

Information Sheet on EAA Flyway Network Sites (SIS) – 2017 version

Available for download from <http://www.eaaflyway.net/the-flyway/flyway-site-network/>

Categories approved by Second Meeting of the Partners of the East Asian-Australasian Flyway Partnership in Beijing, China 13-14 November 2007 - Report (Minutes) Agenda Item 3.13

Notes for compilers:

1. The management body intending to nominate a site for inclusion in the East Asian - Australasian Flyway Site Network is requested to complete a Site Information Sheet. The Site Information Sheet will provide the basic information of the site and detail how the site meets the criteria for inclusion in the Flyway Site Network. When there is a new nomination or an SIS update, the following sections with an asterisk (*), from Questions 1-14 and Question 30, must be filled or updated at least so that it can justify the international importance of the habitat for migratory waterbirds.
2. The Site Information Sheet is based on the Ramsar Information Sheet. If the site proposed for the Flyway Site Network is an existing Ramsar site then the documentation process can be simplified.
3. Once completed, the Site Information Sheet (and accompanying map(s)) should be submitted to the Flyway Partnership Secretariat. Compilers should provide an electronic (MS Word) copy of the Information Sheet and, where possible, digital versions (e.g. shapefile) of all maps.

1. Name and contact details of the compiler of this form*:

Full name: **Mr. Tomoaki Kawabata**

EAAF SITE CODE FOR OFFICE USE ONLY:

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2. Date this sheet was completed*:

October 2, 2014

3. Country*:

Japan

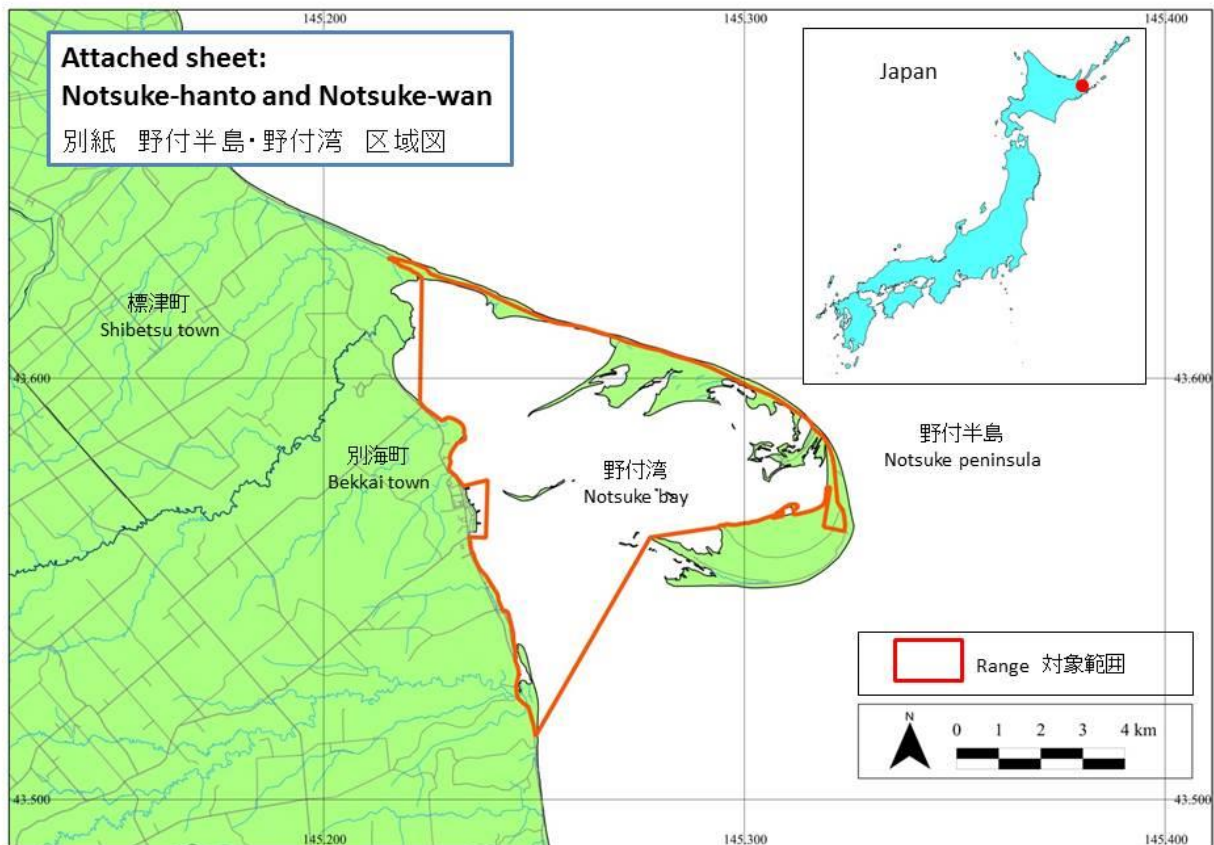
4. Name of the Flyway Network site*:

Accepted English transcription of the Site's name.

