

Guidelines for the Preparation of Site Nominating Documentation

for the

East Asian-Australasian Shorebird Site Network

Wetlands International - Oceania

GPO Box 787, Canberra, 2601, AUSTRALIA

Phone: +61 2 6274 2890 Fax: +61 2 6274 2779 Email: warren.leelong@ea.gov.au

CONTENTS

1.	The East Asian-Australasian Shorebird Site Network	1
	1.1 Summary.....	1
	1.2 Introduction	2
	1.3 Principles of the East Asian-Australasian Shorebird Site Network.....	3
	1.4 Nature of the Network	3
	1.5 Goals of the Network.....	4
	1.6 Activities of the Network	5
	1.7 Joining the Shorebird Site Network	6
	1.8 Biological Criteria to Qualify as a Network Site.....	6
	1.9 Shorebird Network Support and Administration.....	7
2.	Procedure for listing sites	8
3.	Explanatory Notes and Guidelines for the Information Sheet on Shorebird Network Sites	9
4.	Minimum Population Estimates and 1% Criteria for the shorebird populations in the East Asian-Australasian Flyway	14

1.0 The East Asian-Australasian Shorebird Site Network - Information Paper

1.1 Summary

Each year millions of shorebirds migrate between their breeding areas in the Russian Far East, northern China and Alaska to as far south as Australia and New Zealand. To complete this remarkable migration of up to 12 000 km, shorebirds are dependent on intermediate staging sites where they can replenish the fat reserves needed to power them further on their migration. As such successful conservation of migratory shorebirds requires a coordinated multinational approach.

The East Asian-Australasian Shorebird Site Network was developed under the Asia-Pacific Migratory Waterbird Conservation Strategy: 1996-2000. This Strategy has been updated for the 2001 - 2005 period. The Network aims to facilitate international recognition and management of a network of important sites for shorebirds. The Network operates as a cooperative environmental program, involving site management bodies and local communities, working for the conservation of wetlands of international importance for migratory shorebirds.

The motivating feature of the Network is that it enables site owners, managers, participating organisations and local people to obtain international recognition for the importance of the site and their conservation efforts.

At the international level the Shorebird Site Network is supported by a Shorebird Flyway Officer working with Wetlands International. The Shorebird Flyway Officer works from the Oceania Office of Wetlands International which is co-located with Environment Australia in Canberra, Australia. The position is funded by Environment Australia. A Shorebird Working Group oversees the development of the Network.

1.2 Introduction

Each year millions of shorebirds migrate between their breeding areas in the Russian Far East, northern China and Alaska to as far south as Australia and New Zealand. To complete this remarkable migration of up to 12 000 km, shorebirds are dependent on intermediate staging sites where they can replenish the fat reserves needed to power them further on their migration. As such, successful conservation of migratory waterbirds, which include shorebirds, requires a coordinated multinational approach.

In December 1994 a workshop was held in Kushiro, Japan to discuss conservation of migratory waterbirds in East Asia - Australasia. The meeting was organised under the auspices of the Environment Agency of Japan and Environment Australia with assistance from the Wetlands International - Asia Pacific and Wetlands International - Japan. The meeting was attended by 92 participants from 16 regional nations.

The workshop produced a summary statement called the “Kushiro Initiative”. The statement called for the:

- preparation of a conservation strategy for migratory waterbirds in the region (Asia-Pacific Migratory Waterbird Conservation Strategy)
- development of action plans for species-groups
- development of networks of internationally important sites for species-groups.

The “Kushiro Initiative” specifically called for the establishment of a network of internationally important sites for migratory shorebirds. This network was to be based on the very successful Western Hemisphere Shorebird Reserve Network that has operated in the Americas since 1985. The Shorebird Site Network forms part of the East Asian-Australasian Migratory Shorebird Action Plan, itself an element of the Asia-Pacific Migratory Waterbird Conservation Strategy.

The Shorebird Site Network has been developed by Wetlands International - Oceania, with funding from Environment Australia.

1.3 Principles of the East Asian-Australasian Shorebird Site Network

The following principles outline the philosophy for the operation of the Network:

- Wetlands and shorebirds are a highly valued natural heritage by societies worldwide.
- All uses of wetlands will be consistent with their long term protection and sustainable use.
- Involvement of local communities in decisions on the management of wetland resources will be encouraged.
- Maintenance of populations of migrant shorebirds requires long term planning, close cooperation and coordination of ongoing and future management activities by all nations in the shorebird flyway.
- Development and the appropriate management of an international network of internationally important sites for shorebirds will greatly enhance the conservation of these and other species of waterbirds using the sites.
- The conservation of sites for migratory shorebirds will act as a catalyst for greater community appreciation of the natural environment.

