13. Information Sheet on Ramsar Wetlands

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

NOTE: It is important that you read the accompanying *Explanatory Note and Guidelines* document before completing this form.

1. Date this sheet was completed/updated:
August 1997

FOR OFFICE USE ONLY.

DD MM YY

Designation date

Site Reference Number

2. Country: Russian Federation

3. Name of wetland: Lower Dvuobje

4. Geographical coordinates: Bolsheobsky site: 65°25'N, 65°17'E; Kunovatsky site: 65°05'N, 66°40'E; Berezovsky site: 64°35'N, 66°02'E (northernmost point); 63°46'N, 65°23'E (S); 63°57'N, 65°00'E (W); 64°27'N, 66°14'E (E)

5. Altitude: Bolsheobsky site: 4-12 m a.s.l.
Kunovatsky site: max 70 m
Berezovsky site: 5-14 m

6. Area: 540,000 ha, including:
Bolsheobsky site: 73,000 ha
Kunovatsky site: 147,000 ha
Berezovsky site: 320,000 ha

7. Overview: A unique valley network including an extended pseudodelta. The area is extremely important for breeding and moulting waterbirds, especially ducks and swans, and is also important as a staging area during the migration seasons. The wetlands are also an important feeding area for sturgeon and whitefish.

8. Wetland Type (please circle the applicable codes for wetland types as listed in Annex I of the *Explanatory Note and Guidelines* document.)

marine-coastal: A · B · C · D · E · F · G · H · I · J · K

inland: L · (M) · N · (O) · (P) · Q · R · Sp · Ss · (Tp) · (Ts)
U · Va · Vt · (W) · Xf · Xp · Y · Zg · Zk

man-made: 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9

Please now rank these wetland types by listing them from the most to the least dominant: Ts,P,O,W,Tp,M.

9. Ramsar Criteria: (please circle the applicable criteria; see point 12, next page.)

1a · 1b · (1c) · (1d) ³ (2a) · 2b · (2c) · 2d ³ (3a) (3b) · 3c ³ 4a · (4b)

Please specify the most significant criterion applicable to the site: 3a

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: A.V.Molochaev: Central Research Laboratory, Hunting Management Office (Losinoostrovskaya Lesnaya Dacha-18, Moscow 129347, Russia)

12. Justification of the criteria selected under point 9, on previous page: 3a - The site is one of the richest waterbird habitat and nesting areas in the world.

13. General location:

(a) Bolsheobsky site: In the floodplain of the Ob River, Yamalo-Nenets Autonomous Area. The site is bounded to the north by the confluence of the channels Uit-As and Narty-As, to the east by the Great Ob River, and to the south and west by the channels Uldym-Posl, Vyd-Posl, Pugshortgort-Posl and Narty-As.
(b) Kunovatsky site: In Yamalo-Nenets Autonomous Area. The site covers a part of the catchment areas of the rivers Kunovat and Logasjegan.
(c) Berezovsky site: In Khanty-Mansi Autonomous Area, Berezovsky and Beloyarsky Districts. The site covers the Ob floodplain from the village of Berezovo to the border of Yamalo-Nenets Autonomous Area.

14. Physical features:

Relief and hydrography

The geological evolution of the West Siberian Plain has created a vast floodplain in the Ob River valley, larger than that along any of the other great rivers in northern Eurasia (*e.g.* the Lena, Yenisei, Amur and Volga). The formation of this vast floodplain is connected with the predominance of negative tectonic movements in modern times. The significant thickness of the alluvial deposits reveals the great duration of the process. River flow is very slow due to the extremely low gradient of the land surface (1.5 m per 100 km), and this promotes intensive accumulation of alluvium and the predominance of lateral erosion.

The floodplain of the Ob River is dissected by a series of river channels of different sizes. The main water course, the Great Ob, in the east is 2-3 km wide. Many smaller channels, ranging in width from several metres to several hundreds of metres, cut through the floodplain in various directions, dividing it into numerous islands of different sizes. The lateral parts of these islands are usually higher than the inner portions, and have a more uneven relief. The lakes and temporary water bodies, or 'sors', formed within the islands, are generally round or oblong in shape, and range in size from several dozens of hectares to several thousands of hectares. The bottoms of the lakes are flat with a thick layer of muddy deposits. The depth of the permanent lakes varies from a maximum of 2-3 m during floods to a minimum of 0.3-0.7 m between floods. Most 'sors' dry out completely between floods.