Notsuke-hanto and Notsuke-wan

5. Map of site*:

The most up-to-date available and suitable map of the wetland should be appended to the SIS (only in digital format and shape file). The map must clearly show the boundary of the site. Please refer to the "Digitising Site Boundaries in Google Earth" file linked [here](#).



6. Geographical coordinates (latitude/longitude, in decimal degrees)*:

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

Latitude: 43°34' N Longitude: 145°16' E

7. Elevation*: (in metres: average and/or maximum & minimum)

Minimum 0m Maximum 10m

8. Area*:

The total area of the site, in hectares. If the areas of discrete site units are known, please also list each of these together with the names (or labels) used to identify and differentiate these units.

6,053ha

9. General overview of the site*:

A brief (two sentences) summary of the site, mentioning principal physical and ecological functions, and its importance for migratory waterbirds.

Notsuke-hanto and Notsuke-wan is located in the east part of Hokkaido Island. Notsuke-hanto is a fishhook-shaped sand spit jutting into the Nemuro channel. It is the largest sand spit in Japan with a length of 28km. Notsuke-wan is a bay formed between the sand spit and the mainland of Hokkaido island. Since the average depth of the bay is 4m, a large tidal flat and *Zostera* seagrass bed are formed in the bay. This site is one of the vast staging habitats for migratory birds and also a breeding habitat for Red-crowned Crane (*Grus japonensis*).

10. Justification of Flyway Site Network criteria*:

Please provide waterbird count information (with year of latest count) that demonstrates that the site meets the criteria of the Flyway Site Network (Annex 1). That is:

- it regularly supports > 20 000 migratory waterbirds; or,
- it regularly supports > 1 % of the individuals in a population of one species or subspecies of migratory waterbird; or,
- it supports appreciable numbers of an endangered or vulnerable population of migratory waterbird
- it is a “staging site” supporting > 5 000 waterbirds, or > 0.25% of a population stage at the site.

A listing of the populations of migratory waterbirds covered by the East Asian – Australasian Flyway Partnership and the 1% thresholds is attached (Annex 3).

The “staging site” criterion is particularly difficult to apply and application of this should be discussed with the Secretariat. Also note that some species have several populations that are very difficult to distinguish in the field.

Notsuke-hanto and Notsuke-wan regularly supports 20,000 or more migratory waterbirds.

Maximum number of migratory waterbirds in each year				
2008/2009	2009/2010	2010/2011	2011/2012	2012/2013
8,195	19,964	27,496	20,625	23,771

"/" is the year that the number is below the criteria.

(Data: Monitoring sites 1000 on Anatidae by MOE-J)

Notsuke-hanto and Notsuke-wan regularly supports 1% of the individuals in a population of Whooper Swan (*Cygnus cygnus*), Brant Goose (*Branta bernicla*), Greater Scaup (*Aythya marila*), Mongolian Plovers (*Charadrius mongolus stegmanni*) and Ruddy Turnstone (*Arenaria interpres*).

Common name (Scientific name)	The number of individuals 1% basis (WEP5)	Maximum number of individuals				
		2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013
Whooper Swan (<i>Cygnus cygnus</i>)	600	2,424	1,834	2,297	1,809	768
Brant Goose (<i>Branta bernicla</i>)	25	2,692	2180	4,465	3,588	2,327
Greater Scaup (<i>Aythya marila</i>)	2,400	2,496	14,864	8,525	5,443	10,231

(Data: Monitoring sites 1000 on Anatidae by MOE-J)

Common name (Scientific name)	The number of individuals 1% basis (WEP5)	Maximum number of individuals				
		2009	2010	2011	2012	2013
Mongolian Plover (<i>Charadrius mongolus stegmanni</i>)	130	210	161	227	160	459
Ruddy Turnstone (<i>Arenaria interpres</i>)	290	793	1452	366	322	1490

(Data: Monitoring sites 1000 on shorebirds by MOE-J)

Notsuke-hanto and Notsuke-wan regularly supports 0.25% of the individuals in a population of Grey-tailed Tattler (*Heteroscelus brevipes*).