Geographic coverage of the East Asian-Australasian Shorebird Flyway is shown on Map 1.

1.4 Nature of the Network

The East Asian-Australasian Shorebird Site Network is a cooperative international program for conservation of shorebirds and their habitats. It involves collaboration of site management bodies and local communities. This mechanism is primarily aimed at assisting “on-site” personnel while providing opportunities for assistance from “off-site” conservation agencies and organisations.

An important feature of the Network is that it enables site owners, managers, participating organisations and local people to obtain international recognition for the importance of their site and their conservation efforts.

The Shorebird Site Network is a network of both sites and people. Managers of Network sites are encouraged to establish mechanisms to build community support for the conservation management of the site. All issues related to site management continue to be the responsibility of the site management bodies.

It is not intended that the sites in the Network be limited to totally protected areas declared under national legislation. In developing the Shorebird Site Network concept it has been recognised that shorebird conservation can be achieved within the “wise-use” of a site without the site needing to be a totally protected area

1.5 Goal of the Network

To ensure the long term conservation of migratory shorebirds in the East Asian-Australasian Flyway through recognition and appropriate management of a network of internationally important sites.

1.6 Activities of the Network

Site Management Bodies / National Agencies

- Prepare nomination information for the site.
- Management of the site.
- Development of a site management plan.
- Promote the local recognition of the importance of the site for the conservation of shorebirds.
- Promote the establishment of mechanisms to build community support for the management of the site.
- Participate in exchange of information on the site with other sites in the Shorebird Site Network.
- Assist to promote, at a national level, the nomination of other internationally important sites.

Shorebird Flyway Officer

- Assist in the identification of internationally important sites for the conservation of migratory shorebirds.
- Promote recognition of the importance of these sites for the conservation of migratory shorebirds.
- Provide information and advice to site management bodies on matters relating to shorebird management and other wetland issues.
- Maintain a database on sites in the Shorebird Site Network.
- Assist to provide training opportunities for site managers.
- Facilitate communication and information exchange between site management bodies, researchers and other relevant agencies in the network and other global networks.
- Advise site management bodies on possible funding sources for the management of sites in the Shorebird Site Network.
- Assist in the implementation of the East Asian-Australasian Shorebird Action Plan and the Asia-Pacific Migratory Waterbird Conservation Strategy.

Figure 1. East Asian-Australasian Shorebird Site Network

Network Sites

- 1 Moroshechnaya Estuary
- 2 Yatsu tidal flats
- 3 Yoshino Estuary
- 4 Shuangtaizi Estuary
- 5 Yellow River Delta
- 6 Mai Po - Inner Deep Bay
- 7 Olango Island
- 8 Wasur National Park
- 9 Kakadu National Park
- 10 Parry Lagoons
- 11 Thomsons Lake
- 12 Moreton Bay
- 13 Kooragang Nature Reserve
- 14 Corner Inlet
- 15 The Coorong
- 16 Orielton Lagoon
- 17 Logan Lagoon
- 18 Firth of Thames
- 19 Farewell Spit
- 20 Tonda Wildlife Area
- 21 Tonggin Estuary
- 22 Manko
- 23 Chongming Dongtan
- 24 Yalu Jiang
- 25 Yancheng
- 26 Tokyo Port Wild Bird Park
- 27 Western Port
- 28 Port Phillip Bay
- 29 Dalaihu
- 30 Kashima
- 31 Sungei Buloh



1.7 Joining the Shorebird Site Network

To become a site in the Shorebird Site Network involves the following:

- Preparation of nomination documents by site management body in consultation with the Shorebird Flyway Officer of Wetlands International.
- National Government proposal for the nomination.
- Review of the technical details of the nomination by the Shorebird Working Group and finalisation of site nomination with the site management body and national government.
- Wetlands International - Asia Pacific Council notes the site as part of the Shorebird Site Network.
- Network Site dedication ceremony.

Site management bodies are invited to consult with the Shorebird Flyway Officer of Wetlands International - Asia Pacific when considering the potential nomination of sites. This process will ensure that technical questions about the shorebird criteria can be satisfactorily addressed before a site is formally nominated. Site nominations will be reviewed by the Shorebird Working Group and will formally become part of the Shorebird Site Network following noting by the Wetlands International - Asia Pacific Council.

The Network Site dedication ceremony is envisaged as being organised by the site management body. It provides an opportunity to formally involve politicians, administrators and the local community in a celebration of the importance of the site.

1.8 Biological Criteria to Qualify as a Network Site

The Kushiro workshop agreed that the criteria for sites to qualify for inclusion in the Network should be modelled on the Ramsar Convention's "Special Criteria Based on Waterfowl for Identifying Wetlands of International Importance". This has been supported in subsequent discussions.

As such the criteria for a site is:

- it regularly supports > 20 000 migratory shorebirds; or,
- it regularly supports > 1 % of the individuals in a population of one species or subspecies of migratory shorebird; or,
- it supports appreciable numbers of an endangered or vulnerable population of migratory shorebird.

During migration shorebirds stop at sites for brief periods to replenish their energy reserves and these sites are called "staging sites". A feature of staging sites is that the number of shorebirds supported is much greater than at any one count, because of movement of birds through the site. The guideline for applying the criteria to staging sites will be to use a multiplication factor of 4 for species that stage at these sites. That is the site would need to support a total of 5 000 staging shorebirds or 0.25% of a staging shorebird species. Management bodies are urged to discuss these complex issues with the Shorebird Flyway Officer at any early stage.

It is anticipated that the Shorebird Working Group may re-evaluate the biological criteria as assessments are made of the adequacy of the Network. Consideration may be given to developing various categories of importance for sites within the Network.

1.9 Shorebird Network Support and Administration

Wetlands International

Wetlands International was established in Malaysia in October 1995 through the integration of the Asian Wetland Bureau (AWB), the International Wetlands and Waterbird Research Bureau (IWRB) and Wetlands for the Americas (WA). Wetlands International has three regional councils: Asia-Pacific, Europe-Africa-Middle East and the Americas. The membership of the Councils comprise of representatives of Governments in the region and organisational and technical experts.

Wetlands International combines the regional expertise of AWB with the experience that WA has in the coordination of the Western Hemisphere Shorebird Reserve Network. IWRB bring the skills they have developed in the areas of waterbird research, working with the Ramsar Bureau and the development of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds. At the meeting of the Wetlands International - Asia Pacific Council on 18 March 1996, the representatives from Australia and Japan proposed that the Asia-Pacific Council of Wetlands International establish a framework and mechanism for overseeing and managing the Network. The Council approved this and an Asia-Pacific Migratory Waterbird Conservation Committee and a Shorebird Working Group were established to undertake this task.

Shorebird Working Group

Wetlands International - Asia Pacific Council has established a Shorebird Working Group to oversee the implementation of the East Asian-Australasian Shorebird Action Plan, which includes the development of the Shorebird Site Network. The working group has a membership drawn from Government, non-government organisations and experts actively involved in shorebird conservation.

The Shorebird Working Group meets once each year to review the activities of the Network, provide expert advice on Network development, review site nominations and forward plans. The Shorebird Flyway Officer provides the administrative support for the Shorebird Working Group.

An annual report of the activities of the Network is prepared and circulated to all participating countries and management bodies of Network sites.

Funding for projects initiated under the Network will need to be identified. It is anticipated that the projects will include activities such as newsletters, educational and awareness material, training courses, Network site management and personnel exchange between Network sites.

Shorebird Flyway Officer

In 1999 Environment Australia moved to provide funding to Wetland International - Oceania for a Flyway Officer to work full time. The funding covers salary, travel and office expenses up to mid 2002. The Shorebird Flyway Officer works from the Oceania Office of Wetland International, which is co-located with the Wetlands Unit of Environment Australia in Canberra, Australia.

2.0 PROCEDURE FOR LISTING SITES

2.1 Introduction

These guidelines have been prepared by Wetlands International to assist in the preparation of documentation for nominations of sites to the East Asian-Australasian Shorebird Site Network.

2.2 Listing New Sites

Sites are nominated for the East Asian-Australasian Shorebird Site Network on the basis of use of the site by migratory shorebirds.

In nominating a site the management body undertakes to incorporate the conservation of migratory shorebirds in the management goals for the site.

To nominate a site for the East Asian-Australasian Shorebird Site Network, a detailed description and map of the boundaries of the wetland or wetlands should be provided to Wetlands International.

An Information Sheet has been developed to assist management bodies in providing details on the proposed site (see next section). The sheet is modelled on the Ramsar Wetlands Information Sheet.

Following discussions with the Shorebird Flyway Officer about the completed Site Information Sheet the site management agency should seek the appropriate national endorsement for the nomination. Once this endorsement is obtained the site nomination should be sent to the Chair of the Wetlands International - Asia Pacific Council.

The Shorebird Flyway Officer, in Consultation with the Shorebird Working Group, will review the nomination and prepare a recommendation for the next meeting of the Wetlands International - Asia Pacific Council. At a meeting of the Council the nomination will be noted and at that time it is formally part of the Shorebird Site Network.

Site management agencies are encouraged to conduct a ceremony at the new Shorebird Network site.

2.3 References

Ramsar Convention Bureau, 1997. *The Ramsar Convention Manual: a Guide to the Convention on Wetlands (Ramsar, Iran 1971)*. 2nd Edition. Ramsar Convention Bureau, Gland, Switzerland.

For further information please contact:

Warren Lee Long
Shorebird Flyway Officer
Wetlands International - Oceania
PO Box 787 Canberra 2601 AUSTRALIA

Ph: 61 2 6274 2890 Fax +61 2 6274 2799 Email: warren.leelong@ea.gov.au

3.0 Explanatory Notes and Guidelines for the Information Sheet on Shorebird Network Sites

The management body intending to nominate a site for inclusion in the East Asian-Australasian Shorebird Site Network is requested to complete an Information Sheet. The Information Sheet will provide the basic information of the site and detail how the site meets the criteria for inclusion in the Network.

The Information Sheet has been divided into two sections. **Part 1 (Section 1-13) seeks basic information on the site and it is essential that it be completed.** Part 2 seeks additional information and it is highly recommended that this be completed.

The Information Sheet is based on the Ramsar Information Sheet. If the site proposed for the Shorebird Site Network is an existing Ramsar site then the documentation process is simplified. In this case the Agency need only send a copy of the existing sheets with additional details on Question 8 and 13 of the Shorebird Site Network Site Information Sheet.

The Shorebird Flyway Officer (Warren Lee Long, Wetlands International - Oceania) is available to assist with completion of the Information Sheet. Digital copies of the Information Sheet are available from the Shorebird Flyway Officer.

V V V V V V V V V V

The following notes relate to the various sections on the Information Sheet

PART 1 (Essential)

1. **Date:** The date on which the Information Sheet was completed.
2. **Country:** The name of the country.
3. **Name of site:** The name of the site (alternative names should be given in brackets).
4. **Geographical coordinates:** The geographical coordinates (latitude and longitude) of the approximate centre of the site, expressed in degrees and minutes. If the site consists of two or more discrete units, the coordinates of the centres of each of these units should be given.
5. **Altitude:** The average and/or minimum and maximum elevation of the site in metres above mean sea level.
6. **Area:** The area of the site to be included in the Network, in hectares.
7. **Overview:** A brief summary of the site (limited to not more than two sentences), mentioning principal physical and ecological functions, and its importance for migratory shorebirds.
8. **Justification of Shorebird Site Network criteria:** Please provide shorebird count information that demonstrates that the site meets the criteria of the Shorebird Site Network. That is:
 - it regularly supports > 20 000 migratory shorebirds; or,
 - it regularly supports > 1 % of the individuals in a population of one species or subspecies of migratory shorebird; or,
 - it supports appreciable numbers of an endangered or vulnerable population of migratory shorebird
 - it is a “staging site” supporting > 5 000 shorebirds or > 0.25% of a population stage at the site.

The “staging site” criterion is particularly difficult to apply in Australia and application of this should be discussed with Doug Watkins, Shorebird Flyway Officer, Wetlands International - Oceania.

Also note that some species have several populations that are very difficult to distinguish in the field. In the case of these species the Shorebird Flyway Officer should be contacted for more detailed advice.

Minimum population estimates for each population of migratory shorebird considered to occur in Australia are attached. These are based on “Rose PM and Scott DA. 1997. Waterfowl Population Estimates, Second Edition. Wetlands International Pub. 44”.

9. Wetland Type: Please first specify the position of the site as a Marine or coastal wetland and/or an Inland wetland. Also note if the site includes or is a Man-made wetland. Identify using codes all of the wetland habitat types which are present within the site (see below).

Marine/Coastal

- A Permanent shallow marine waters in most cases less than six metres deep at low tide; includes sea bays and straits.
- B Marine subtidal aquatic beds; includes kelp beds, sea-grass beds, tropical marine meadows.
- C Coral reefs.
- D Rocky marine shores; includes rocky offshore islands, sea cliffs.
- E Sand, shingle or pebble shores; includes sand bars, spits and sandy islets; includes dune systems and humid dune slacks.
- F Estuarine waters; permanent water of estuaries and estuarine systems of deltas.
- G Intertidal mud, sand or salt flats.
- H Intertidal marshes; includes salt marshes, salt meadows, saltings, raised salt marshes; includes tidal brackish and freshwater marshes.
- I Intertidal forested wetlands; includes mangrove swamps, nipah swamps and tidal freshwater swamp forests.
- J Coastal brackish/saline lagoons; brackish to saline lagoons with at least one relatively narrow connection to the sea.
- K Coastal freshwater lagoons; includes freshwater delta lagoons.
- Zk(a) Subterranean karst and cave hydrological systems, marine/coastal

Inland Wetlands

- L Permanent inland deltas.
- M Permanent rivers/streams/creeks; includes waterfalls.
- N Seasonal/intermittent/irregular rivers/streams/creeks.
- O Permanent freshwater lakes (over 8 ha); includes large oxbow lakes.
- P Seasonal/intermittent freshwater lakes (over 8 ha); includes floodplain lakes.
- Q Permanent saline/brackish/alkaline lakes.
- R Seasonal/intermittent saline/brackish/alkaline lakes and flats.
- Sp Permanent saline/brackish/alkaline marshes/pools.
- Ss Seasonal/intermittent saline/brackish/alkaline marshes/pools.
- Tp Permanent freshwater marshes/pools; ponds (below 8 ha), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season.
- Ts Seasonal/intermittent freshwater marshes/pools on inorganic soils; includes sloughs, potholes, seasonally flooded meadows, sedge marshes.
- U Non-forested peatlands; includes shrub or open bogs, swamps, fens.
- Va Alpine wetlands; includes alpine meadows, temporary waters from snowmelt.
- Vt Tundra wetlands; includes tundra pools, temporary waters from snowmelt.
- W Shrub-dominated wetlands; shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils.
- Xf Freshwater, tree-dominated wetlands; includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils.
- Xp Forested peatlands; peatswamp forests.
- Y Freshwater springs; oases.
- Zg Geothermal wetlands

Zk(b) Subterranean karst and cave hydrological systems, inland

Note : “floodplain” is a broad term used to refer to one or more wetland types, which may include examples from the R, Ss, Ts, W, Xf, Xp, or other wetland types. Some examples of floodplain wetlands are seasonally inundated grassland (including natural wet meadows), shrublands, woodlands and forests. Floodplain wetlands are not listed as a specific wetland type herein.

Human-made wetlands

- 1 Aquaculture (e.g., fish/shrimp) ponds
- 2 Ponds; includes farm ponds, stock ponds, small tanks; (generally below 8 ha).
- 3 Irrigated land; includes irrigation channels and rice fields.
- 4 Seasonally flooded agricultural land (including intensively managed or grazed wet meadow or pasture).
- 5 Salt exploitation sites; salt pans, salines, etc.
- 6 Water storage areas; reservoirs/barrages/dams/impoundments (generally over 8 ha).
- 7 Excavations; gravel/brick/clay pits; borrow pits, mining pools.
- 8 Wastewater treatment areas; sewage farms, settling ponds, oxidation basins, etc.
- 9 Canals and drainage channels, ditches.

Zk(c) Subterranean karst and cave hydrological systems, human-made

10. Outline map of site: The most detailed and up-to-date map of the site available should be appended to the Information Sheet. Indicate whether or not a map accompanies the Sheet.

The "ideal" site map will clearly show the area boundaries of the site, scale, latitude, longitude and compass bearing, administrative boundaries (e.g. province, district, etc.), and display basic topographical information, the distribution of the main site habitat types and notable hydrological features. It will also show major landmarks (towns, roads, etc.). Indications of land use activities are especially useful.

The optimum scale for a map depends on the actual area of the site depicted. Generally the map should have a 1:25 000 or 1:50 000 scale for areas up to 10 000 ha; 1:100 000 scale for larger areas up to 100 000 ha; 1:250 000 for areas exceeding 100 000 ha. In simplest terms, the site should be depicted in some detail. For moderate to larger sites, it is often difficult to show detail on an A4 sheet at the desired scale, so generally a sheet larger than this is more appropriate. While an original map is not absolutely necessary, a very clear image is highly desirable. A map exhibiting the above attributes will be easier to scan for computerisation.

11. Jurisdiction: The name of the government authority with: a) territorial jurisdiction over the site, e.g., state, region or municipality, etc.; and the name of the authority with b) functional jurisdiction for conservation purposes, e.g., Department of Environment, Department of Fisheries, etc.

12. Management authority: The name, address and contact details of the body responsible for the direct local conservation and management of the site.

13. Name and address of compiler: The full name, address and organization of the person who compiled the Information Sheet, together with any telephone, fax and e-mail numbers.

PART 2. (OPTIONAL: Additional Information) (please limit this part to a maximum 10 pages).

14. General Location: A description of the general location of the site. This should include the site's distance (in a straight line) and compass bearing from the nearest "provincial", "district" or other significant administrative centre, town or city. The population of the listed centre and its administrative region should also be stated.

15. Physical features: A short description of the principal physical characteristics of the site, covering the following points where relevant:

- geology and geomorphology
- origins (natural or artificial)
- hydrology (including seasonal water balance, inflow and outflow)
- soil type and chemistry
- water quality (physico-chemical characteristics)
- depth, fluctuations and permanence of water
- tidal variations
- catchment area
- downstream area (especially in the case of wetlands that are important in flood control)
- climate (only the most significant climatic features, e.g., annual rainfall and average temperature range, distinct seasons, and any other major factors affecting the wetland).

16. Hydrological values: A description of the principal hydrological values of the site, e.g., its role in the recharge and discharge of groundwater, flood control, sediment trapping, prevention of coastal erosion, and maintenance of water quality.

17. Ecological features: A description of the main habitats and vegetation types, listing the dominant plant communities and species, and describing any zonation, seasonal variations and long-term changes. Mention plant species that have been introduced (accidentally or on purpose) and species which are invasive. Include a brief note on the native natural plant communities in adjacent areas, as well as the present plant communities (including cultivation) if different from the native vegetation. Information on food chains should be included in this section.

18. Noteworthy flora: Information on any plant species or communities for which the site is particularly important (e.g., endemic species, threatened species or particularly good examples of native plant communities). Be sure to identify why each species listed is noteworthy.

19. Noteworthy fauna: A general account of the noteworthy fauna of the site, with details of population sizes whenever possible. Particular emphasis should be given to endemic and threatened species, economically important species and species occurring in internationally significant numbers. Be sure to identify why each species listed is noteworthy. Lists of species and/or census data should not be quoted in full as part of the Information Sheet, but should be appended to this form when available.

20. Social and cultural values: An account (more detail can be given in sections 25-27 below) of the principal social values (e.g., tourism, outdoor recreation, education and scientific research, agricultural production, grazing, water supply, fisheries production) and cultural values (e.g., historical associations and religious significance). Whenever possible, indicate which of these values are consistent with the maintenance of natural wetland processes and ecological character, and which values are derived from non-sustainable exploitation or which result in detrimental ecological changes.

21. Land tenure/ownership: Details of ownership of the site and ownership of surrounding areas (e.g., state, provincial, private, etc.). Explain terms which have a special meaning in the country or region concerned.

22. Current land use: principal human activities in (a) the site itself, and, (b) in the surroundings and catchment. Give information on the human population in the area, with a description of the principal human activities and main forms of land use at the site, e.g., water supply for domestic and industrial use, irrigation, agriculture, livestock grazing, forestry, fishing, aquaculture and hunting. Some indication of the relative importance of each form of land use should be given whenever possible. In section (b), summarise land use in the catchment which might have a direct bearing on the site, and land use in any downstream areas likely to be affected by the site.

23. Factors (past, present or potential) adversely affecting the ecological character of the site: This could include changes in activities, land uses and major development projects at the site or in the

catchment or elsewhere which have had, are having, or may have a detrimental effect on the natural ecological character of the site (e.g., diversion of water supplies, siltation, drainage, reclamation, pollution, over-grazing, excessive human disturbance, and excessive hunting and fishing). When reporting on pollution, special notice should be taken of toxic chemical pollutants and their sources. These should include industrial and agricultural-based chemical effluents and other emissions. Natural events including vegetative succession, which have had, are having or are likely to have an impact on the ecological character of the site should be detailed, so as to facilitate monitoring. Please distinguish between potential and existing adverse factors and where possible, between adverse factors occurring in the site and those external to, but (possibly) affecting, the site. List introduced exotic species and give information on why and how they were introduced. In all cases, where such data exist, supply measurable/quantifiable information to enable more precise monitoring of ecological character.

24. Conservation measures taken: Details of any protected areas established at or around the site, and any other conservation measures taken at the site, such as restrictions on development, management practices beneficial to wildlife, closures of hunting, etc. Include information on any monitoring and survey methods and regimens in place at the site. If a Protected Area has been established, please give the date of establishment and size of the protected area. State whether a management plan exists, if it is officially approved and whether it has been implemented. Any application of "catchment" integrated site management principles, or in a coastal zone, of integrated coastal zone management, should be noted. If only a part of the site is included within a protected area, the area of wetland habitat which is protected should be noted. An assessment of the enforcement of legislation and effectiveness of any protected areas should be given whenever possible. Involvement of local communities and indigenous people in the management of the site should also be described.

25. Conservation measures proposed but not yet implemented: Details of any conservation measures which have been proposed for the site, including any proposals for legislation, protection and management. Summarise the history of any long-standing proposals which have not yet been implemented, and make a clear distinction between those proposals which have already been officially submitted to the appropriate government authorities, and those proposals which have not as yet received official government endorsement, e.g., recommendations in published reports and resolutions from specialist meetings. Also mention any management plan which exists (or is in preparation) but has not yet been implemented.

26. Current scientific research and facilities: Details of any current scientific research and information on any special facilities for research.

27. Current conservation education: Details of any existing programmes and facilities for conservation education and training and comments on the educational potential of the site.

28. Current recreation and tourism: Details of the present use of the site for recreation and tourism, with details of existing or planned facilities. Please state the annual number of tourists. Indicate if tourism is seasonal, and of what type.

29. Bibliographical references: A list of key references relevant to the site, including management plans, major scientific reports, and bibliographies. When a large body of published material is available on the site, only the most important references need be cited, with priority being given to recent literature containing extensive bibliographies. Reprints or copies of the most important literature should be appended whenever possible.

30. List of Appendixes: A list of appendixes to this Information Sheet.

4.0 Minimum Population Estimates and 1% Criteria for the shorebird populations in the East Asian-Australasian Flyway

Popular English Name	Scientific Name	Comment on Distribution	Status	Minimum Population Estimate	SSN 1% Criteria
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	S Asia/W SE Asia/S E Asia		25000	250
Painted Snipe	<i>Rostratula benghalensis benghalensis</i>	Asia		25000	250
Crab Plover	<i>Dromas ardeola</i>	NW Ind Ocean/Red Sea/Gulf		43000	430
Black-winged Stilt	<i>Himantopus himantopus himantopus</i>	SE Asia (nb)		10000	100
Australian Stilt	<i>Himantopus leucocephalus</i>	NZ/Australia/New Guinea		100000	1000
Pied Avocet	<i>Recurvirostra avosetta</i>	E Asia (bre)		10000	100
Oriental Pratincole	<i>Glareola maldivarum</i>	E/SE Asia/Australia		67000	670
Little Pratincole	<i>Glareola lactea</i>	S Asia/NW SE Asia		10000	100
Australian Pratincole	<i>Stiltia isabella</i>	Australia/New Guin/ E Indonesia		60000	600
Pacific Golden Plover	<i>Pluvialis fulva</i>	E/SE Asia/Aust (nb)		100000	1000
Grey Plover	<i>Pluvialis squatarola</i>	E/SE Asia/Aust (nb)		25000	250
Long-billed Plover	<i>Charadrius placidus</i>	E Asia/ Northern SE Asia	NTS	10000	100
Little Ringed Plover	<i>Charadrius dubius curonicus</i>	W/SW Asia & Eastern Africa		25000	250
Little Ringed Plover	<i>Charadrius dubius jerdoni</i>	S/SE Asia (nb)		25000	250
Kentish Plover	<i>Charadrius alexandrinus alexandrinus</i>	SW Asia/Afr (nb)		25000	250
Kentish Plover	<i>Charadrius alexandrinus alexandrinus</i>	S Asia (nb)		25000	250
Kentish Plover	<i>Charadrius alexandrinus dealbatus</i>	E/SE Asia (nb)		25000	250
Double-banded Plover	<i>Charadrius bicinctus bicinctus</i>	New Zealand		30000	300
Lesser Sand Plover	<i>Charadrius mongolus mongolus</i>	E Asia/S SE Asia (nb)		25000	250
Lesser Sand Plover	<i>Charadrius mongolus atrifrons</i>	S Asia/N SE Asia (nb)		100000	1000
Lesser Sand Plover	<i>Charadrius mongolus schaeferi</i>	Thai/Banbl (nb)		10000	100
Lesser Sand Plover	<i>Charadrius mongolus stegmanni</i>	Eastern SE Asia/Aust (nb)		10000	100
Greater Sand Plover	<i>Charadrius leschenaultii leschenaultii</i>	E/SE Asia/Aust (nb)		99000	990
Eastern Sand Plover	<i>Charadrius veredus</i>	E/SE Asia & Australia		44000	440
Northern Lapwing	<i>Vanellus vanellus</i>	E/SE Asia (nb)		25000	250
Grey-headed Lapwing	<i>Vanellus cinereus</i>	E/SE Asia & NE S Asia	NTS	10000	100
Eurasian Woodcock	<i>Scolopax rusticola</i>	Asia		10000	100
Solitary Snipe	<i>Gallinago solitaria solitaria</i>	Northern S/SE Asia & E Asia		10000	100
Solitary Snipe	<i>Gallinago solitaria japonica</i>	Japan (nb)		<10000	
Japanese Snipe	<i>Gallinago hardwickii</i>	Japan/Southeastern Australia	NTS	36000	360
Wood Snipe	<i>Gallinago nemoricola</i>	Eastern S Asia/ N SE Asia	VUL	<10000	
Pintail Snipe	<i>Gallinago stenura</i>	E/SE Asia (nb)		25000	250
Swinhoe's Snipe	<i>Gallinago megala</i>	E/S/SE Asia & N Australia		25000	250
Common Snipe	<i>Gallinago gallinago gallinago</i>	E/SE Asia (nb)		100000	1000
Jack Snipe	<i>Lymnocyptes minimus</i>	E/SE Asia (nb)		10000	100
Black-tailed Godwit	<i>Limosa limosa melanuroides</i>	E/SE Asia & Nw G/Aust (nb)		162000	1600
Bar-tailed Godwit	<i>Limosa lapponica menzbieri</i>	SE Asia/W Aust. (nb)		180000	1200
Bar-tailed Godwit	<i>Limosa lapponica baueri</i>	Alaska/E & SE Asia/E Aust/NZ		150000	1500
Little Curlew	<i>Numenius minutus</i>	NE Asia/New Guinea/Aust		200000	2000
Whimbrel	<i>Numenius phaeopus variegatus</i>	Southern Asia (nb)		40000	400
Bristle-thighed Curlew	<i>Numenius tahitiensis</i>	Western Alaska/Oceania	VUL	10000	100
Eurasian Curlew	<i>Numenius arquata orientalis</i>	E/SE Asia (nb)		10000	100
Far Eastern Curlew	<i>Numenius madagascariensis</i>	E & SE Asia/Aust/NZ	NTS	21000	210
Spotted Redshank	<i>Tringa erythropus</i>	E/SE Asia (nb)		10000	100
Common Redshank	<i>Tringa totanus ussuriensis</i>	S/SE/E Asia (nb)		10000	1000
Common Redshank	<i>Tringa totanus terrignotae</i>	E China (bre)		10000	100
Common Redshank	<i>Tringa totanus craggi</i>	Northwestern Sinkiang (bre)			
Common Redshank	<i>Tringa totanus eurhinus</i>	Kashmir/Western China (bre)		25000	250
Marsh Sandpiper	<i>Tringa stagnatilis</i>	E/SE Asia/Aust (nb)		90000	900
Common Greenshank	<i>Tringa nebularia</i>	E/SE Asia/Aust (nb)		40000	400
Spotted Greenshank	<i>Tringa guttifer</i>	Sakhalin Is/Bangl-Malaysia	END	1000	10
Green Sandpiper	<i>Tringa ochropus</i>	E/SE Asia (nb)		25000	250
Wood Sandpiper	<i>Tringa glareola</i>	E/SE Asia/Aust (nb)		100000	1000
Terek Sandpiper	<i>Tringa cinereus</i>	E/SE Asia/Nw G/Aust (nb)		36000	360
Common Sandpiper	<i>Tringa hypoleucos</i>	E/SE Asia/Nw G/Aust (nb)		30000	300

Minimum Population Estimates and 1% Criteria for the shorebird populations in the East Asian-Australasian Flyway (continued)

Popular English Name	Scientific Name	Comment on Distribution	Status	Minimum Population Estimate	SSN 1% Criteria
Wandering Tattler	<i>Tringa incana</i>	NW North Am/Cent S Pacific		5000	50
Grey-tailed Tattler	<i>Tringa brevipes</i>	E&SE Asia/New Guinea/Aust		25000	250
Ruddy Turnstone	<i>Arenaria interpres interpres</i>	S, E & SE Asia/Aust/NZ (nb)		25000	250
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	Cent/E/SE Asia & Australia	NTS	15000	180
Great Knot	<i>Calidris tenuirostris</i>	E & SE Asia/Aust/Nw G(nb)		330000	3200
Red Knot	<i>Calidris canutus rogersi</i>	New Guinea/Australia /NZ(nb)		255000	2000
Sanderling	<i>Calidris alba</i>	E/SE Asia/Aust/NZ (nb)		10000	100
Red-necked Stint	<i>Calidris ruficollis</i>	E Sib/SE&E Asia/Aust/NZ		471000	4700
Temminck's Stint	<i>Calidris temminckii</i>	E/SE Asia (nb)		10000	100
Long-toed Stint	<i>Calidris subminuta</i>	Sib/E S Asia/E&SE Asia/Aust		25000	250
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	Nw NAm/E Sib/Nw G+Is/Aust/NZ		166000	1700
Dunlin	<i>Calidris alpina sakhalina</i>	E/SE Asia (win)		130000	1300
Curlew Sandpiper	<i>Calidris ferruginea</i>	E/SE Asia & Aust (win)		250000	2500
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	Far E Siberia/Bay of Bengal	VUL	4000	50
Broad-billed Sandpiper	<i>Limicola falcinellus sibirica</i>	E Siberia/E & SE Asia/Aust (nb)		16000	160
Ruff	<i>Philomachus pugnax</i>	Southern Asia (nb)		25000	250
Red-necked Phalarope	<i>Phalaropus lobatus</i>	Eurasia (bre)		100000	1000