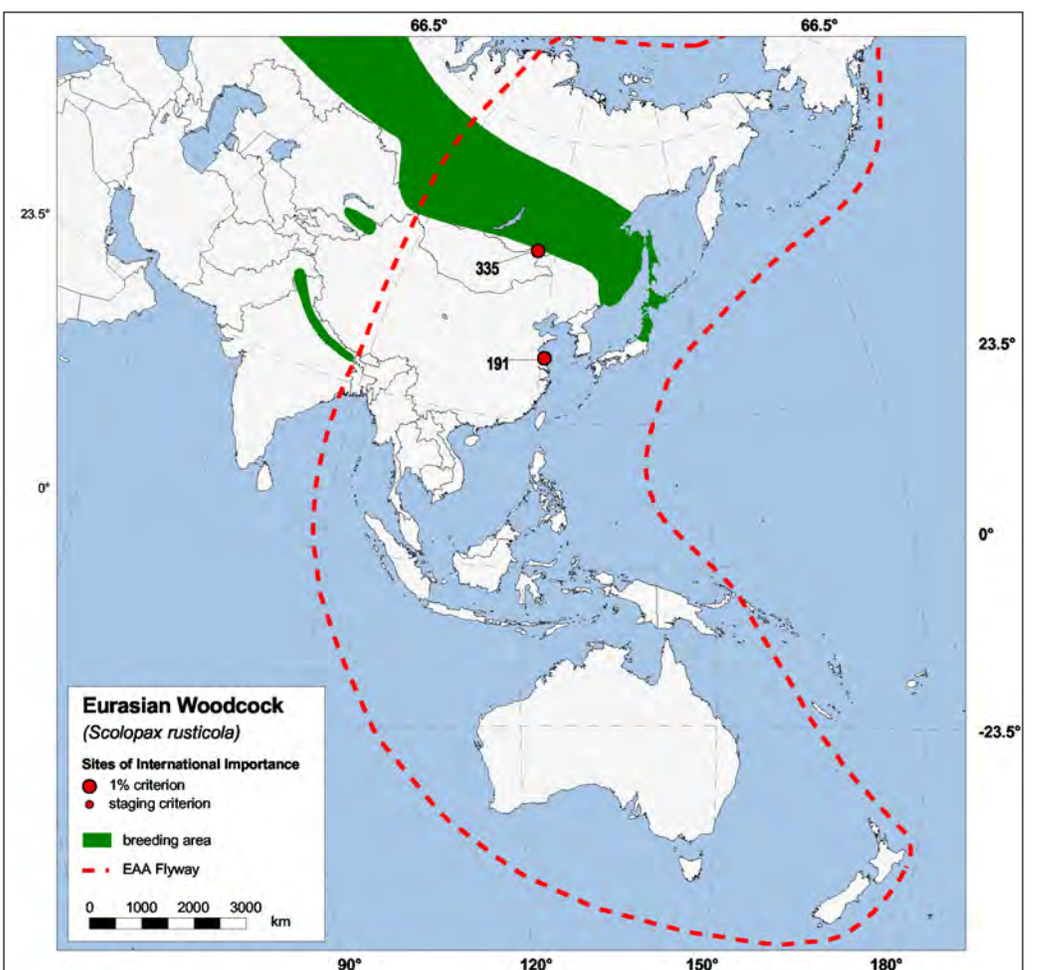

Figure 4.6 Eurasian Woodcock – sites of international importance. Numbers refer to the respective site in Table 4.6.

Table 4.6 Eurasian Woodcock - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
335	Daursky Nature Reserve	RUS	1,300	1/06/1995	.	.	✓	.	71
191	Yancheng National Nature Reserve	CHI	520	6/01/1991	.	✓	.	.	169

Black-tailed Godwit

Limosa limosa

Flyway	Estimate:	**160 000**
	1% threshold:	1 600
	Staging threshold:	400
Global	Delany and Scott (2002):	561 000 – 751 000

Population

There are three subspecies of the Black-tailed Godwit with *L. l. melanuroides* confined to the EAA Flyway. This subspecies accounts for approximately 20% of the global population of the species. *L. l. melanuroides* breeds in eastern Siberia, and during the non-breeding period occurs in south-eastern Asia and Australia. *L. l. melanuroides* is not believed to occur in Bangladesh and India, with Black-tailed Godwits in this region being *L. l. limosa* of the Central Asian Flyway.

Data

The population estimate has not changed from that of Delaney and Scott (2002) and Watkins (1993). During the non-breeding period the majority of birds were in Australia and Indonesia (Table 4.7), where MacKinnon (1988) considered it to be the most numerous shorebird.

Important Sites

Most of the 11 sites that were important during the non-breeding period were in northern and north-eastern Australia. Other important non-breeding period sites were in China, Indonesia, Malaysia, Thailand and Vietnam. Further survey work in Indonesia is anticipated to document additional important sites.

Sites that exceeded the 1% threshold during migration periods were in Vietnam, Indonesia, Thailand, Malaysia, China, South Korea and Russia. Only sites in China, South Korea and Russia exceeded the staging threshold.

Migration

The distribution of important sites is consistent with current understanding of the movements of Black-tailed Godwits in the EAA Flyway. On southward migration, the Moroshechnaya Estuary region is important, with an estimated 10 000 birds passing through the site on migration (Gerasimov and Gerasimov 1999). The birds also pass through Japan (Hanawa 1985) and the Yellow Sea (Barter 2002), with large numbers on passage in Thailand (Legakul and Round 1992) and the west coast of Malaysia (Medway and Wells 1976). In general, it appears that southward migration occurs through sites along the coast of the Russian Far East, and then via sites around the Yellow Sea to south-eastern Asia and Australia.

On northward migration, locations such as Vietnam (Scott 1989) and Hong Kong (Chalmers 1986) are used. However no important sites are known from the south-eastern mainland coast of China (Gao Yuren 1991). The Yellow Sea is as important as on southward migration, with almost 50 000 birds estimated to pass through the region in both migration periods with the remaining birds traversing inland China (Barter 2002). Northward migration onto the breeding areas may proceed from the Yellow Sea on a broad front. More northern coastal sites, like Moroshechnaya Estuary, may still be frozen at this time and numbers of Black-tailed Godwits are low (Gerasimov and Gerasimov 1999a).

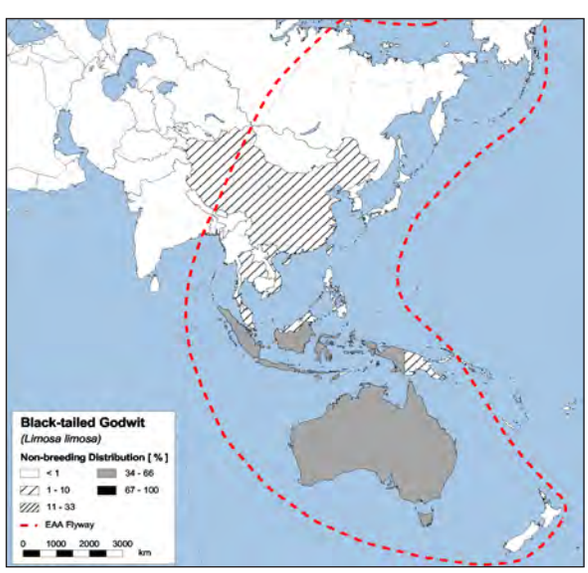

Figure 4.7 Black-tailed Godwit – non-breeding distribution.

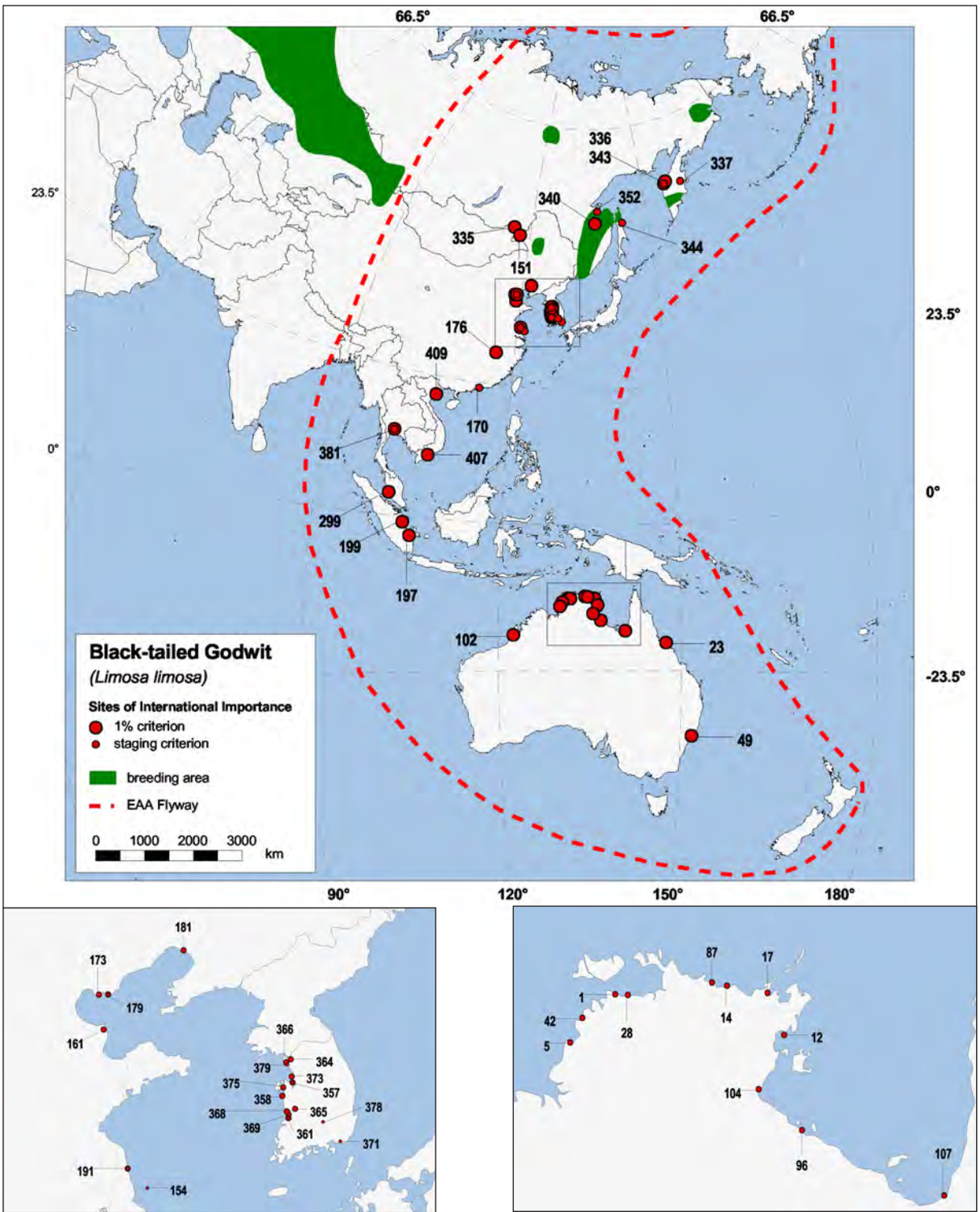

Figure 4.8 Black-tailed Godwit – sites of international importance. Numbers refer to the respective site in Table 4.7.