Common name (Scientific name)	The number of individuals 0.25% basis (WEP5)	Maximum number of individuals				
		2009	2010	2011	2012	2013
Grey-tailed Tattler (<i>Heteroscelus brevipes</i>)	110	948	276	326	164	716

(Data: Monitoring sites 1000 on shorebirds by MOE-J)

Notsuke-hanto and Notsuke-wan supports appreciable numbers of an endangered population of Red-crowned Crane (*Grus japonensis*). Also, Notsuke-hanto and Notsuke-wan is one of core nesting sites of Red-crowned Crane (*Grus japonensis*) in Hokkaido.

Common name (Scientific name)	The number of individuals 0.25% basis (WEP5)	Maximum number of individuals				
		2009	2010	2011	2012	2013
Red-crowned Crane (<i>Grus japonensis</i>)	3.75	8	3	6	5	4

(Data: Monthly counting survey in Notsuke-hanto by K. Fujii)

11. Wetland Types*:

List the wetland types present (see Annex 2). List the wetland types in order of their area in the Flyway Network site, starting with the wetland type with the largest area.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland : L • M • N • O • P • Q • R • Sp • Ss • Tp

Ts • U • Va • Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

12. Jurisdiction*:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Ministry of Agriculture/Dept. of Environment, etc.

13. Management authority*:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland and the title and/or name and email address/phone number of the person or persons in this office with direct responsibility for managing the wetland.

Kushiro Nature Conservation Office, Hokkaido Regional Environment Office, Ministry of the Environment, Japan
10-3, Saiwai-cho, Kushiro City, Hokkaido Prefecture

14. Bibliographical references*:

A list of key technical references relevant to the wetland, including management plans, major scientific reports, and bibliographies, if such exist. Please list Web site addresses dedicated to the site or which prominently feature the site, and include the date that the Web site was most recently updated. When a large body of published material is available about the site, only the most important references need be cited, with priority being given to recent literature containing extensive bibliographies.

“500 Important Wetlands in Japan” 2002, Nature Conservation Bureau, Ministry of the Environment

15. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

- **Geology:** It consists of Upper Cretaceous Nemuro group, Quaternary Furen-ko formation, coastal terrace stratum irregularity formed with gravel bed and sand bed, volcanic ash bed, floodplain, and marsh sediment.
- **Geomorphology:** It is the largest sand spit in Japan extending 28 km into the Sea of Okhotsk whose shape is like a fishhook. The sand pit was formed by sand carried by ocean stream and piled up over a long time, and many capes are formed inside the bay.
- **Soil type:** muddy soil and sandy soil
- **Origins:** Natural
- **Water quality:**
 - chlorinity = 15‰
 - pH = Summer: 8.4~8.7 ; Water inside Notsuke-wan shows higher pH than that of open sea, because the seagrass species *Zostera marina* thrives thickly inside Notsuke-wan.
 - Nutrient = both phosphoric acid and silicic acid are dissolved in seawater inside Notsuke-wan and they tend to increase in summer.
- **Water depth:** 4.3m at maximum, 2-3m on average
- **Climate:**
 - Annual precipitation = 1,117mm
 - Annual mean temperature: 5.5 degrees Celsius,
 - Fluctuation of mean temperature in each month: -6.3~+17.7 degrees Celsius

16. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Chashikotsu-gawa, Makunbetsu-gawa and Touhoro-gawa flow in to Notsuke-wan at the base of Notsuke-hanto peninsula. Around Odaito in the middle of Notsuke-wan, Tobikari-gawa, Syunbetsu-gawa, Komuniushi-gawa and Tosyunbetsu-gawa flow into the bay. The main land use of the basin is agricultural land, forest and urban area.

17. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Flyway Network site, and the ecosystem services of the site and the benefits derived from them.

Vegetation of seaside area in the site mainly consists of *Elymus mollis* community where *Salsola komarovii*, *Glehnia littoralis*, *Mertensia maritime*, *Linaria japonica*, *Artemisia stelleriana*, *Ixeris repens* are observed.