The Kunovatsky site is situated at the natural border between the Lower Ob lowland and the Poluiskaya highland, at the first and third fluvial terraces above the Ob floodplain. The landscape is predominantly a slightly dissected plain. The catchment area of the meandering rivers Kunovat and Logas-Ugan is covered by mires.

Climate

The area has a severe, continental climate. The winter lasts for 6-6.5 months, with average January temperatures as low as -18° or -20°C. The spring is usually short (30 days) and cold, with abrupt weather changes and frequent return of light frosts. The growing period for vegetation is 130 days. The average temperature of the warmest month is +14-15°C. The autumn is warm and short, with maximum instability in the baric gradient, abrupt temperature changes and frequent early frosts (Alosov, 1969). The average annual precipitation is 450 mm; precipitation in summer is 2-2.5 times as high as that in winter.

Hydrology

The average annual flow of the Ob River is 394 cubic km. However, the hydrological regime is characterized by significant variations in annual flow, and therefore in the spring-summer water levels and extent of flooding on the floodplain. Different portions of the floodplain are inundated for different

periods during the flood. The highest parts of the floodplain are covered with water for an average of 20 days, while lower areas may be flooded for as long as 90 days.

Soils

The seasonal flooding and alluvial activity of the river have played a major role in the evolution of the soils. The repeated accumulation of large amounts of alluvium on any particular area results in the interruption of soil formation, and thus determines soil stratification and poor expression of genetic horizons (Rodnjanskaya, 1973). In areas with a high hypsometric level, a sod soil layer is formed, while at medium levels, meadow soils predominate. Throughout vast areas of the central floodplain depressions, soil formation appears to be in its first stages of evolution. The cause of this phenomenon is to be found in the severe character of the climate, poor vegetation and suppressed activity of microorganisms. Bog soils are not widespread, and are restricted to oxbow lakes covered with vegetation.

The coniferous forests of the Kunovatsky site are underlain by taiga gley soils. Podzolic soils develop on the light deposits.

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15. Hydrological values: No information

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16. Ecological features:

The Dvuobje floodplain is covered in a series of sedge-willow fens, associations of 'sor' vegetation, swamp and peat meadows, and groves of shrubs and willows. The most important feature of the vast floodplain islands is the presence of temporary lakes or 'sors' in their central parts. The mosaic of river channels and islands has been described by Williams (1946), who recognizes three major zones: the rivers themselves, the river terraces, and the central parts of the islands. However, an alternative zonation of the Ob River floodplain is based on differentiation according to ecological levels, or altitudinal zones, and the extent to which each of these is affected by the flood regime (Shennikov, 1941).

The low-level floodplain comprises the vast sor depressions in the northern part of the area. Absolute elevations do not exceed five metres, and the sors are flooded for the longest period, *i.e.* 80-100 days (Baryshnikov, 1961; Petrov, 1979). The mid-level floodplain in the central parts of the Dvuobje area is mostly 5-8 metres high, with only a few ridges rising to 11 metres. These areas are flooded for a shorter period than the low-level sors, *i.e.* 70-75 days (Petrov, 1979). High-level floodplain occupies areas with natural levees along large river channels, and the peaks and upper parts of ridge slopes. The elevation of the lower, gentler slopes of the ridges is about 8-10 m; the elevation of the natural levees and upper parts of the higher ridges reaches 13 m. In some areas, older river terraces rise to 26 m. These are covered with birch-larch and birch-fir forests.

Each of the three ecological levels has its own specific series of plant associations. Most of the low-level floodplain is occupied by sors which are covered with sor meadow vegetation in different stages of development. After the recession of the flood waters, sparse groups of *Arctophila fulva, Eleocharis acicularis, E. palustris* and *Beckmania eruciformis* appear on the lowest areas of the floodplain. As the area dries out, these develop into meadows of *Arctophila, Eleocharis* and *Beckmania*. However, the largest areas are covered with meadows of *Agrostis stolonifera*. Other species present in smaller amounts include *Beckmania eruciformis*, *Equisetum* sp., *Stachys palustris, Ranunculus acris, Galium pallustre, Inula britannica, Alisma* sp. and *Myosotis palustris*. The low-level floodplains account for about 20% of the total wetland area.

Mid-level floodplains are characterized by a series of associations of sedge, reed and grass meadows and groves of shrubby willows, combined with sor meadows along depressions. The central association of the series is hummocky sedge. Hummocks 20-30 cm in height cover about 30% of the area. The herbage grows to a height of up to 100 cm, and has a coverage of 90%. *Carex aquatilis* predominates, with *Galium palustre, Cardamine pratensis* and *Agrostis* sp. present in small quantities. Hummocky reed-grass meadows occur in similar habitats. These are dominated by *Calamagrostis langsdorffii, Carex aquatilis* and *Poa pratensis*. The largest areas in this zone, however, are covered in low, hummocky, swampy sedge-reed-grass meadows (Iljina, 1985). The mid-level floodplains account for about 35% of the total wetland area.

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17. Noteworthy flora: No information. The flora has not been studied.

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18. Noteworthy fauna:

Birds

(a) Migrating species

Dvuobje is located on an important migration route for waterfowl breeding on the vast floodplains of the Ob River and its tributaries, the Yamal tundra and the Taz Peninsula, and wintering in western Europe, southwest Asia and Africa. Under normal conditions, the spring migration is rapid, with most birds stopping only briefly at Dvuobje, but if prolonged cold weather returns in spring, there may be some reversed migration. The total number of waterfowl migrating through the area in spring has been estimated at 300-500 thousand (Molochaev, 1983). The spring migration begins in late April and continues until the end of May.

Ducks are the most numerous waterfowl migrating through the Dvuobje area. Dabbling ducks (northern pintail *Anas acuta*, Eurasian wigeon *A. penelope*, common teal *A. crecca*, mallard *A. platyrhynchos*, garganey *A. querquedula* and northern shoveler *A. clypeata*) account for 80-85% of the total, and diving ducks (tufted duck *Aythya fuligula*, greater scaup *A. marila*, common goldeneye *Bucephala clangula*, velvet scoter *Melanitta fusca* and black scoter *M. nigra*) 10%. The remaining 5-10% are swans (whooper swan *Cygnus cygnus* and Bewick's swan *C. columbianus bewickii*) and geese (bean goose *Anser fabalis*, white-fronted goose *A. albifrons*, lesser white-fronted goose *A. erythropus*, greylag goose *A. anser* and red-breasted goose *Brenta ruficollis*).

The autumn migration of waterfowl begins in the middle of August with the departure of male dabbling ducks that have completed their moult, and continues until mid-October. The species composition is the same as in spring, but the migration is less intense. Birds usually pass through the area quickly.

(b) Breeding and moulting species

Lower Dvuobje is an extremely important breeding and moulting area for waterfowl. The number of breeding birds fluctuates by as much as 3-4 fold from year to year, and is inversely correlated with the maximum water levels on the floodplain. The number of non-breeding and moulting birds is less dependent on water levels. In favourable years, the density of breeding waterfowl on the Ob floodplain ranges from 370 birds per 10 sq.km in early June to 2,000 birds per 10 sq.km in early August, as birds arrive to moult (Stopalov & Pokrovskaya, 1983). In years with medium water levels (*e.g.* 1976, 1980, 1982 and 1984), breeding conditions for waterfowl are optimal. Poor years are those with high flood levels (*e.g.* 1978, 1979, 1981 and 1983). At the same time, in these poor years, the number of birds at the Kunovatsky site increases due to mass migration from the Ob floodplain. In recent years, the average number of waterfowl breeding in Lower Dvuobje area has comprised 700,000 dabbling ducks, 85,000 diving ducks, 200 geese and 6,000 whooper swans *Cygnus cygnus*. Further details are given in Table 1. The total number of waterfowl after the breeding and moulting seasons is between two and three million birds (Krivenko *et al.*, 1980).

In the first half of summer, the birds are rather evenly distributed over the floodplain. During the moulting period, they gather on wetlands with variable water level, and in the second half of summer they move to permanent wetlands. By late summer, they are widely distributed over the oxbow lakes and main lakes.

(c) Rare and threatened species

The wetlands provide habitat for five species of birds currently listed in the Russian Red Data Book:
- Bewick's swan *Cygnus columbianus bewickii*: a passage migrant.
- Red-breasted goose *Branta ruficollis*: a passage migrant.
- Osprey *Pandion haliaetus*: a rare breeding species.
- White-tailed eagle *Haliaeetus albicilla*: a breeding species in low numbers.

- Siberian crane *Grus leucogeranus*: a rare breeding species and occasional passage migrant.

Two of these species, *Branta ruficollis* and *Grus leucogeranus*, are listed as globally threatened in the IUCN Red Data Book.

Table 1

Waterfowl breeding in Dvuobje
Proportions (%) of each species in each of the three ecological levels of the floodplain*

Species	Ecological levels of floodplain		
	high	medium	low
Anas acuta	43.4	62.9	64.4
Anas penelope	19.5	13.3	9.2
Anas crecca & *A. querquedula*	17.9	12.4	16.4
Others	1.8	1.0	1.0
Total dabbling ducks	82.6	89.6	91.0
Aythya fuligula	9.5	8.9	5.9
Aythya marila	3.9	0.2	0.5
Melanitta nigra	1.4	0.6	0.7
Melanitta fusca	0.1	0.2	0.2
Bucephala clangula	0.6	0.1	0.3
Clangula hyemalis	0.3	-	-
Mergus spp.	0.1	0.1	0.1
Total diving ducks	15.9	10.1	7.7
Anser anser	0.1	-	0.1
Cygnus cygnus	1.4	0.3	1.2

* from Molochaev (1983)

Other fauna

Mammals of economic importance include muskrat *Ondatra zibethicus,* stoat *Mustela erminea*, red fox *Vulpes vulpes* and migrating Arctic fox *Alopex lagopus*. Fish include *Coregonus nasus, C. peled, C. lavaretus pidschian, C. muksun, Stenodus leucichthys, Esox lucius, Lota lota, Gymnocephalus cernuus, Perca fluviatilis, Lenciscus lenciscus, L. idus, Rutilus rutilus, Acipenser baeri* and *A. ruthenus*.

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19. Social and cultural values: The Dvuobje area is an important region for fish production. It is an important feeding area for young sturgeon and whitefish which constitute one of the principal sources of food for Khants (the aboriginal people of Western Siberia).

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20. Land tenure/ownership: State owned

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21. Current land use: There is some cattle-grazing and hay-making in the higher areas along river banks. Commercial fishing takes place for whitefish, sturgeon and other smaller fish. There is some trapping of muskrat *Ondatra zibethicus*, stoat *Mustela erminea*, red fox *Vulpes vulpes* and Arctic fox *Alopex lagopus* for their fur. However, the trapping is thought not to have any negative effects on populations.

Large-scale forest cutting takes place in the area adjacent to the Kunovatsky site.

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22. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects: Oil pollution and industrial waste originating from the upper and middle Ob River have a negative effect on all aquatic ecosystems in the Dvuobje region. High flood levels can be very harmful to breeding waterfowl, but catastrophic floods are rare.

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23. Conservation measures taken: All three sites are protected as nature reserves ('zakazniks').

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24. Conservation measures proposed but not yet implemented: It has been proposed to establish a strictly protected area within the existing Kunovatsky Nature Reserve.

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25. Current scientific research and facilities: Some ornithological research has been carried out, but not on a regular basis (Vengerov, 1970; Braude, 1972; Stopalov & Pokrovskaya, 1983). Molochaev (1990) investigated the dynamics of the waterfowl populations, and Maksimov and Merzlyakova (1990) carried out an analysis of hydrological information. Counts of waterfowl are carried out annually.

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26. Current conservation education: A significant amount of publicity has been given to the area through the publication of articles in the popular literature, and radio and television programmes.

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27. Current recreation and tourism: None.

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28. Jurisdiction:
Territorial: Administration of Yamalo-Nenets Autonomous Area (72 Respubliki Street, Salekhard 626600, Russia).
Administration of Khanty-Mansi Autonomous Area (5 Mira Street, Khanty-Mansiisk 626200, Russia).
Functional: State Committee of the Russian Federation for Environmental Protection (4/6 Bolshaya Gruzinskaya Street, Moscow 123812, Russia).

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29. Management authority: Regional Committee for Environmental Protection of Yamalo-Nenets Autonomous Area (Yamalskaya Street 12, Salekhard 626608, Russia).
Hunting Management Department, Administration of Khanty-Mansi Autonomous Area (212 Gagarina St., Khanty-Mansiisk 626200, Russia).

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30. Bibliographical references: Alisov (1969); Baryshnikov (1961); Braude (1972); Braude & Bakhmutov (1986); Iljina (1976, 1985); Yelenevsky (1936); Krivenko *et al.* (1980); Maksimov and Merzlyakova (1990); Molochaev (1983, 1990); Petrov (1979); Rodnjanskaya (1973); Shennikov (1941); Stopalov & Pokrovskaya, 1983); Vengerov, 1970; Williams (1946).