Table 4.7 Black-tailed Godwit - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
197	Banyuasin Delta	INO	30,000	4/08/1985	✓	✓	✓	.	44, 158, 169
107	SE Gulf of Carpentaria	AUS	26,971	1/03/1999	✓	✓	✓	.	51, 49, 49
357	Asan Bay	SKO	18,282	8/05/1998	✓	.	✓	.	116, 116
199	K. Tungal to T. Djabung coast	INO	12,800	31/07/1985	✓	.	.	.	44

Table 4.7 (cont.) Black-tailed Godwit - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
364	Han River	SKO	10,500	1/05/2000	.	.	✓	.	141
343	Moroshechnaya River Estuary	RUS	10,000	15/08/1990	✓	.	✓	.	63, 63
369	Mankyung Estuary	SKO	8,008	1/09/1998	✓	.	.	.	180
335	Daursky Nature Reserve	RUS	8,000	1/06/1995	.	.	✓	.	71
102	Roebuck Bay	AUS	7,374	2/12/1990	.	✓	.	.	8
161	Huang He National Nature Reserve	CHI	7,196	18/04/1997	.	.	✓	.	181
173	North Bo Hai Wan	CHI	6,471	2/05/2002	.	.	✓	.	20
87	Nungbalgarri Creek	AUS	6,350	19/02/1984	.	✓	.	.	8
375	Seosan	SKO	6,006	1/05/1998	.	.	✓	.	180
17	Buckingham Bay	AUS	6,000	25/03/1992	.	.	✓	.	40
96	Port McArthur	AUS	5,230	NA	.	.	.	.	130
336	Khairyuzova Bay	RUS	5,000	23/07/1983	✓	.	.	.	109
409	Xuan Thuy Reserve	VIE	5,000	3/05/1996	.	.	✓	.	126
14	Boucat Bay	AUS	5,000	25/03/1999	.	.	✓	.	40
49	Hunter Estuary	AUS	4,000	NA	.	✓	.	.	149
12	Blue Mud Bay	AUS	4,000	15/09/1996	✓	.	.	.	40
358	Cheonsu Bay	SKO	3,935	12/05/1996	.	.	✓	.	103
104	Roper River area	AUS	3,015	NA	.	✓	.	.	59
366	Kanghwa Island	SKO	2,915	1/09/1997	✓	.	.	.	180
361	Dongjin Estuary	SKO	2,750	1/09/1998	✓	.	✓	.	18, 117
299	Pantai Rasa Sayang	MAL	2,356	1/12/1986	.	✓	.	.	120
181	Shuangtaizihekou N. N. Reserve	CHI	2,070	7/09/1999	✓	.	.	.	18
23	Cape Bowling Green	AUS	2,058	13/12/1996	.	✓	.	.	77
368	Kum Estuary	SKO	2,049	6/05/1998	.	.	✓	.	116
373	Namyang Bay	SKO	2,020	1/05/2001	.	.	✓	.	180
151	Dalai Hu National Nature Reserve	CHI	2,000	15/04/1996	.	.	✓	.	161
1	Adelaide River Floodplain	AUS	2,000	16/07/1996	.	.	.	✓	40
179	Shi Jiu Tuo/Daqing He	CHI	1,994	23/04/2002	✓	.	✓	.	134, 47
28	Chambers Bay	AUS	1,960	NA	.	.	.	.	130
340	Lake Evoron	RUS	1,948	10/08/1988	✓	.	.	.	129
381	Inner Gulf of Thailand	THA	1,825	15/01/2000	.	✓	✓	.	133, 57
176	Poyang Hu National Nature Reserve	CHI	1,795	1/12/1988	.	✓	.	.	120
365	Hungwun River	SKO	1,701	1/05/1997	.	.	✓	.	117
42	Fog Bay and adjacent islands	AUS	1,700	NA	.	.	.	.	40
191	Yancheng National Nature Reserve	CHI	1,686	15/10/1995	✓	.	✓	.	164, 120
5	Anson Bay, south	AUS	1,600	NA	.	.	.	.	40
407	Hoa Trinh	VIE	1,600	20/12/2000	.	✓	.	.	118
337	Kharchinskoe Lake	RUS	1,355	23/05/1999	.	.	✓	.	67
154	Dongsha Islands	CHI	1,354	1/09/1997	✓	.	.	.	162
379	Yong Jong Island	SKO	800	1/09/1992	✓	.	.	.	58
352	Tugurskiy Bay	RUS	680	10/07/1990	✓	.	.	.	129
371	Nakdong Estuary	SKO	450	1/09/1983	✓	.	.	.	141
378	Wolgwang	SKO	450	1/09/1993	✓	.	.	.	117
170	Mai Po Marshes	CHI	450	1/05/2001	.	.	✓	.	120
344	Nabilsky Bay	RUS	400	19/07/1986	✓	.	.	.	123

Bar-tailed Godwit

Limosa lapponica

Flyway	Estimate:	**325 000**
	1% threshold:	3 250
	Staging threshold:	812
Global	Delany and Scott (2002):	1 060 000 – 1 110 000

Population

Two subspecies of the Bar-tailed Godwit are recognised in the EAA Flyway: *L. l. menzbieri* (*L. l. anadyrensis* in Delany and Scott 2002) that breeds in northern central Russia, and *L. l. baueri* that breeds in eastern Russia and Alaska. A third subspecies, *L. l. lapponica*, breeds in northern Europe and north-western Asia.

The distribution of *L. l. baueri* in the non-breeding period is New Zealand and eastern Australia, while *L. l. menzbieri* occurs predominantly in the north of Western Australia and south-eastern Asia. There are some records of Bar-tailed Godwits flagged in south-eastern Australia and seen in north-western Australia, and of birds flagged in north-western Australia seen in New Zealand (Minton *et al.* 2001).

Data

During the non-breeding period, Australia and New Zealand support 88% of the EAA Flyway Bar-tailed Godwits. On the basis of the hypothesised distribution of the two races in the non-breeding period, and using regional population estimates prepared for Australia (Appendix 2), it was estimated that there are 155 000 *L. l. baueri* and 170 000 *L. l. menzbieri* in the EAA Flyway. These represent respectively 15% and 16% of the minimum global population size of the Bar-tailed Godwit proposed by Delany and Scott (2002).

Important Sites

Important sites in the non-breeding period were in Australia (7), New Zealand (9) and Indonesia (1). Survey coverage in Australia and New Zealand was good and it is probable that most of the important non-breeding sites in these countries have been identified. The species makes negligible use of under-surveyed inland habitats.

Sites that were important during migration periods were in the Yellow Sea (South Korea and China), the Russian Far East, Alaska and Indonesia, with a single site in Japan exceeding the staging threshold. More important sites were recognised during northward than southward migration, particularly in the Yellow Sea. Two sites in Indonesia were the only sites identified as internationally important between the Yellow Sea and northern Australia during migration. The recognition of Ohope Harbour (New Zealand) in the breeding period presumably represents a concentration of immature and other non-breeding birds.

Migration

The scarcity of important sites between the Yellow Sea region and northern Australia is consistent with the proposal that the species is capable of long, non-stop flights (Barter and Wang 1990), although it is recorded regularly, and occasionally in moderate numbers, in south-eastern Asia and across the Pacific whilst on migration (Higgins and Davies 1996).

The seasonal distribution of internationally important sites suggests that Bar-tailed Godwits follow different routes on southward and northward migration. On southward migration, Bar-tailed Godwits (mainly *L. l. menzbieri*) stage through the Moroshechnaya Estuary and may fly direct to northern Australia (*c*. 8 000 – 9 000 km) before dispersing to south-eastern Australia and New Zealand. It is believed that Bar-tailed Godwits that breed in Alaska (*L. l. baueri*) fly direct to Australia and New Zealand with little use of Asian staging sites (*c*. 10 000 – 11 000 km, McCaffery and Gill 2001).

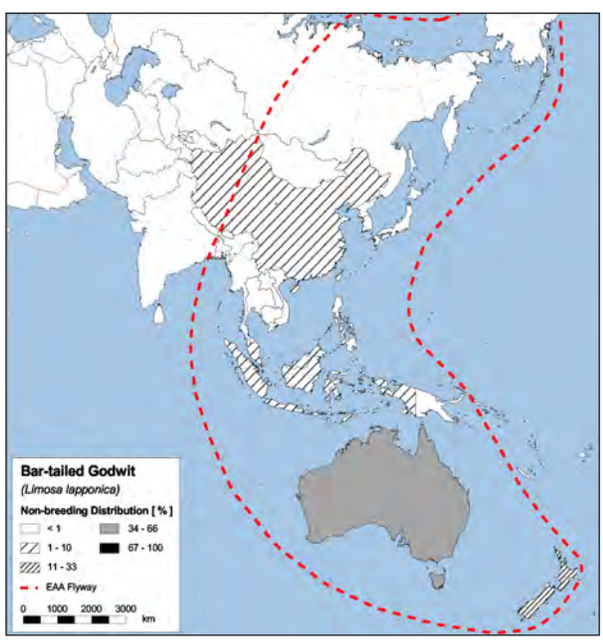

Figure 4.9 Bar-tailed Godwit – non-breeding distribution.

On northward migration, however, *L. l. baueri* depart from south-eastern Australia and pass over northern Australia, while *L. l. menzbieri* depart from the north-west of Australia (Higgins and Davies 1996), with both races staging through the Yellow Sea and Japan. This explains the greater number of important sites in the Yellow Sea on northward compared with southward migration. Barter (2002) estimated that 225 000 Bar-tailed Godwits pass through the Yellow Sea on northward migration. The low counts made on the Moroshechnaya Estuary in this period suggest that direct dispersal to breeding grounds may occur from the Yellow Sea.

Table 4.8 Bar-tailed Godwit - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
38	Eighty Mile Beach	AUS	110,290	17/10/1998	✓	✓	.	.	10, 8
190	Yalu Jiang National Nature Reserve	CHI	66,134	25/04/2004	.	.	✓	.	16
102	Roebuck Bay	AUS	65,000	1/01/1993	✓	✓	.	.	99, 55
343	Moroshechnaya River Estuary	RUS	50,000	15/08/1990	✓	.	✓	.	68, 63
165	Laizhouwan	CHI	25,961	10/05/2004	.	.	✓	.	16
320	Manukau Harbour	NZE	22,571	NA	.	✓	.	.	138
313	Farewell Spit	NZE	17,181	NA	.	✓	.	.	138
317	Kaipara Harbour	NZE	14,507	NA	.	✓	.	.	138
30	Corner Inlet	AUS	13,139	1/01/1993	✓	✓	.	.	8, 49
46	Great Sandy Strait	AUS	12,986	1/01/1993	.	✓	.	.	50
314	Firth of Thames	NZE	12,264	NA	.	✓	.	.	138
84	Moreton Bay	AUS	11,751	1/01/1996	.	✓	✓	.	8, 49
161	Huang He National Nature Reserve	CHI	10,678	21/04/1997	.	.	✓	.	181
400	Port Moller/Nelson Lagoon/Mud Bay	USA	10,000	NA	✓	.	.	.	70
399	Port Heiden	USA	10,000	NA	✓	.	.	.	70
398	Cinder Lagoon	USA	10,000	NA	✓	.	.	.	70
403	Yukon-Kuskokwim Delta	USA	9,000	9/09/1999	✓	.	.	.	69
361	Dongjin Estuary	SKO	8,430	1/05/1998	✓	.	✓	.	180, 180
364	Han River	SKO	8,000	1/05/2000	.	.	✓	.	141
324	Rangaunu Harbour	NZE	7,850	NA	.	✓	.	.	138
326	Whangarei Harbour	NZE	7,245	NA	.	✓	.	.	138
197	Banyuasin Delta	INO	7,000	1/01/1996	✓	✓	✓	.	141, 158
83	Milingimbi coast	AUS	7,000	15/12/1998	.	✓	.	.	40
325	Tauranga Harbour	NZE	6,900	NA	.	✓	.	.	138
373	Namyang Bay	SKO	5,800	1/05/1998	.	.	✓	.	180
318	Kawhia Harbour	NZE	5,350	NA	.	✓	.	.	138
323	Parengarenga Harbour	NZE	5,200	NA	.	✓	.	.	138
110	Shoalwater Bay and Broad Sound	AUS	5,151	1/12/1995	.	✓	.	.	52
322	Ohope/Ohiwa Harbour	NZE	5,000	NA	.	.	.	✓	138
39	Elcho Island	AUS	5,000	25/03/1999	.	.	✓	.	40
49	Hunter Estuary	AUS	4,000	NA	.	✓	.	.	149
181	Shuangtaizihekou N. N. Reserve	CHI	3,738	20/04/1999	✓	.	✓	.	24, 1
357	Asan Bay	SKO	3,500	16/04/1999	.	.	✓	.	116
379	Yong Jong Island	SKO	3,500	30/04/1999	✓	.	✓	.	18, 116
369	Mankyung Estuary	SKO	3,350	1/05/1998	.	.	✓	.	180
179	Shi Jiu Tuo/Daqing He	CHI	3,000	14/08/1994	✓	.	.	.	47
191	Yancheng National Nature Reserve	CHI	2,984	28/04/2001	.	.	✓	.	26
175	North-west Bo Hai Wan	CHI	2,321	12/04/2000	.	.	✓	.	20

Table 4.8 Bar-tailed Godwit - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
366	Kanghwa Island	SKO	2,200	1/05/1998	.	.	✓	.	180
356	Aphae Island	SKO	2,157	1/05/1998	.	.	✓	.	116
368	Kum Estuary	SKO	2,145	21/04/1998	.	.	✓	.	116
167	Linghekou	CHI	2,045	29/04/1999	.	.	✓	.	21
195	Bagan Percut - Sungai Ular	INO	2,000	1/04/1997	.	.	✓	.	43
377	Suncheon Bay	SKO	1,868	15/04/1998	.	.	✓	.	116
358	Cheonsu Bay	SKO	1,752	15/04/1998	.	.	✓	.	116
375	Seosan	SKO	1,732	1/05/1997	.	.	✓	.	117
154	Dongsha Islands	CHI	1,668	1/09/1997	✓	.	.	.	162
182	South Bo Hai Wan	CHI	1,499	2/05/2002	.	.	✓	.	20
362	Haenam Hwangsan	SKO	1,272	15/04/1998	.	.	✓	.	116
152	Daqing He	CHI	1,000	1/05/1992	.	.	✓	.	171
349	Schastiya Bay	RUS	953	1/09/2002	✓	.	.	.	4
205	Arao Kaigan	JAP	900	1/05/2002	.	.	✓	.	178

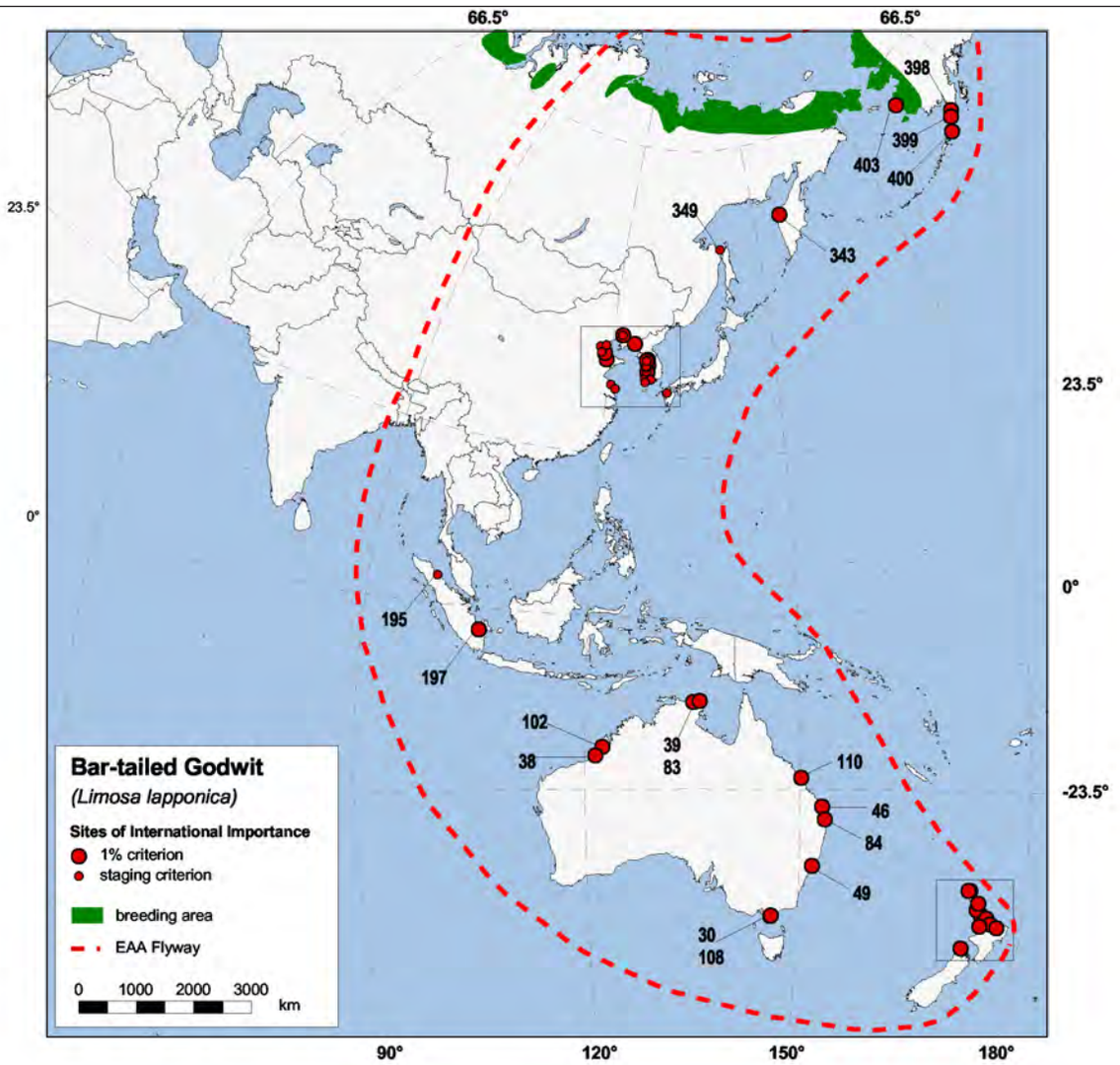

Figure 4.10a Bar-tailed Godwit – sites of international importance. Numbers refer to the respective site in Table 4.8.

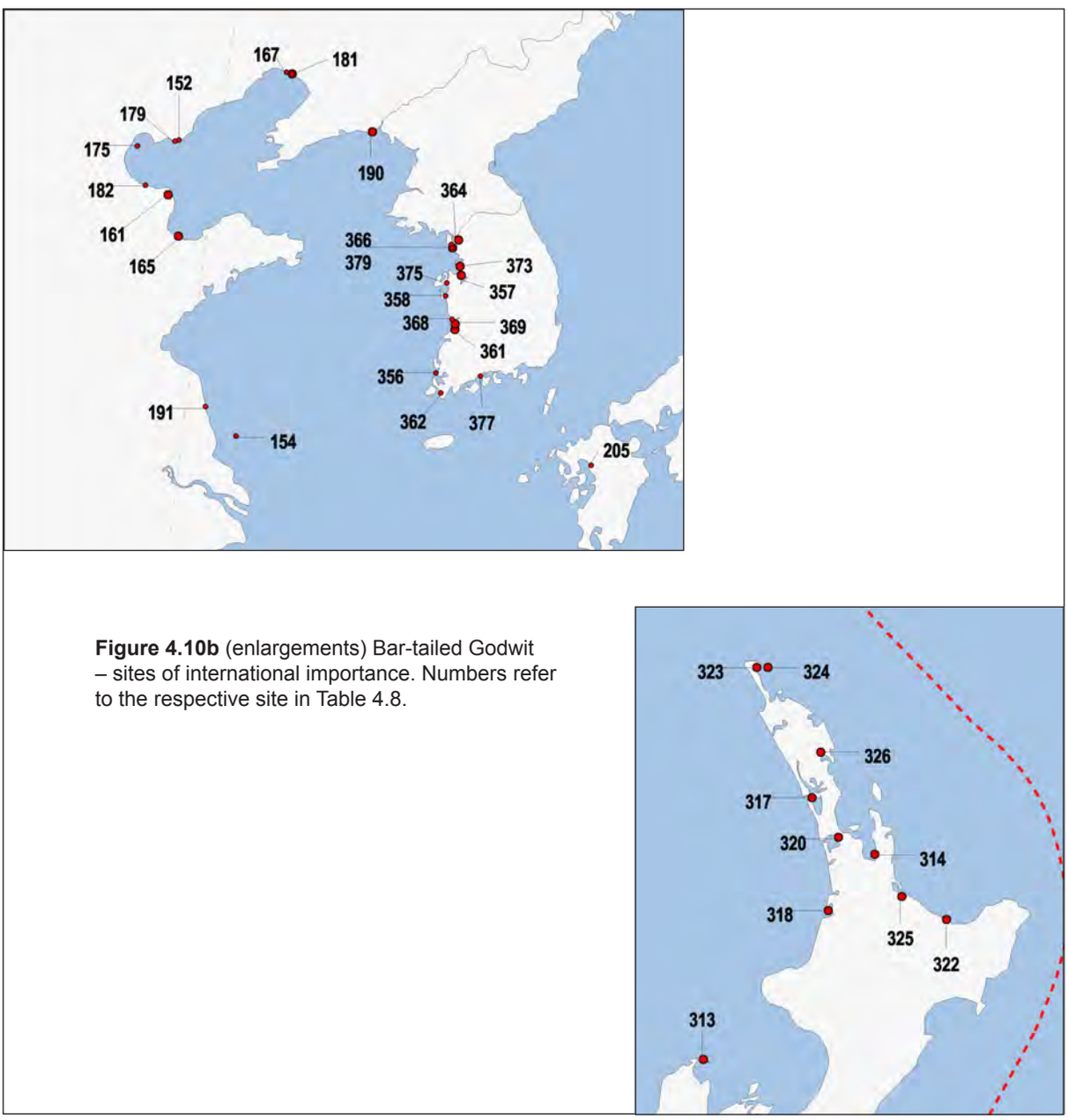

Figure 4.10b (enlargements) Bar-tailed Godwit – sites of international importance. Numbers refer to the respective site in Table 4.8.

Little Curlew

Numenius minutus

Flyway	Estimate:	**180 000**
	1% threshold:	1 800
	Staging threshold:	450
Global	Delany and Scott (2002):	180 000

Population

The Little Curlew is monotypic and confined to the EAA Flyway, but it is related to, and may be conspecific with, the critically endangered Eskimo Curlew *Numenius borealis* of the Americas. It breeds in Siberia and most of the population occurs in northern Australia during the non-breeding period.

Data

An estimate of 250 000 was made in 1966 in northern Australia (Smith 1971), based on the assumption that birds visiting a wetland were on migration. Studies undertaken in the 1980's (Bamford 1990) showed that birds made daily movements between dry grasslands and wetlands. As such the 1966 figure may be an over estimate of the number of birds visiting the wetland.

The distribution of the species in the non-breeding period is less predictable than for many other shorebirds both within and between years, as it appears to depend upon the availability of dry grasslands and freshwater wetlands (Bamford 1990). Availability of these habitats in time and space may vary greatly between years. This makes it difficult to be confident about regional maxima, and possibly only single or simultaneous counts can be used to estimate the population size of this species.

Important Sites

Most internationally important sites in the non-breeding period were in Australia. Inland sites are probably under-represented, as Bamford (1990) reported several anecdotal accounts of large numbers of Little Curlews on wetlands of the Barkly Tableland (Northern Territory, Australia). Outside Australia, there was one internationally important non-breeding site in West Papua (Indonesia) and a nearby site in Papua New Guinea that was important on southward migration.

In Asia, there were migration period counts from Russia and China, while Ostapenko *et al*. (1980) reported large numbers of Little Curlew in Mongolia on southward migration. The count of 17 079 Little Curlews at Huang He National Nature Reserve (China) during northward migration is based on an extrapolation from density estimates, but single high counts have also been made at this site, such as 1 619 on 21 April 1997 (Chen *et al*. 1997). Similar numbers have been reported from the Luan He region (Hebei, China) during northward migration (Barter 2002).

Migration

Southward migration is overland from Siberia and begins in mid-July (Higgins and Davies 1996), which is consistent with the record of important sites in the Daursky Nature Reserve (Russia) in early August, and of reports from Mongolia (Ostapenko *et al*. 1980). Little Curlews have been recorded passing through China along the coastlines of the Yellow and East China Seas, but the low number of records between this region and New Guinea/northern Australia suggests a non-stop flight across south-eastern Asia. Arrival in northern Australia begins in mid-September and, as noted above, the birds are mobile across a large region throughout the non-breeding period according to seasonal conditions. Internationally important sites within this region may be used for only short periods of time or not at all in some years depending on the arrival and intensity of the wet season.

Figure 4.11 Little Curlew – non-breeding distribution as percentage of flyway estimate.

The distribution of Little Curlews before departure from Australia appears to be influenced by seasonal conditions. There is some evidence that the far north is not as important during northward migration, probably because of seasonal flooding and the growth of vegetation (Higgins and Davies 1996).

Following departure from Australia, birds appear to follow a similar route to southward migration (Higgins and Davies 1996), with records from Huang He National Nature Reserve (China) and Daursky Nature Reserve (Russia). Barter (2002) suggests that northward migration may occur through inland China.

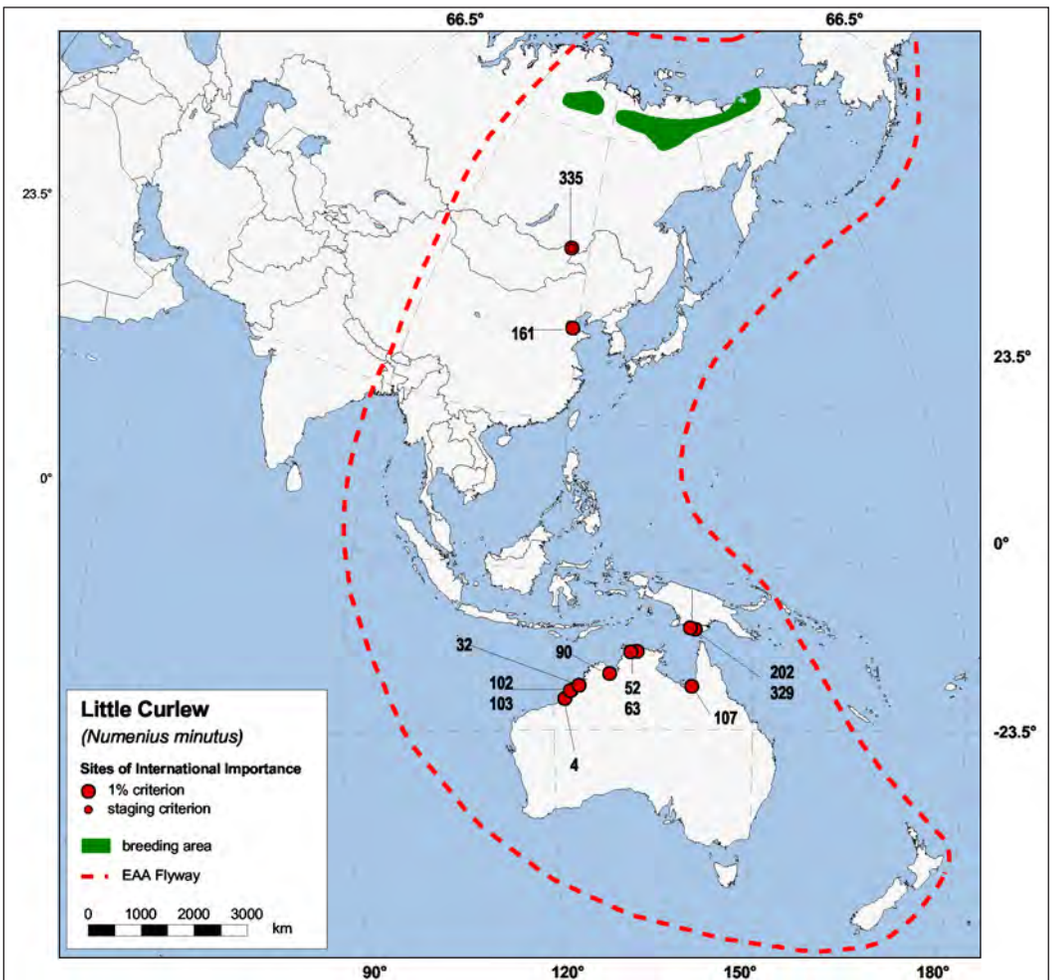

Figure 4.12 Little Curlew – sites of international importance. Numbers refer to the respective site in Table 4.9.

Table 4.9 Little Curlew - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
52	Kakadu National Park	AUS	180,000	NA	✓	✓	.	.	119, 15
103	Roebuck Plains	AUS	52,000	25/03/1985	.	✓	.	.	113
335	Daursky Nature Reserve	RUS	48,000	1/08/1995	✓	.	✓	.	71, 71
107	SE Gulf of Carpentaria	AUS	25,042	1/03/1998	.	✓	.	.	51
161	Huang He National Nature Reserve	CHI	17,079	1/05/1998	.	.	✓	.	28
4	Anna Plains	AUS	12,000	31/03/1985	.	✓	.	.	89
63	Lake Finniss	AUS	12,000	1/10/1993	✓	.	.	.	86
329	Tonda Wildlife Management Area	PNG	10,000	1/11/1985	✓	.	.	.	38
102	Roebuck Bay	AUS	5,000	NA	.	✓	.	.	121
32	Derby Sewage Ponds	AUS	5,000	9/11/1999	✓	.	.	.	11
202	Wasur National Park	INO	4,000	NA	.	✓	.	.	141
90	Parry floodplain, Wyndham	AUS	3,000	30/12/1984	.	✓	.	.	89

Whimbrel

Numenius phaeopus

Flyway	Estimate:	**100 000**
	1% threshold:	1 000
	Staging threshold:	250
Global	Delany and Scott (2002):	1 007 000 – 2 132 000

Population

The Whimbrel is one of the most widespread sandpipers, with a discontinuous breeding distribution around the Arctic but a non-breeding distribution that takes in central and South America, Africa, central and south-eastern Asia and Australasia. Delany and Scott (2002) recognise six subspecies globally of which only *N. p. variegatus* occurs in the EAA Flyway.

Data

The Flyway population estimate is greater then the previous estimate of Delany and Scott (2002). The estimate is based on research at Moroshechnaya Estuary on southward migration. Work in two different years has suggested 100 000 (Gerasimov and Gerasimov 1999) and 169 890 (Huettmann and Gerasimov 2002) birds pass through the area.

The estimated population size is larger than count data suggest. This probably means that there are many more Whimbrel in south-eastern Asia than have been recorded.

Important Sites

Important sites in the non-breeding period were mainly in Australia (6), with single sites in China, Myanmar, Indonesia and Malaysia.

During migration, important sites were concentrated in Russia, South Korea, Japan and China. More important sites were identified during northward than on southward migration, particularly in Japan (24 compared with 1) and South Korea (11 compared with 1).

Migration

Count data from northward migration suggest that Whimbrel concentrate in eastern Asia (Japan and the Yellow Sea area).

In contrast, on southward migration the Kamchatka Peninsula (e.g. Moroshechnaya Estuary) appears to be a major staging area. It is estimated that over 100 000 migrate through during southward migration while only 13 000 birds stage during northward migration (Gerasimov and Gerasimov 2002). Barter (2002) suggests that on southward migration some birds may fly direct from the Sea of Okhotsk to their non-breeding range. This is consistent with the low number of important sites in south-eastern Asia.

Higgins and Davies (1996) report that in parts of northern Australia, large numbers of Whimbrels occurred throughout the breeding period and numbers are stable. Chatto (2003) found that numbers in the Northern Territory (Australia) were lowest in the non-breeding period, high through the breeding period and peaked early during southward migration, presumably as birds passed through to sites in eastern and south-eastern Australia.

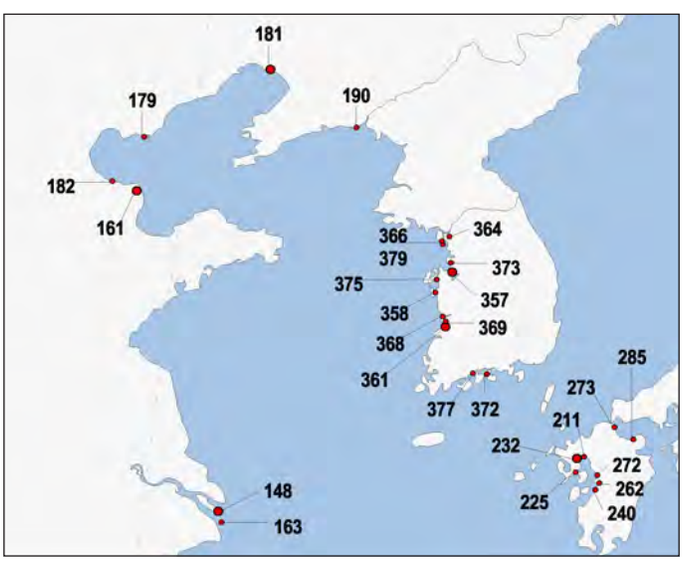

Figure 4.13b (enlargement) Whimbrel – sites of international importance. Numbers refer to the respective site in Table 4.10.

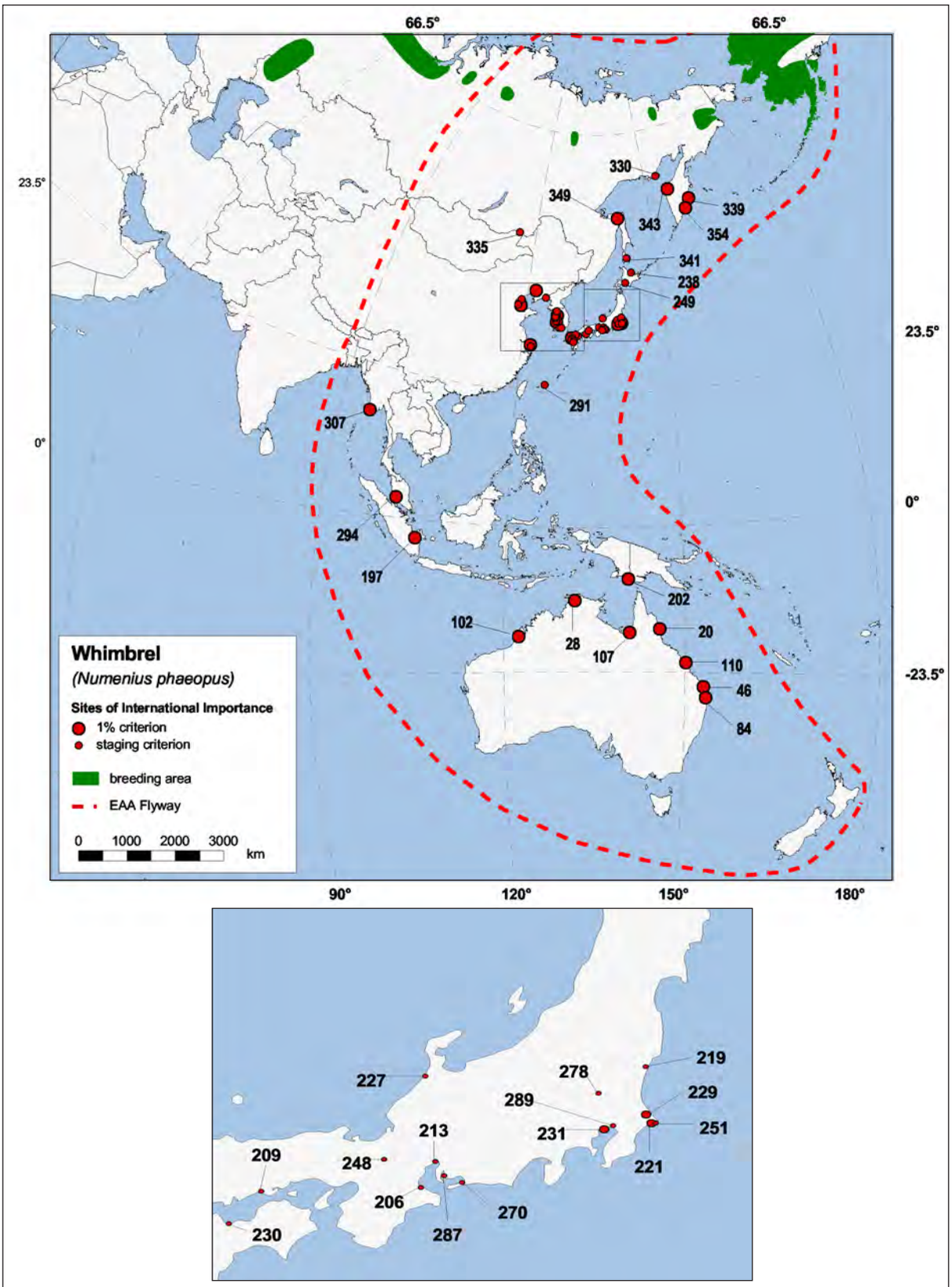

Figure 4.13a Whimbrel – sites of international importance. Numbers refer to the respective site in Table 4.10.

Table 4.10 Whimbrel - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
343	Moroshechnaya River Estuary	RUS	20,000	1/08/1990	✓	.	✓	.	63, 68
110	Shoalwater Bay and Broad Sound	AUS	7,124	1/12/1995	.	✓	.	.	52
339	Kronotsky Nature Reserve	RUS	6,000	25/05/1984	.	.	✓	.	108
349	Schastiya Bay	RUS	4,325	1/09/2002	✓	.	.	.	4
221	Iioka Kaigan	JAP	4,041	1/05/1998	.	.	✓	.	94
107	SE Gulf of Carpentaria	AUS	3,414	1/03/1999	.	✓	.	.	51
229	Kamisu-Chou Takahama	JAP	3,340	1/05/2001	.	.	✓	.	177
46	Great Sandy Strait	AUS	3,128	NA	.	✓	.	.	50
161	Huang He National Nature Reserve	CHI	2,626	27/04/1998	.	.	✓	.	181
354	Vakhil River Mouth	RUS	2,500	1/05/1991	.	.	✓	.	68
28	Chambers Bay	AUS	1,500	NA	✓	.	.	.	40
294	Kapar Power Station	MAL	1,500	16/01/1994	✓	✓	✓	.	169, 101
84	Moreton Bay	AUS	1,440	1/01/1996	.	✓	.	.	8
202	Wasur National Park	INO	1,400	2/10/1983	✓	.	.	.	144
357	Asan Bay	SKO	1,310	1/05/1998	✓	.	.	.	180
181	Shuangtaizihekou N. N. Reserve	CHI	1,306	12/05/1998	.	.	✓	.	24
232	Kashima Shingomori	JAP	1,280	1/05/2002	.	.	✓	.	178
231	Kasai Kaihinkouen	JAP	1,220	1/05/2000	.	.	✓	.	179
148	Chongming Dongtan N. N. Reserve	CHI	1,200	20/04/1999	.	.	✓	.	18
361	Dongjin Estuary	SKO	1,070	1/05/1998	.	.	✓	.	180
20	Cairns Foreshore	AUS	1,027	21/03/1995	.	✓	.	.	76
307	Irrawaddy Delta	MYA	1,025	1/02/2006	.	✓	.	.	122
102	Roebuck Bay	AUS	1,020	NA	.	✓	.	.	99
197	Banyuasin Delta	INO	1,000	13/02/1993	.	✓	.	.	169
238	Komuke-ko	JAP	970	15/09/2000	✓	.	.	.	179
278	Tochigi-ken Nanbu, Suiden-chitai	JAP	928	5/05/1996	.	.	✓	.	54
289	Yatsu Higata	JAP	894	16/05/1996	.	.	✓	.	54
285	Usa Kaigan	JAP	839	1/05/1998	.	.	✓	.	94
379	Yong Jong Island	SKO	825	1/05/1998	.	.	✓	.	180
335	Daursky Nature Reserve	RUS	800	1/06/1995	.	.	✓	.	71
163	Jiu Duan Sha N. N. Reserve	CHI	800	1/05/2001	.	.	✓	.	18
373	Namyang Bay	SKO	740	2/05/1999	.	.	✓	.	18
291	Yonaha-wan	JAP	657	1/05/1998	.	.	✓	.	94
273	Sone Higata	JAP	625	6/05/1996	.	.	✓	.	54
369	Mankyung Estuary	SKO	620	1/05/1998	.	.	✓	.	180
211	Daijugarami	JAP	607	1/05/2001	.	.	✓	.	177
248	Moriyamashi-kogan	JAP	572	1/05/1998	.	.	✓	.	94
377	Suncheon Bay	SKO	528	14/05/1998	.	.	✓	.	116
213	Fujimae Higata	JAP	515	30/04/1993	.	.	✓	.	54
366	Kanghwa Island	SKO	485	1/05/1998	.	.	✓	.	180
262	Oono-gawa, Suna-gawa Kakou	JAP	470	1/05/2000	.	.	✓	.	179
225	Isahaya Higata	JAP	468	14/05/1991	.	.	✓	.	54
368	Kum Estuary	SKO	452	6/05/1998	.	.	✓	.	116
375	Seosan	SKO	432	1/05/1997	.	.	✓	.	117
358	Cheonsu Bay	SKO	432	1/05/1998	.	.	✓	.	116
227	Kahokugata	JAP	426	14/05/1996	.	.	✓	.	54
270	Shio-kawa Higata	JAP	415	1/05/2001	.	.	✓	.	177

Table 4.10 (cont.) Whimbrel - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
372	Namhae	SKO	407	15/05/1998	.	.	✓	.	116
230	Kamo-gawa Kakou	JAP	371	1/05/1998	.	.	✓	.	94
287	Yahagi-gawa Kakou	JAP	354	1/05/2000	.	.	✓	.	179
272	Shira-kawa Kakou	JAP	353	1/05/2000	.	.	✓	.	179
206	Atago-gawa, Kushida-gawa	JAP	352	16/05/1996	.	.	✓	.	54
219	Hikata Hachimangoku	JAP	326	29/04/1998	.	.	✓	.	94
364	Han River	SKO	320	1/05/2000	.	.	✓	.	141
341	Lososei Bay	RUS	300	27/05/1987	.	.	✓	.	123
251	Nagasaki Kaigan	JAP	300	1/05/1998	.	.	✓	.	94
179	Shi Jiu Tuo/Daqing He	CHI	300	25/08/1999	✓	.	.	.	137
190	Yalu Jiang National Nature Reserve	CHI	286	2/05/1999	.	.	✓	.	23
330	Babushkina Bay	RUS	278	1/08/1995	✓	.	.	.	46
182	South Bo Hai Wan	CHI	278	2/05/2002	.	.	✓	.	20
240	Kuma-gawa Kakou	JAP	270	1/05/1998	.	.	✓	.	94
209	Chidorihama Kiya-gawa Kakou	JAP	255	29/04/1991	.	.	✓	.	54
249	Mukawa Kakou	JAP	250	1/05/2001	.	.	✓	.	177

Eurasian Curlew

Numenius arquata

Flyway	Estimate:	**40 000**
	1% threshold:	400
	Staging threshold:	100
Global	Delany and Scott (2002):	490 000 – 655 000

Population

There are three subspecies of the Eurasian Curlew: the abundant *N. a. arquata* that breeds in northern Europe and migrates to Africa; the much less abundant and less well censused *N. a. orientalis* that breeds in central Asia and migrates to eastern Africa, and southern and south-eastern Asia; and *N. a. suschkini* that breeds in the southern Urals and Kazakhstan and migrates to eastern and southern Africa. Only *N. a. orientalis* is present in the EAA Flyway.

Data

The Flyway population estimate represents approximately 50% of the global population of the subspecies *N. a. orientalis*. Virtually the entire population of the Eurasian Curlew in the EAA Flyway remains within the northern hemisphere in the non-breeding period, with over half of the population shared between China and South Korea.

The population estimate is 15% higher than that given by Delany and Scott (2002), based on recent surveys in southern China.

Important Sites

Some coastal sites in eastern Asia were important during the migration periods as well as in the non-breeding period. For example, sites around the Yellow Sea were important in the northward, southward and/or non-breeding periods, although the importance of more northerly sites in this region tended to be confined to migration periods. The Daursky Nature Reserve (Russia) was important both late during northward migration and early during southward migration.

Migration

The Daursky Nature Reserve (Russia) may represent a concentration point for birds on arrival and departure from the breeding grounds. No other important sites were identified in Russia, suggesting that passage between the Daursky area and the Yellow Sea region is direct and non-stop. On southward migration, some birds disperse quickly from the Yellow Sea, as evidenced by the numbers of birds in Indonesia in September. Large numbers remain on the coastline of eastern Asia. Northward migration also appears to be via the Yellow Sea.

Figure 4.14 Eurasian Curlew – non-breeding distribution

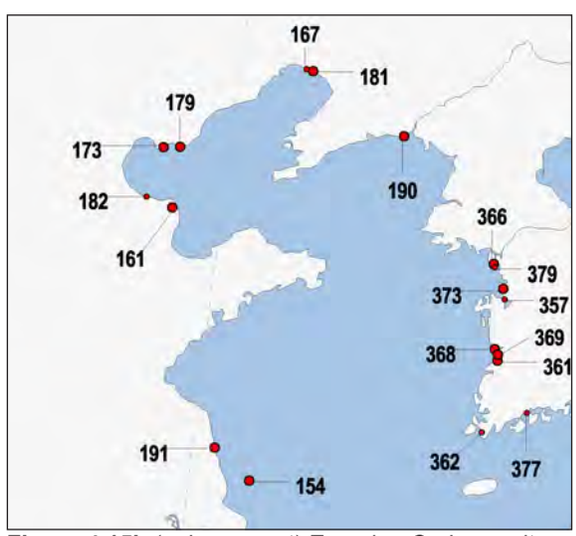

Figure 4.15b (enlargement) Eurasian Curlew – sites of international importance. Numbers refer to the respective site in Table 4.11.

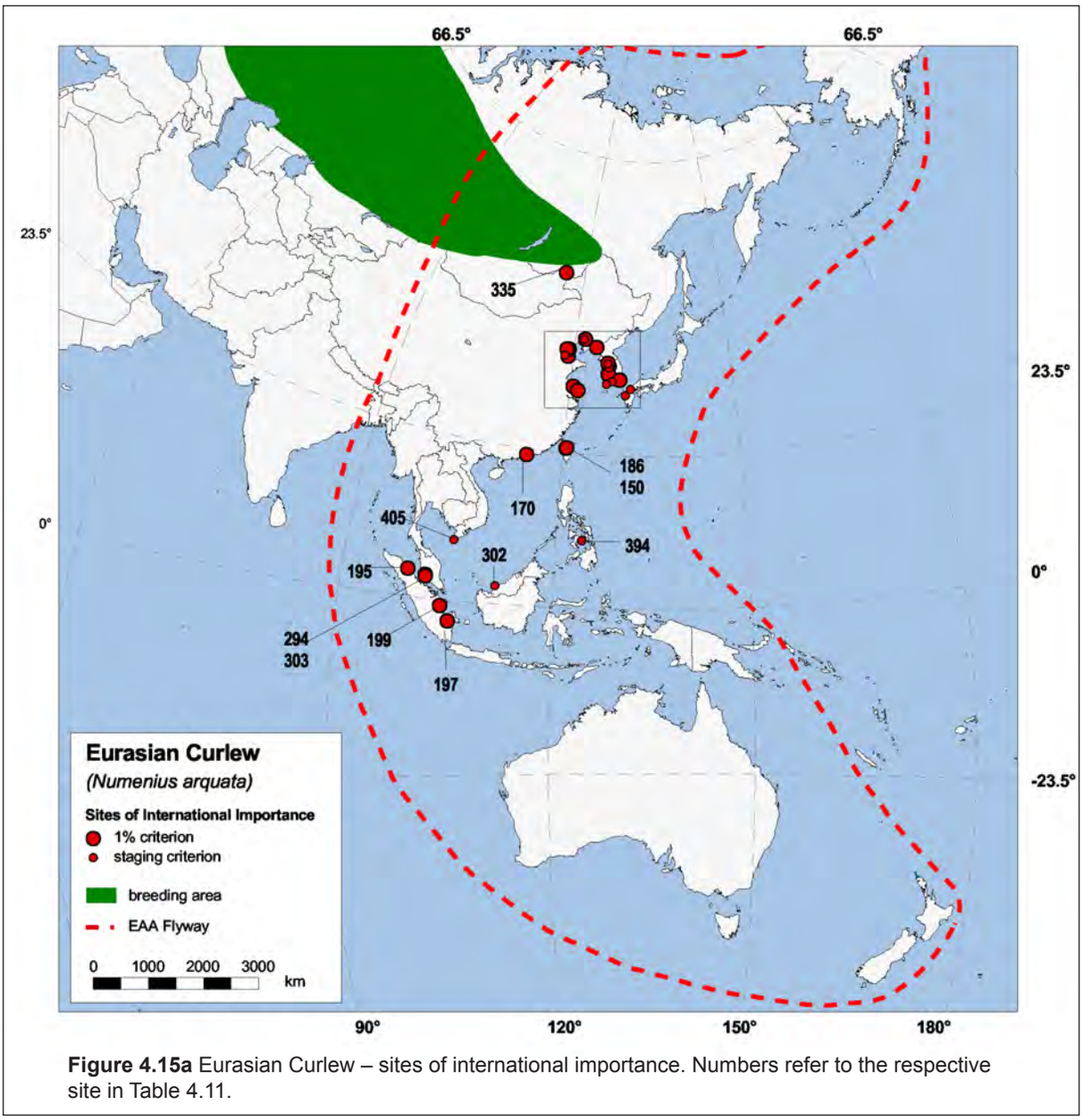

Figure 4.15a Eurasian Curlew – sites of international importance. Numbers refer to the respective site in Table 4.11.

Table 4.11 Eurasian Curlew - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
179	Shi Jiu Tuo/Daqing He	CHI	15,000	14/08/1994	✓	.	✓	.	47,18
191	Yancheng National Nature Reserve	CHI	13,136	25/04/2004	.	✓	✓	.	16,169
161	Huang He National Nature Reserve	CHI	9,766	4/04/1999	.	.	✓	.	181
197	Banyuasin Delta	INO	7,061	1/10/1988	✓	✓	✓	.	158,141,158
173	North Bo Hai Wan	CHI	2,890	2/05/2002	.	.	✓	.	20
368	Kum Estuary	SKO	2,800	29/08/1999	✓	.	.	.	18
335	Daursky Nature Reserve	RUS	2,500	1/06/1995	✓	.	✓	.	71,116
373	Namyang Bay	SKO	2,451	1/05/1997	✓	✓	✓	.	180,116,116
199	K. Tungal to T. Djabung coast	INO	2,253	31/07/1985	✓	.	.	.	44
181	Shuangtaizihekou N. N. Reserve	CHI	1,535	20/04/1999	✓	.	✓	.	24,1
186	Ta-Too-Hsi	CHI	1,025	10/01/1996	.	✓	.	.	169
371	Nakdong Estuary	SKO	1,010	18/01/1999	✓	✓	.	.	116,141
170	Mai Po Marshes	CHI	1,005	16/01/1994	.	✓	.	.	169
294	Kapar Power Station	MAL	1,000	31/01/1995	✓	✓	.	.	169,101
195	Bagan Percut - Sungai Ular	INO	1,000	1/03/1997	.	✓	.	.	43
150	Chuan-Hsing	CHI	810	22/01/1989	.	✓	.	.	169
361	Dongjin Estuary	SKO	775	11/09/1999	✓	.	.	.	18
366	Kanghwa Island	SKO	642	20/01/1994	.	✓	.	.	169
190	Yalu Jiang National Nature Reserve	CHI	563	2/05/1999	.	.	✓	.	23
369	Mankyung Estuary	SKO	530	1/09/1998	✓	.	.	.	180
303	Pulau Tengah (Klang Islands)	MAL	450	29/01/1991	.	✓	.	.	169
154	Dongsha Islands	CHI	400	1/02/1995	.	✓	.	.	162
405	Dat Mui	VIE	384	1/08/1999	✓	.	.	.	37
357	Asan Bay	SKO	348	1/10/1996	✓	.	✓	.	103,117
379	Yong Jong Island	SKO	327	1/09/1998	✓	.	✓	.	180,117
377	Suncheon Bay	SKO	239	2/09/1998	✓	.	.	.	116
182	South Bo Hai Wan	CHI	201	2/05/2002	.	.	✓	.	20
362	Haenam Hwangsan	SKO	195	30/08/1998	✓	.	.	.	116
225	Isahaya Higata	JAP	160	15/04/1991	.	.	✓	.	54
167	Linghekou	CHI	154	29/04/1999	.	.	✓	.	21
273	Sone Higata	JAP	132	30/04/1988	.	.	✓	.	54
394	Olango Island	PHI	124	5/05/1987	.	.	✓	.	120
302	Pulau Bruit	MAL	111	1/09/1985	✓	.	.	.	120

Far Eastern Curlew

Numenius madagascariensis

Flyway	Estimate:	**38 000**
	1% threshold:	380
	Staging threshold:	95
Global	Delany and Scott (2002):	38 000

Population

The monotypic Far Eastern Curlew is confined to the EAA Flyway. It breeds in eastern Russia and north-eastern China and the bulk of the population is considered to spend the non-breeding period in Australia.

Data

The population estimate for the species has steadily increased over the past decade as additional count information has been generated in northern Australia and South-east Asia. This is despite localised population declines reported in parts of Australia (Higgins and Davies 1996).

The new population estimate is supported by estimates made on the basis of numbers of birds recorded around the Yellow Sea during northward migration (Barter 2002).

Important Sites

All important sites in the non-breeding period were in Australia, particularly along the east coast. Some important sites in Australia were recognised on the basis of counts made during migration periods, presumably as birds concentrate on arrival and departure, while two sites in northern Australia, Mission Point and Poona Creek, were important in the breeding period (July). These sites may be important for non-breeding birds, although they may represent very early arrivals.

Outside Australia, important sites were identified during migration periods in China (6), South Korea (7), North Korea (1), Malaysia (1), Indonesia (1) and Russia (3). Given the occurrence of several sites in both China and South Korea, there are likely to be further significant sites in North Korea.

There were many sites in northern Australia that met the staging threshold during the migration periods, but these have been excluded as they are within the main non-breeding range of the species. Highest counts in northern Australia, however, tended to be during the southward migration period, with lower numbers over the non-breeding period. Chatto (2003) also found maximum numbers in the Northern Territory (Australia) early during southward migration.

Migration

The Far Eastern Curlew is a long-distance migrant and satellite tracking of individuals suggests that birds can fly directly from eastern Australia to the east coast of China (Driscoll 1999). Such direct migration is also suggested by the distribution of important sites, with very few in southern China or south-eastern Asia.

South Korea is more important on northward than southward migration (Won 1991, Barter 2002), In contrast, numbers in Japan and the Philippines are highest on southward migration (Higgins and Davies 1996). Although not a significant site, numbers are highest at the Mai Po Marshes (China) during northward migration (Chalmers 1986, Chalmers and Turnbull, 1990). These observations and the identification of important sites suggest different patterns of movement through eastern and south-eastern Asia during the migration periods.

In Australia, arrivals on southward migration are concentrated in the north of the country. A similar concentration does not occur during northward migration, with birds apparently departing directly from Australian sites on the east coast. Satellite tracking indicates that some birds move between north-eastern Australia and New Guinea early in the northward migration period

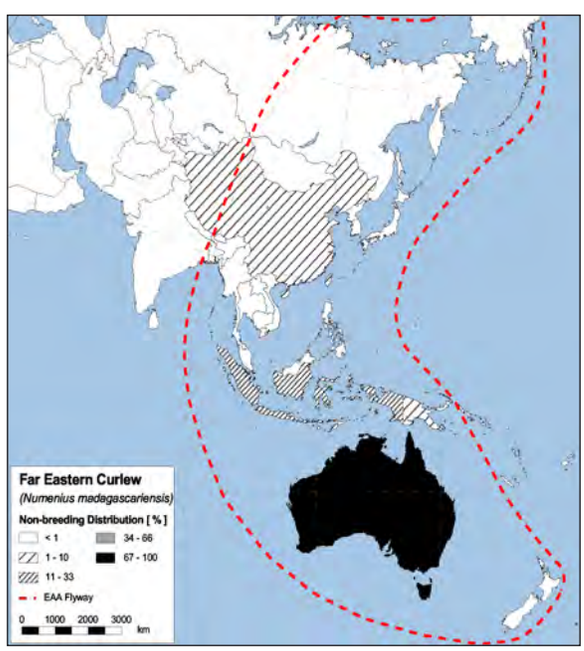

Figure 4.16 Far Eastern Curlew – non-breeding distribution

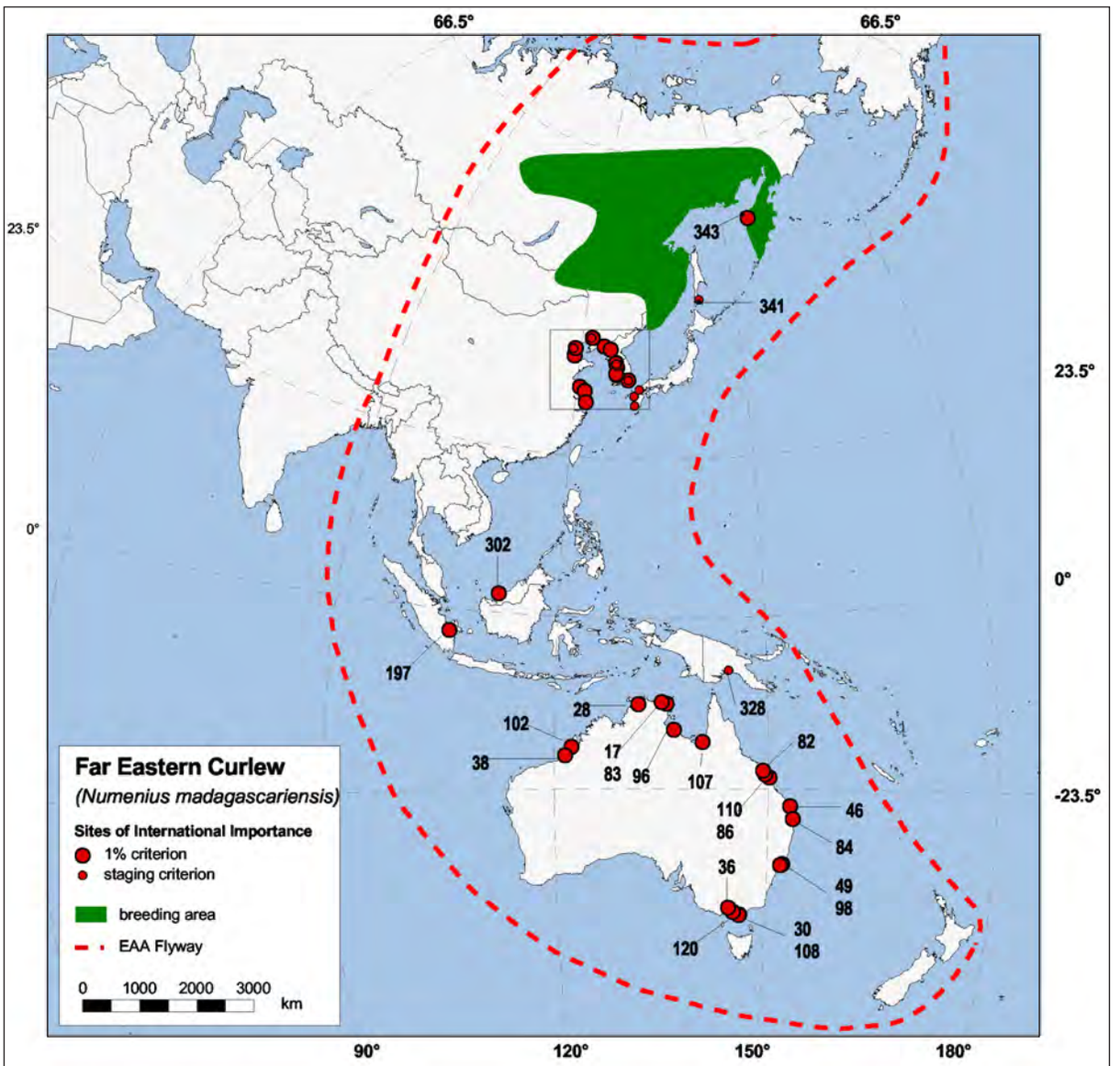

Figure 4.17a Far Eastern Curlew – sites of international importance. Numbers refer to the respective site in Table 4.12.

(Driscoll 1999).

Overall, southward migration tends to be more easterly than northward migration, with birds passing through the Yellow Sea and Japan, some staging in the Philippines and most flying direct to northern Australia. In contrast, northward migration appears to occur from Australia without concentration of birds in the north of the country, direct to the east coast of China and then north through the Yellow Sea.

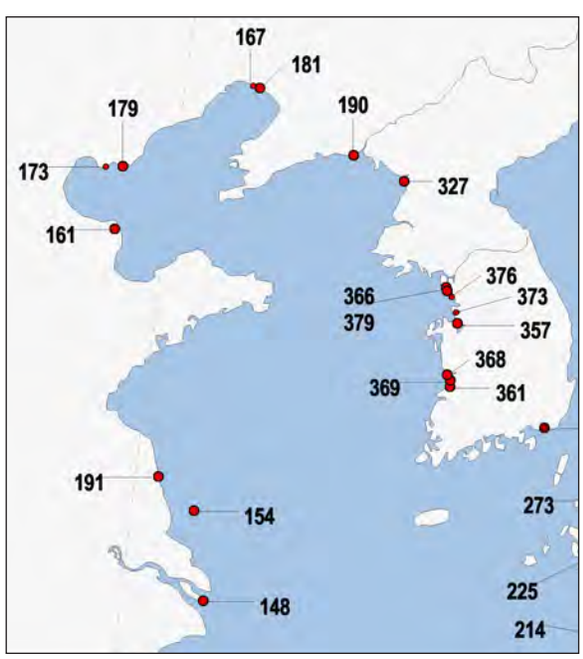

Figure 4.17b (enlargement) Far Eastern Curlew – sites of international importance in the Yellow Sea.

Table 4.12 Far Eastern Curlew - sites of international importance

Site Code	Site	Country	Max Count	Date	SM	NB	NM	B	Ref.
46	Great Sandy Strait	AUS	6,018	1/01/1993	✓	✓	.	.	50,49
190	Yalu Jiang National Nature Reserve	CHI	3,874	25/04/2004	.	.	✓	.	16
84	Moreton Bay	AUS	3,500	1/01/1996	✓	✓	✓	✓	8,49,49,49
110	Shoalwater Bay and Broad Sound	AUS	2,986	1/12/1995	.	✓	.	.	52
197	Banyuasin Delta	INO	2,620	1/10/1988	✓	.	.	.	158
30	Corner Inlet	AUS	2,281	1/01/1993	.	✓	.	.	8
102	Roebuck Bay	AUS	2,160	1/01/1993	.	✓	.	.	8
366	Kanghwa Island	SKO	2,120	1/05/1998	✓	.	✓	.	180,116
327	Mundok Mig. Bird Wetland Reserve	NKO	1,890	NA	.	.	✓	.	18
86	Notch Point	AUS	1,850	25/10/1994	✓	.	.	.	8
181	Shuangtaizihekou N. N. Reserve	CHI	1,817	19/08/1999	✓	.	✓	.	18,1
107	SE Gulf of Carpentaria	AUS	1,811	1/03/1999	.	✓	.	.	51
191	Yancheng National Nature Reserve	CHI	1,718	1/07/1994	✓	.	✓	.	164,162
379	Yong Jong Island	SKO	1,620	26/08/1999	✓	.	✓	.	18,117
154	Dongsha Islands	CHI	1,532	1/09/1997	✓	.	✓	.	162,162
120	Western Port Bay	AUS	1,294	2/01/1987	.	✓	.	.	8
357	Asan Bay	SKO	1,170	16/04/1999	✓	.	✓	.	18,103
161	Huang He National Nature Reserve	CHI	1,125	4/04/1999	.	.	✓	.	181
369	Mankyung Estuary	SKO	1,100	3/10/1999	✓	.	✓	.	18,117
28	Chambers Bay	AUS	1,050	NA	.	.	.	.	130
361	Dongjin Estuary	SKO	1,045	17/04/1999	✓	.	✓	.	18,18
343	Moroshechnaya River Estuary	RUS	1,000	15/08/1990	✓	.	.	.	63
98	Port Stephens	AUS	960	NA	.	✓	.	.	149
36	Eastern Port Phillip Bay	AUS	808	2/09/1986	✓	.	.	.	8
148	Chongming Dongtan N. N. Reserve	CHI	794	31/03/1996	.	.	✓	.	27
82	Mackay Town Beach	AUS	710	NA	.	✓	.	.	99
38	Eighty Mile Beach	AUS	709	17/10/1998	✓	✓	.	.	10,99
25	Castlereagh Bay	AUS	700	NA	.	.	.	.	130
17	Buckingham Bay	AUS	700	25/06/1999	.	.	.	✓	40
49	Hunter Estuary	AUS	653	2/03/1984	✓	✓	✓	.	8,49,49
371	Nakdong Estuary	SKO	635	1/09/1983	✓	.	✓	.	141,117
108	Shallow Inlet/Sandy Point	AUS	622	12/02/1983	.	✓	.	.	8
179	Shi Jiu Tuo/Daqing He	CHI	500	30/08/1999	✓	.	.	.	137
368	Kum Estuary	SKO	422	1/05/1997	.	.	✓	.	18
302	Pulau Bruit	MAL	411	15/04/1986	.	.	✓	.	82
96	Port McArthur	AUS	407	NA	.	.	.	.	130
328	Kikori Delta	PNG	343	20/03/2000	.	.	✓	.	168
373	Namyang Bay	SKO	280	1/05/1997	✓	.	✓	.	180,116
214	Fukiagehama Kaigan	JAP	254	1/05/1997	.	.	✓	.	91
173	North Bo Hai Wan	CHI	221	2/05/2002	.	.	✓	.	20
167	Linghekou	CHI	132	29/04/1999	.	.	✓	.	21
225	Isahaya Higata	JAP	120	11/09/1996	✓	.	.	.	54
273	Sone Higata	JAP	105	1/05/1998	.	.	✓	.	94
341	Lososei Bay	RUS	100	23/05/1990	.	.	✓	.	123
376	Song Do Tidal Flat	SKO	95	18/08/1998	✓	.	.	.	116