In sand dune area, *Rosa rugosa* (Japanese rose) at shrub layer, *Agorostic alba* or *Trifolium repens* (white clover) a herbaceous layer, are dominants.

Vegetation of tidal flat consists of *Triglochin asiaticum*-*Salicornia europaea* community and *Potentilla egedei*-*Carex ramenskii* community.

One of the largest *Zostera* seagrass beds is formed in the bay, and this contributes to improving the water quality and to providing sound habitats to various fishes, crustaceans and birds.

As for birds, 211 species are recorded.

Mammals such as *Cervus nippon yesoensis* (Yezo sika deer), *Vulpes vulpes schrencki* (Schrenk's red fox), *Tamias sibiricus lineatu* (Siberian chipmunk), *Lepus timidus ainu* (Mountain hare), *Phoca largha stejnegeri* (Spotted seal) are recorded.

Inside Notsuke-wan bay, there exist many species of crustacean such as shrimps, Gammaridae, and Collembola species, shellfishes, fishes, and lugworms.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the SIS.*

(Please add here the species which do not come under sec no 14)

Triglochin maritimum [Near threatened (NT) *¹]

Salicornia europaea [vulnerable (VU) *¹]

Carex ramenskii [endangered (EN) *¹]

Triglochin asiaticum [Near threatened (NT)*¹]

Note: *¹ Red List of Threatened Wildlife of Japan. Ministry of the Environment Japan

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 10. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the SIS.*

(Please add here the species which do not come under sec no 14)

Red-crowned Crane (*Grus japonensis*) [Vulnerable (VU)*¹, Endangered (EN)*², Domestic Endangered Species *³, Special Natural Monument*⁴]

Brant Goose (*Branta bernicla orientalis*) [Vulnerable (VU)*¹]

White-tailed Eagle (*Haliaeetus albicilla albicilla*) [Endangered (EN)*¹, Least Concern (LC)*², Domestic Endangered Species *³]

Steller's Sea Eagle (*Haliaeetus pelagicus*) [Vulnerable (VU)^{*1,2}, Domestic Endangered Species^{*3}]

*1 Red List of Threatened Wildlife of Japan. Ministry of the Environment

*2 IUCN Red List of Threatened Species.

*3 Designated under the Law for Conservation of Endangered Species of Wild Fauna and Flora (Species Conservation Law)

*4 Designated under the Law for the Protection of Cultural Properties

21. Social, economic and cultural values:

a) Describe if the site has any general social, economic and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

Fishery targeting shrimp *Pandalus latirostris* and righteye flounders using "Utasebune", a traditional broadside sailing boat without any power source, is prosperous.

This site was once a base for trade with Russia.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? (Double-click the checkbox to check and choose "Checked" under "Default Value" from "Check Box Form Field Options" window)

If yes, tick the box and describe this importance under one or more of the following categories:

- I. Sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- II. Sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- III. Sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- IV. Sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

22. Land tenure/ownership:

a) Within the Flyway Network site:

National land, Prefectural land and Private land

b) In the surrounding area:

National land, Prefectural land, Town-owned land, and private land

23. Current land (including water) use:

a) Within the Flyway Network site:

Fishery, tourism

b) In the surroundings/catchment:

Agricultural land, urban land

24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

a) Within the Flyway Network site:

It is concerned that erosion along the shoreline facing Nemuro-kaikyo channel of Okhotsk Sea might adversely affect over habitats of birds.

b) In the surrounding area:

25. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Flyway Network site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

Ramsar site

Special Protection Area of National Wildlife Protection Area

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate, see Annex 3):

Ia ; Ib ; II ; III ; IV ; V ; VI ; N/A

c) Does an officially approved management plan exist; and is it being implemented?:

If yes, is it being implemented?: If no, is one being planned?

Yes. The designation plan for the national wildlife protection area is in place. The plan includes the items on the conservation and management of Notsuke-hanto and Notsuke-wan.

d) Describe any other current management practices:

26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

None

27. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

(Scientific research)

National Survey on the Natural Environment (Ministry of the Environment)

Monitoring sites 1000 on Anatidae and shorebirds (Ministry of the Environment)

28. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Nature observation programs are conducted at the Notsuke-hanto Nature Center and the nature trails.

29. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Sightseeing tour boats are cruising in two routes between Odaito fishing port and Notsuke-hanto peninsula.

Carriages to enjoy flower beds at Todowara are operated at Notsuke-hanto Nature Center.

