

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 of the Conference of the Contracting Parties.

1. Date this sheet was completed/updated:
06/01/2001

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Designation date

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Site Reference Number

2. Country:
The People's Republic of China

3. Name of wetland:
Dafeng *Elaphurus davidianus* National Nature Reserve

4. Geographical coordinates: 120°49'E, 33°05'N

5. Elevation: (average and/or max. & min.) 1-2 meters

6. Area: 78,000 ha

7. Overview: (general summary, in two or three sentences, of the wetland's principal characteristics)
It's a typical coastal mudflat site on the coastline of Yellow Sea with high species diversity and significant ecological, social and economic values

8. Wetland Type (please circle the applicable codes for wetland types; in the present document, the "Ramsar Classification System for Wetland Type" is found on page 9)

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)

Please now rank these wetland types by listing them from the most to the least dominant:

1 3

9. Ramsar Criteria: (please circle the applicable Criteria; the *Criteria for Identifying Wetlands of International Importance* are reprinted beginning on page 11 of this document.)

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

Please specify the most significant criterion applicable to the site: 2

10. Map of site included? Please tick *yes* -or- *no*

(Please refer to the *Explanatory Note and Guidelines* document for information regarding desirable map traits).

11. Name and address of the compiler of this form:

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Please provide additional information on each of the following categories by attaching extra pages (please limit extra pages to no more than 10):

12. Justification of the criteria selected under point 9, on previous page. (Please refer to the *Criteria for Identifying Wetlands of International Importance* appended to this document)

Criterion 2,3: This is a coastal mudflat site with diversified habitats. It supports a wide variety of rare animal species, including a total of 315 bird species, 23 national key protected bird species, . National First Class protected bird species e.g. *Grus japonensis*, National Second Class protected bird species e.g. *Cygnus columbianus*(VU), *Grus grus*, *Asio flammeus*, *Aquila gentiles schvedowi* and *Falco tinnunculus interstinctus*; 12 mammal species e.g. National Grade A protected Milu *Elaphurus davidianus*(EX), National Grade B protected *Hydropotes inermis*, *Arctonyx collaris leucolaemus* and *Mustela sibirica Pallas*; 27 amphibian or reptile species; 599 insect species and 156 fish species.
(According to *China National Wetlands Conservation Action Plan and Science Report of the NR*)

13. General location: (include the nearest large town and its administrative region)

It is located southeast of Dafeng City, 50 km to the downtown Dafeng City and 100 km to Yancheng City.

14. Physical features: (e.g., geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; catchment area; downstream area; climate)

The site is a smooth coastal plain which was naturally formed by the deposition of silt from the Changjiang (Yangtze) Delta to the south and is accreting outwards the sea. The soil is of a coastal saline soil type. Its pH value is 7.7-8.0 and the surface layer from 0-60 cm depth has a salinity of 0.04-1.13%. A network of interconnecting river channels, streams and canals spreads in the plain. Qualities of the surface water are different depending on their locations. Their average salinity value is 0.161% □ pH values range from 6.98 □ 8.08 and depths range from 0.5 □ 3 meters.

The site has characteristics of both sub-tropical and warm temperate climate zones with substantial marine and monsoon features. It is dominated by southeast wind in summer and by northwest wind in winter. This creates diverse seasonal climatic conditions. The mean annual temperature is 14.1 □ and the average annual rainfall is 1,068 mm. The relative humidity is around 80 and the annual frost-free period is 217 days.

15. Hydrological values: (groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.)

Situated in coastal Yellow Sea, this site is abundant in water resources. Wetlands here have a wide range of functions i.e. water conservancy, groundwater recharge during dry season, flood control & reduction of flood damage, sediment retention, shoreline stabilization and maintenance of water quality.

16. Ecological features: (main habitats and vegetation types)

The site is a complex of woodlands, marshy grasslands, marshes and intertidal mudflats with a smooth terrain. Major vegetation types include:

- (1) Salt meadows: This is the major vegetation type in the coastal flat. It is mainly composed of saline soil meadow and salinized soil meadow.
- (2) Marsh vegetation: *Phragmites australis* and *Typha angustifolia* are dominant species, which undergo seasonal changes. The plants wither in winter and grow luxuriantly in summer. Its area expands in rainy season and shrinks in dry season.
- (3) Hydrophytes: They grow in shallow ponds and streams and sometimes mixed within marsh vegetation.
- (4) Vegetation in abandoned farmland: Two sub-types can be classified: one is dominated by *Artemisia scoparia*, *Arthraxon prionodes* and another is dominated by *Setaria viridis*, *Carex doniana* Spreng and *Imperata cylindrica*.
- (5) Deciduous broadleaf woodlands and shrubs: They are introduced species and include three sub-types i.e. *Robinia pseudoacacia*, *Metasequoia glyptostroboides* □ *Robinia pseudoacacia*+*Amorpha fruticosa*. This vegetation type is different with other types and creates relatively independent micro-habitats.

17. Noteworthy flora: (indicating, e.g., which species/communities are unique, rare, endangered or

biogeographically important, etc.)

Glycine Soja, National Second Class protected plant, *Suaeda*, *Phragmites australis*. and *Spartina anglica*, which all are distributed for seashore stabilization;

According to *Master Planning of Da Feng Milu Elaphurus davidianus National Nature Reserve*

18. Noteworthy fauna: (indicating, e.g., which species are unique, rare, endangered, abundant or biogeographically important; include count data, etc.)

Milu *Elaphurus davidianus* is a National Grade A protected species. The nature reserve introduced 39 individuals in 1986 and its population size has reached nearly 500 individuals since then, which is the biggest Milu *Elaphurus davidianus* population in the world. Research on releasing Milu *Elaphurus davidianus* to the wild is ongoing and effort is being made to create the first wild Milu *Elaphurus davidianus* population in the world. In addition, the Nature Reserve supports over 10 National Key Protected animal species such as *Grus japonensis* and *Larus saundersi*.

Master Planning of Dafeng Milu *Elaphurus davidianus* National Nature Reserve

19. Social and cultural values: (e.g., fisheries production, forestry, religious importance, archaeological site, etc.)

Eco-tourism is conducted in the nature reserve. An Education Base for middle and preliminary students and young people, a National Popular Science Education Base and an Experiment Base for Chinese Academy of Sciences have been established in the nature reserve. The nature reserve has been involved in 11 research projects and over 30 papers have been published in national or international journals. The Oriental Milu *Elaphurus davidianus*, Culture Society has been established and 16 publications on Milu *Elaphurus davidianus*, culture have been produced. All these have achieved good social benefits.

20. Land tenure/ownership of: (a) site (b) surrounding area

Wetlands are under state ownership. Local government has issued a Land Use Certificate to Dafeng Milu National Nature Reserve. The surrounding areas are owned by local governments of Jiangsu Province, but a part of them is owned by Chuandong State Farm of Shanghai Municipality.

21. Current land use: (a) site (b) surroundings/catchment

The nature reserve is divided into three parts by the new and old sea dykes. The first part is inside the old sea dyke and is used for providing habitats for Milu, conducting eco-tourism activities and building office and living facilities for the staff. The second part is between the new and old dykes. It is a Milu Raising Base. The third part is outside the new sea dyke and is used for releasing Milu to the wild status.

Dafeng Forest Farm is located to the northwest of the nature reserve. Farmlands are dominant to the south of the nature reserve. Most river channels and water storage areas are in the inter-tidal zone.

22. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects: (a) at the site (b) around the site

A rapid increase of Milu population with heavy pressures on the habitats: The Milu population has increased from 39 individuals in 1986 when the Nature Reserve was established to current 500 individuals. However, their habitat area has not increased accordingly. The habitat in the Nature Reserve only has a limited carrying capacity and it is therefore damaged by the increased Milu population. Milu's favorite forage plants are decreasing in density and have even disappeared in the Nature Reserve. On the contrary, some plants which are not suitable to Milu has significantly expanded and is becoming dominant species. The habitats are deteriorating and their diversity is decreasing.

Agricultural development: This has resulted in a fragmentation of the wetlands. Mudflats have been reclaimed for agriculture and aquaculture and the remnant wetlands exist as isolated islands in the whole area. Many rare and endangered species have lost their habitats and wetland ecosystems are being degraded.

A large number of people enter into the Nature Reserve from outside and it is difficult to

control the situation. Human activities are exerting increasing impacts on wetland species.

Pollution: Only a small part of mudflats is under protection of the Nature Reserve. Pesticides and chemical fertilizers used in the adjacent farmlands are transferred into the Nature Reserve through runoff. This will cause bad impacts on wetland functions and make the Nature Reserve lose large amount of biological resources.

Wetland conservation is hampered by weak power and limited funds of the nature reserve. The Nature Reserve is supervised by the State Forestry Administration and provincial Forestry Department, and administered by Dafeng Municipal Government. It is difficult for the nature reserve to manage the external mudflats with its weak power. On the other hand, lack of fund makes it impossible for the nature reserve to restore or maintain its special wetland ecosystems.

23. Conservation measures taken: (national category and legal status of protected areas - including any boundary changes which have been made; management practices; whether an officially approved management plan exists and whether it has been implemented)

Enhancement of staff training and improvement of wetland conservation mechanism

The Nature Reserve organizes its staff to conduct on-the-job training and fellowship study on knowledge of wetland conservation. This has ensured its ability to conserve wetlands and fulfill tasks assigned by its supervising agencies. Special wetland conservation sections have been set up under the Nature Reserve. Top priority has been given to wetland conservation by the Nature Reserve.

Prohibition of illegal harvest of wildlife resources

Wildlife are state-owned resources. No individual or group is allowed to harvest or collect wildlife resources in wetlands. The Nature Reserve seriously controls illegal activities in accordance with laws relating to wildlife protection. Full-time staff have been assigned to patrol in the nature reserve to stop loss of state-owned wetland resources.

Great efforts made to develop more funding channels

Lack of funds is a barrier to development of the Nature Reserve. Conservation and development of the Nature Reserve are just hollow words without solid financial basis. The Nature Reserve has made every effort to improve its reputation and this has enabled the reserve to raise lot of funds from different channels. The funds raised have been used for infrastructure improvement and habitat maintenance.

Enhancement of public awareness and education

Great efforts have been made to raise public awareness of wetlands through different means such as using public media and disseminating posters and brochures. The public can therefore support and even participate in wetland conservation activities.

Surveys and research of wetland resources and evaluation of wetland values in the Nature Reserve

The Nature Reserve is rich in wetland biodiversity. Its staff has conducted some independent research projects on wetland conservation and wise use. In the meantime, joint surveys and researches of wetland resources have also been carried out in cooperation with universities and research institutions. A short-term wetland conservation plan has been developed and this will promote wetland conservation undertakings in the Nature Reserve.

24. Conservation measures proposed but not yet implemented: (e.g., management plan in preparation; officially proposed as a protected area, etc.)

- (1) Establish a new mudflat nature reserve. (not confirmed yet)
- (2) Establish a new core zone for Milu to disperse their population. (already confirmed)
- (3) Establish wetland monitoring systems (not confirmed yet)
- (4) Wisely use wetland resources (confirmed by the government)
- (5) Establish a Nature Reserve Law Enforcement Team (not confirmed yet)

25. Current scientific research and facilities: (e.g., details of current projects; existence of field station, etc.)

Research projects on behaviors of wild Milu populations and wildlife conservation are under implementation. Projects on public involvement are also under implementation. It is urgent to improve the research equipment in the nature reserve.

26. Current conservation education: (e.g., visitors centre, hides, info booklet, facilities for school visits, etc.)
The Nature Reserve has established an Education Center for Young People. Training courses have been given to nearby middle and preliminary students on importance of wetland conservation. A mobile public education bus is used to publicize knowledge of wetland and wildlife conservation.

At present the Nature Reserve has one publication education center, one exhibition center, one meeting room with a capacity for 120 people and necessary dining room and hotel. These have provided good infrastructure facilities for trainings on wetland conservation. The Nature Reserve has produced and disseminated a total of 20,000 posters and 2,000 awareness leaflets.

27. Current recreation and tourism: (state if wetland is used for recreation/tourism; indicate type and frequency/intensity)

Situated on the coast of the Yellow Sea, the Nature Reserve has fresh air, beautiful beaches, a large number of birds, rare and endangered Milu and *Moschus moschiferus* and dense river channels with good fishes and shrimps. These make it become a good place for tourism and recreation. To date the Nature Reserve has built up a variety of tourism facilities e.g. Bird Garden, Farmer's Paradise, Shooting Range, Milu-watching Tower, Racecourse, Angling Pond and Boulevards. The Nature Reserve has become a focal point for local tourism and the tourists visiting here reach 150,000 person*times every year.

28. Jurisdiction: (territorial, e.g. state/region, and functional, e.g. Dept of Agriculture/Dept. of Environment, etc.)

From the territorial perspective, the Nature reserve is under jurisdiction of Dafeng Municipal Government. From the functional perspective, the Nature Reserve is supervised by Department of Agriculture and Forestry of Jiangsu Province.

29. Management authority: (name and address of local body directly responsible for managing the wetland)

Dafeng Milu National Nature Reserve Administration,
Dafeng Town, Jiangsu Province 224136
Dafeng Milu National Nature Reserve
Tel: +86 515 3395918
Fax: +86 515 3395918

30. Bibliographical references: (scientific/technical only)

Management Plan of the NR, the Management Bureau of the NNR 1997.
Master Planning of Milu *Elaphurus davidianus* National Nature Reserve, the Management Bureau of the NNR 2000

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