30. Threats*

Which of the following threats is present historically – when the threat stopped but the effects are still there (H), currently (C) or potentially (P)?

	Historically	Currently	Potentially
Residential and commercial development			
housing and urban areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
commercial and industrial areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
tourism and recreation areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Agriculture and aquaculture			
annual and perennial non-timber crops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
wood and pulp plantations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
livestock farming and ranching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
marine and freshwater aquaculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy production and mining			
oil and gas drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Information Sheet on EAA Flyway Network Sites

mining and quarrying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
renewable energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Transportation and service corridors

roads and railroads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
utility and service lines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
shipping lanes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
flight paths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Biological resource use

hunting and collecting terrestrial animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
gathering terrestrial plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
logging and wood harvesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fishing and harvesting aquatic resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Human intrusions and disturbance

recreational activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
war, civil unrest and military exercises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
work and other activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Natural system modifications

fire and fire suppression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dams and water management/use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
other ecosystem modifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Invasive and other problematic species and genes

invasive non-native/alien species	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
problematic native species	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
introduced genetic material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pollution

household sewage and urban waste water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
industrial and military effluents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
agricultural and forestry effluents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
garbage and solid waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
air-borne pollutants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

excess energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geological events			
volcanoes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
earthquakes/tsunamis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
avalanches/landslides	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climate change and severe weather			
habitat shifting and alteration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
droughts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
temperature extremes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
storms and flooding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please write here any additional threats and comments/queries you have on the threats.

It is concerned that the increase of *Cervus Nippon yesoensis* (Hokkaido Sika Deer) and alien species such as *Pacifastacus leniusculus trowbridgii*, *Taraxacum officinale*, and *Bombus terrestris* might cause the change of the ecosystem.

1cm per year of ground subsidence is occurring in the Notsuke-hanto peninsula and it is concerned that the change in shoreline might influence its ecosystem.

Annex 1: Criteria for the inclusion of sites in the Flyway Site Network

(From the Partnership Text)

To be considered for inclusion in the Flyway Site Network, this Partnership adopts the following criteria:

- a. Convention on Wetlands (Ramsar, Iran, 1971) criteria for internationally important sites for migratory waterbirds. That is:
 - Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.
 - Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.
 - Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

- b. The staging criteria as applied under the Asia - Pacific Migratory Waterbird Conservation Strategy. That is:
 - i. A staging site should be considered internationally important if it regularly supports 0.25% of individuals in a population of one species or subspecies of waterbirds on migration.
 - ii. A staging site should be considered internationally important if it regularly supports 5,000 or more waterbirds at one time during migration.

- c. Under exceptional circumstances a site can be nominated if it supports migratory waterbirds at a level or stage of their life cycle important to the maintenance of flyway populations. Justification of such nominations will be considered by the Partnership on a case by case basis.

Annex 2: Ramsar Classification System for Wetland Type

The codes are based upon the Ramsar Classification System for Wetland Type as approved by Recommendation 4.7 and amended by Resolutions VI.5 and VII.11 of the Conference of the Contracting Parties. The categories listed herein are intended to provide only a very broad framework to aid rapid identification of the main wetland habitats represented at each site.

To assist in identification of the correct Wetland Types to list in section 19 of the RIS, the Secretariat has provided below tabulations for Marine/Coastal Wetlands and Inland Wetlands of some of the characteristics of each Wetland Type.

Marine/Coastal Wetlands

- 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) – **Karst and other subterranean 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) – **Karst and other subterranean 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) -- **Karst and other subterranean hydrological systems, human-made**

Annex 3: IUCN Protected Areas Categories System

IUCN protected area management categories classify protected areas according to their management objectives. The categories are recognised by international bodies such as the United Nations and by many national governments as the global standard for defining and recording protected areas and as such are increasingly being incorporated into government legislation.

Ia Strict Nature Reserve

Category Ia are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphical features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values.

Ib Wilderness Area

Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

II National Park

Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities.

III Natural Monument or Feature

Category III protected areas are set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.

IV Habitat/Species Management Area

Category IV protected areas aim to protect particular species or habitats and management reflects this priority. Many Category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.

V Protected Landscape/ Seascape

A protected area where the interaction of people and nature over time has produced an area of distinct character with significant, ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.

VI Protected area with sustainable use of natural resources

Category VI protected areas conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems.