

# 8. 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

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DD	MM	YY

Designation date

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Site Reference Number

2. **Country:** Russian Federation

3. **Name of wetland:** Veselovskoye Reservoir

4. **Geographical coordinates:** 46°40'-47°10'N, 40°45'-412040'E

5. **Altitude:** c. 4 (1 to 6) m a.s.l.

6. **Area:** 309,000 ha, including 30,000 ha of open water, 56,000 ha of rice fields and 1,200 ha of fish ponds.

7. **Overview:** This wetland complex comprises a chain of reservoirs with numerous limans and shallow bays located in the Zapadny Manych River valley, including rice fields and fish ponds. The site is an important breeding, moulting and staging area for populations of waterfowl in particular geese (*Anser albifrons*, *Branta ruficollis*, *Anser erythropus* and *Anser anser*), dabbling and diving ducks. It is also a wintering area for many waterbird species.

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 .  . P . Q . R . Sp . Ss . Tp . Ts  
U . Va . Vt . W . Xf . Xp . Y . Zg . Zk

man-made:  . 2 .  . 4 . 5 . 6 . 7 . 8 . 9

Please now rank these wetland types by listing them from the most to the least dominant: O, 3, 1.

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

1a . 1b .  1c . 1d . 2a .  2b . 2c . 2d .  3a .  3b .  3c . 4a . 4b

Please specify the most significant criterion applicable to the site: 1c, 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:**

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**12. Justification of the criteria selected under point 9, on previous page:** 1c - the site is an example of a specific wetland (See Section 14); 3a - large concentrations of waterbirds occur at the reservoir during migration and wintering seasons.

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**13. General location:** Located in the Kuma-Manych depression between the rivers Don on the northwest and Bolshoi Egorlyk on the southeast; in Rostov Region, 65 km east and southeast of the city of Rostov. The border of the site matches exactly the boundary of the water protecting zone of Veselovskoye Reservoir, established by the Rostov Regional Administration on 11 October 1989 (No 256).

The northern border of the site passes through the open waters of the Veselovskoye Reservoir near the village of Veselyi. The Proletarskaya Dam is the easternmost point of the site. The northern and southern borders have been established at a distance of 1 to 25 km from the shore.

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## **14. Physical features:**

### Relief, hydrography

The 30,000 ha Veselovskoye Reservoir is 100 km long. The water level varies between 9.4 and 9.9 cm, up to 50-60 cm in windy weather. The largely indented shoreline is 580 km long. There are a few islands located mainly by the inlets of limans. The hydrographic network is little developed. From north, the catchment area is enclosed by the Salo-Manych chain of hills with a few small flat-bottom valleys of the streams Cheprak, Elmuta, Burgusta, Surguchevka, Bolshaya Sadkovka and Malaya Sadkovka. From south, it is bounded by the offsets of Stavropolsky plateau and the Azov-Manych watershed. In the past, wetlands of the area received water supply mainly from the rivers of Bolshoi Egorlyk (with a catchment area of 14,800 sq.km) and Sredny Egorlyk (2,270 sq.km) which were fed by snow, rain and underground water. At present the bulk of water comes from the Kuban River via the Nevinnomyssk canal and Bolshoi Egorlyk River, and from the Don River via Donskoi canal. The amount of water varies considerably depending on both natural and anthropogenic causes. The adjacent lands are mostly ploughed. Rice growing is developed on the northern coast and in the eastern part of the southern coast of the Veselovskoye Reservoir. The total area of rice fields is 50,000 ha.

### Genesis of wetland

The site is located in the western part of the Manych depression which used to be a channel connecting the Black Sea and the Caspian Sea. The modern geomorphology was formed in the period of Lower Khvalynsk (Late Pleistocene) transgression of the Caspian Sea (Popov, 1955; Nikolaev, 1956).

In the 1930s, a project was launched to build the Manych Water Way connecting the Black and Caspian seas. Under this project, the Veselovskoye Reservoir was built in 1932, and the Ust-Manych and Proletarskoye Reservoirs in 1936. Fresh water was drawn into the reservoirs at first from the Kuban River (in 1948 the Nevinnomyssk canal was built) and then from the Don (in 1956 the Donskoi canal was completed). Two dams: the Novo-Manych and Proletarskaya, separating the Veselovskoye and Proletarskoye Reservoirs, were constructed at a distance of 20 km. A hydroelectric power plant was built on the Proletarskaya Dam in 1952. The Bolshoi Egorlyk River falls into the Kazinka channel located between the dams. Its water enters the Veselovskoye Reservoir via the Proletarskaya Hydro.

### Climate

The area has a temperate continental climate and borders an extensive arid region on the east. Droughts and dry winds are frequent. Variations of annual air temperatures reach 80° (Vyazovsky, 1940). The number of days with dry winds is up to 40. Annual precipitation varies from 200 to 600 mm, with maximum in June and minimum in January. Evaporation is up to 650 mm. The mean air temperatures are between +21 and +24°C in summer and between -8 and -9°C in winter, with the mean annual temperature

of about +8°C. The ice cover develops in late November, but often fails during thaws in December. The snow cover is 6 to 7 cm deep. Winter air temperatures vary considerably. Breakup of ice occurs between the 5 and 14 March. The prevailing winds are southeasterly in summer and easterly in winter.

### Hydrology

Before the dams were constructed along the Manych River, it presented a chain of lakes (limans) connected by narrow channels. In the middle reaches of the river, there were more than 10 limans, from 2 to 8 km long. They were supplied by snow, rain and underground water. Spring floods coincided with snow melting. In some springs, the Don waters went hundreds of kilometers up the Manych River (Saldatov, 1972). In summer, rivers and lakes dried out rapidly, only isolated shallows remained. Depth and areas of water bodies underwent continuous changes. When the Manych River was closed off with a succession of dams, fresh water was drawn into the reservoirs at first from the Kuban River and then from the Don.

### Hydrochemical composition of waters

Before the water bodies of the area were desalinated by the Kuban and Don waters, salinity in the lakes reached 20 g l<sup>-1</sup>. Annual concentrations of salts in the water of the Bolshoi Egorlyk River comprised from 2.5 g l<sup>-1</sup> in years of high inundation to 7.8 (maximum: 10-15 g l<sup>-1</sup>) in dry years. The dominant ions were sodium and sulphate although in some years chloride concentrations were higher (Gorokhova & Shumkov, 1957). After the Kuban water was drawn into the reservoirs, the concentration of salts in the Bolshoi Egorlyk River mouth decreased to 0.32 g l<sup>-1</sup> in 1952, with sodium, sulphate and calcium dominating. The composition changed from calcium-carbonate to sodium-sulphate, depending on the amount of Kuban water in the river. Intensive desalination of the Veselovskoye Reservoir took place during the first three years: in 1951 at the Veselovskaya Dam, salinity comprised 1.95 g l<sup>-1</sup> instead of 11 g l<sup>-1</sup> in 1948. Later, some stabilization of the level of salinity was recorded in 1952-1955: it showed a gradual increase from 0.42-1.27 g l<sup>-1</sup> at the Proletarskaya Dam to 1.10-1.46 g l<sup>-1</sup> at the Veselovskaya Dam (Gorokhova & Shumkov, 1957; Kruglova, 1962). Going westward, water became enriched with sodium salts. In the shallow bays of the eastern part of the reservoir, such as Yula, Kugurda and Burgusta, underlying by solonchaks soils, salinity reached 6.22 g l<sup>-1</sup>. After the water diversion from the Kuban started, concentration of nutrients in the Manych wetlands decreased sharply (Kruglova, 1962).

### Soils

In the steppe area between the Don River and the town of Salsk, parent rocks are presented by loess-like rocks and the Don alluvial deposits. The overlying layer of soils is thin, with high contents of salts (Gavrilyuk, 1952). The dominant soil types are the southern and Azov chernozems (black earth). In the southeastern part of the area, the chestnut soils are developed, with salt contents varying through a wide range, solonchaks also occur. In the padings of the valleys, meadow and marshy soils are found. These are mostly wet chernozem-like, lightly-clayey soils with medium concentrations of salts (Kruglova, 1962). The bottom of the reservoir is formed by the Tertiary and Quarternary marine and continental sediments (Chebotarev, 1936).

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**15. Hydrological values:** The reservoir belongs to the Don River catchment and has a profound effect on the salinity and hydrological regime of the Gulf of Taganrog. Wetland vegetation helps to remove pesticides, heavy metals and organic compounds from the water and prevents the eutrophication of the Lower Don.

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**16. Ecological features:** The valley of the lower and middle Zapadny Manych comprises an area with considerable human modification of the environment. The water level in the reservoirs is regulated. A large part of the area is covered by rice fields; temporal shallow water bodies. Wetlands and floodplains around the Ust-Manych Reservoir have been less altered.

The following areas are distinguished within the site in accordance with their ecological features:

(a) The Veselovskoye Reservoir is a desalinated water body, 100 km long, 1-4 km wide. The shore is mainly steep although the top parts of bays and the mouths of streams have gently sloping banks with salty soils. As a result of the change in salinity of the water there was a change in the flora. The number of species increased three times. Now, about 30 species of water plants are found in the reservoir, including *Phragmites australis*, *Bulboschoenus maritimus*, *Typha angustifolia*, *T. latifolia*, *Scirpus lacustris*, *Potamogeton crispus*, *P. perfoliatus*, *P. pectinatus*, *Zannichellia*, *Myriophyllum*, *Ceratophyllum*, *Najas*, *Poligonum*, *Lemna minor* and *Cladophora* sp. In the first years after desalination, *Chara*, *Myriophyllum* and *Potamogeton* sp. disappeared. Later, they reappeared in shallow brackish limans. Reed *Phragmites* turned to be the most tolerant to the changes: it only moved toward the new shore and developed a littoral belt. Before desalination, the phytoplankton composition numbered 123 species. This number reduced to 42 in the first years after the water diversion, and then increased again to 87 (Kruglova, 1962).

Reedbeds and bays provide habitats for lake frog *Rana ridibunda*, European terrapin *Emys orbicularis*, grass snake *Natrix natrix* and water snake *Natrix tessellata*. Breeding birds include great-crested grebe *Podiceps cristatus*, red-necked grebe *Podiceps griseigena*, coot *Fulica atra*, greylag goose *Anser anser*, mallard *Anas platyrhynchos*, pochard *Aythya ferina*, red-crested pochard *Netta rufina*, marsh-harrier *Circus aeruginosus*, six species of herons, bitterns, glossy ibis *Plegadis falcinellus*, spoonbill *Platalea leucorodia*, herring gull *Larus argentatus*, common tern *Sterna hirundo*, little tern *S. albifrons*, whiskered tern *Chlidonias hybrida*, wablers, bluethroat *Luscinia svecica* and reed-bunting *Enberiza schoeniclus*. Along the shore and on low islands, reedbeds provide important refuges for wild boar *Sus scrofa*, European mink *Mustela lutreola*, racoon-dog *Nyctereutes procyonoides* and water vole *Arvicola terrestris*. Steppe polecat *Mustela eversmanni*, stone marten *Martes foina* and red fox *Vulpes vulpes* occur in winter. It is also an important staging area for geese during autumn migrations.

(b) Shore and islands

Differences in elevation, area and micro-relief of the islands as well as yearly and seasonal changes in inundation and salinity determine the occurrence of different stages of vegetation succession in the same growing period. Due to this, three groups of islands are distinguished in the reservoir:

- a few high islands (which are at an elevation of more than 2 m at high water and large in area: about 100 ha) are covered by grasses and used for grazing and agriculture;
- islands of medium elevation (between 1 and 2 m high) are mainly small, covered by meadow and steppe vegetation with reedbeds along the water edge. These provide breeding sites for geese, ducks and egrets;
- low islands (islands which are at an elevation of less than 1.0 m) vary in area. Vegetation is characterized by the solonchak species and reed. Colonies of Ciconiiformes, gulls and terns are found on these islands, as well as breeding geese and ducks. Wild boar *Sus scrofa* is frequent. Some of the islands are occupied by cereal crops. Breeding and migrating populations of geese use the fields for feeding and roosting.

The northern shore of the reservoir is precipitous, its height comprises 10 m by the dams, and one to five m in the middle part. Reeds are found in the mouths of streams and sometimes at the shallows. The southern coast is lower: one to three m high, with an extensive littoral belt of reeds (up to 1 km wide in the lower part of the reservoir). Along the shore willows *Salix alba* have been planted. At low sites, steppe species occur: *Artemisia*, *Juncus* and *Tripolium* sp. At solonetz (alkali soils), *Salsola*, *Atriplex verrucifera* and *Limonium gmelini* are found.

(c) Artificial forests

There are two sites within the area where forests have been planted: the Dubrava, 600 ha in area, on the southern shore near the village of Dalnii and the 800 ha Dubki on the right bank of the Bolshaya Sadkovka ravine. Tree species include oak *Quercus*, elm *Ulmus foliacea*, willow *Salix alba*, *Thelycrania* and some others. In both forests, the following mammals are found: roe deer *Capreolus pygargus*, wild boar *Sus scrofa*, wolf *Canis lupus*, red fox *Vulpes vulpes*, Eurasian badger *Meles meles*, stone marten *Martes foina* and brown hare *Lepus capensis*. Breeding birds include pheasant *Phasianus colchicus*, partridge *Perdix perdix*, wood pigeon *Columba palumbus*, turtle dove *Streptopelia turtur*, kestrel *Falco tinnunculus*, red-footed falcon *Falco vespertinus*, goshawk *Accipiter gentilis*, long-eared owl *Asio otus*, scops owl *Otus scops*, great spotted woodpecker *Dendrocopos major*, hooded crow *Corvus*

*cornix*, magpie *Pica pica*, chaffinch *Fringilla coelebs*, greenfinch *Chloris chloris*, goldfinch *Carduelis carduelis*, whitethroat *Sylvia communis*, barred wabler *S.nisoria* and thrush nightingale *Luscinia luscinia*. A pair of white-tailed eagle *Haliaeetus albicilla* was registered in Dubrava.

(d) Rice fields

Rice growing systems were established at an area of 50,000 ha. For the most part, these fields are abandoned now, used as hay fields or overgrown with reeds. In the drains and canals, *Lemna*, *Hydrocharis morsus*, *Salvinia*, *Typha* and *Phragmites* occur. About 100 species of bird have been registered there. Breeding species include purple heron *Ardea purpurea*, little bittern *Ixobrychus minutus*, mallard *Anas platyrhynchos*, watercock *Gallinula cinerea*, bluethroat *Luscinia svecica*, black-winged stilt *Himantopus himantopus*, common plover *Vanellus vanellus*, white-winged black tern *Chlidonias leucoptera*, kingfisher *Alcedo atthis*, skylark *Alauda arvensis*, collared pratincole *Glareola pratincola* and black-winged pratincole *G.nordmanni*. In winter and spring, before the fields are inundated, they provide feeding areas for geese, rooks, cranes *Anthropoides virgo* and partridges. When the fields are flooded (in May), migrants dominate: little stint *Calidris minuta*, dunlin *C.alpina*, red-necked phalarope *Phalaropus lobatus*, herring gull *Larus argentatus* and black-headed gull *L.ridibundus*. The number of birds is over 3,000 individuals per sq.km. By June, it decreases to 350 individuals per sq.km, and in July, when rice paddies conceal the water, it is not more than 60-80 individuals. In this period, dominant species are mallard *Anas platyrhynchos*, white-winged black tern *Chlidonias leucoptera*, herons and wagtails.

**17. Noteworthy flora:** Marshes, located on the fluvial terraces above the Manych floodplain, are dominated by reed *Phragmites communis* developing associations with *Typha angustifolia*, *T.latifolia* and *Scirpus lacustris*. Herbs are represented by *Sparganium ramosum*, *Butomus umbellatus*, *Alisma plantago-aquatica* and others. In the halophyte communities situated on saline soils, *Bolboschoenus maritimus* dominates the wetland vegetation and *Tripolium vulgare* - the herbs. Species that occur at wet meadows are *Typhoides arundinacea*, *Beeckmaniana eruciformis*, *Tripolium vulgare*, *Suaeda altissima*, *Salicornia herbacea* and some others (Gorbachev, 1974).

Rare and endangered species include *Salvinia natans*, *Crambe koktebelia*, *Vallisneria spiralis*, *Althenia filiformis*, *Fritillaria meleagroides*, *Tulipa biebersteiniana*, *T.schrenkii*, *Asparagus tenuifolia*, *Stipa zalesskii* and *S.ucrainica* (Zozulin & Fedyeva, 1986).

**18. Noteworthy fauna:**

Birds

(a) Migrating species

The valley of the Western Manych lies on a major migration route which connect Western Siberia and the European part of Russia with the Black Sea, Mediterranean Sea, Middle Asia, Northern and Eastern Africa and other important wintering areas. It is one of the largest staging areas in Russia, in particular for geese.

In spring, most birds pass through the area quickly, but some of them use the area as a stop-over site. The passage occurs in waves and lasts for quite a long time. The most numerous migrating ducks are mallard *Anas platyrhynchos*, pochard *Aythya ferina* and tufted duck *A. fuligula*. Eurasian wigeon *Anas penelope*, garganey *Anas querquedula* and northern pintail *Anas acuta* are less abundant. Mergansers *Mergus merganser* and *M.squamatus*, goldeneye *Bucephala clangula*, red-crested pochard *Netta rufina*, shoveler *Anas clypeata*, shelduck *Tadorna tadorna* and roody shelduck *T. ferruginea* are not numerous. Migrations start in late February- early March and last till the end of April. Geese are dominated by white-fronted goose *Anser albifrons*, migrating through the area in late March- early April. Up to 240,000 individuals have been counted during this period (Kazakov *et al.*, 1990). Red-breasted goose *Branta ruficollis* and lesser white-fronted goose *Anser erythropus* have been found in the flocks of white-fronted geese. The passage of greylag goose *Anser anser* lasts for a long time: birds, which belong to the local population, arrive to the area in late February- early March; transitory migrants occur in March and April. Flocks of 7,000 to 10,000 geese are found at the rice fields in May-June. Swans include whooper swan

*Cygnus cygnus* and mute swan *Cygnus olor* passing the site mainly in the first half of March. Numbers of whooper swan are from 2,000 to 3,000 individuals. The passage of mute swan often continues until the end of May. In the period between 20 and 30 May, 1,500 young birds were counted. Coot *Fulica atra* is a mass migrant. It arrives to the area in late February- early March, the main passage takes place in mid-March. Waders include ruff *Philomachus pugnax*, dunlin *Calidris alpina*, curlew sandpiper *C. estacea*, little stint *C. minuta*, grey plover *Pluvialis squatarola* and common plover *Vanellus vanellus*. They migrate from mid-March till mid-May. Gulls and terns migrate to the site in large amounts including herring gull *Larus argentatus*, black-headed gull *L. ridibundus*, little gull *L. minutus*, terns *Sterna hirundo* and *Chlidonias* sp. Common species which occur during migration are great black-headed gull *Larus ichthyaetus*, slender-billed gull *L. genei*, Mediterranean black-headed gull *L. melanocephalus* and little tern *Sterna albifrons*. Crane *Grus grus* is frequent during migrations. It is regularly observed on the southern shore in April in amounts of 300 to 400 individuals.

The autumn migration is usually rapid, with most birds passing quickly through the area, but in some years ducks and geese stay until the freezing of waters. The numbers of migrating geese are estimated at 1.5 to 3.0 million individuals, with wide variations from year to year. Common migrating species also include waders, gulls, terns, herons and coot.

#### (b) Breeding and moulting species

Over 50 wetland-dependent species of breeding birds have been noted in the area. Ciconiiformes are represented by grey heron *Ardea cinerea*, purple heron *A. purpurea*, great white egret *Egretta alba*, little egret *E. garzetta*, night heron *Nycticorax nycticorax*, squacco heron *Ardeola ralloides*, bittern *Botaurus stellaris*, little bittern *Ixobrychus minutus*, spoonbill *Platalea leucorodia*, glossy ibis *Plegadis falcinellus*. These birds concentrate in colonies which show great variations in number and species composition (Kazakov, Lomadze & Goncharov, 1972; Kazakov & Lomadze, 1991, 1992). According to the 1990-1991 counts, the numbers of birds were as follows: grey heron *Ardea cinerea*: 1,000 pairs; purple heron *A. purpurea*: 150-200 pairs, great white egret *Egretta alba*: 400-500, little egret *E. garzetta*: 500-600, night heron *Nycticorax nycticorax*: 250-300, spoonbill *Platalea leucorodia*: 200, glossy ibis *Plegadis falcinellus*: 300 pairs. Anatidae breed in the reedbeds and on the islands, including mute swan *Cygnus olor* (25-30 pairs), greylag goose *Anser anser* (800-900 pairs), mallard *Anas platyrhynchos* (2,500-3,000 pairs), garganey *Anas querquedula* (150-300) and pochard *Aythya ferina* (200-400 pairs). Red-crested pochard *Netta rufina*, white-eyed pochard *Aythya nyroca*, gadwall *Anas strepera* and shelduck *Tadorna tadorna* occur less frequently. Other breeding species include grebes, several species of Rallidae, wablers, marsh-harrier *Circus aeruginosus*, hooded crow *Corvus cornix*, common plover *Vanellus vanellus*, redshank *Tringa totanus*, pratincoles *Glareola pratincola* and *G. nordmanni*, black-winged stilt *Himantopus himantopus* and avocet *Recurvirostra avosetta*.

The importance of the Veselovskoye Reservoir for moulting is not very high, though males of mallard *Anas platyrhynchos*, coming from the adjacent areas, and greylag geese from the local population concentrate on the reservoir in summer.

#### (c) Wintering species

The numbers and species composition of wintering birds depend heavily on the winter air temperatures, depth of snow and ice cover, and fodder resources (Kazakov *et al.*, 1990). Dominant species are mute swan *Cygnus olor*, greylag goose *Anser anser*, white-fronted goose *Anser albifrons*, mallard *Anas platyrhynchos*, pochard *Aythya ferina*, tufted duck *A. fuligula* and smew *Mergus albellus*. Species which occur less frequent include red-breasted goose *Branta ruficollis*, common teal *Anas crecca*, Eurasian wigeon *Anas penelope*, goldeneye *Bucephala clangula*, black-necked grebe *Podiceps nigricollis*, little grebe *P. ruficollis*, coot *Fulica atra* and watercock *Gallixrex cinerea*. At sites of open water, which always remain near dams, winter such species as bittern *Botaurus stellaris* and great white egret *Egretta alba*. The total number of wintering waterbirds may exceed 50,000 individuals (including mallard: 30,000; greylag goose: up to 9,000; white-fronted goose: 6,000-8,000). Up to 10 white-tailed eagles *Haliaeetus albicilla* are found in the area. At the rice fields and along the shore, great bustard *Otis tarda*, buzzard *Buteo buteo*, harriers and other birds occur in winter.

#### Other fauna

The following mammals are found in the area: wild boar *Sus scrofa*, wolf *Canis lupus*, red fox *Vulpes vulpes*, corsac fox *Vulpes corsac*, roe deer *Capreolus pygargus*, Eurasian badger *Meles meles*, stone marten *Martes foina*, racoon dog *Nyctereutes procyonoides*, brown hare *Lepus europaeus*, polecat *Mustela putorius* and water vole *Arvicola terrestris*. Species of rare occurrence include marbled polecat *Vormela peregusna* and great bat *Nyctalus noctula*.

Amongst the fish are *Cyprinus carpio*, *Stizostedion lucioperca* and *Abramis brama*. Reptiles and amphibians are characterized by lake frog *Rana ridibunda*, European terrapin *Emys orbicularis*, grass snake *Natrix natrix* and water snake *Natrix tessellata*.

#### Rare and endangered species

Rare and endangered species listed in the IUCN Red Data Book and the Red Book of the Russian Federation include 19 bird species and two species of mammals.

#### (a) Birds:

- White pelican *Pelecanus onocrotalus* and Dalmatian pelican *P. crispus* occur at Lake Kazinka, which they use as a feeding area.
- Spoonbill *Platalea leucorodia*: breeding species, to 200 pairs.
- Glossy ibis *Plegadis falcinellus*: breeding species, to 300 pairs.
- Black stork *Ciconia nigra*: migrating species; registered regularly.
- Osprey *Pandion haliaeetus*: occurs during migrations.
- White-tailed eagle *Haliaeetus albicilla*: one breeding pair; in autumn, 30 to 40 individuals are found in the area, and up to 10 in winter.
- Tawny eagle *Aquila rapax*, imperial eagle *A. heliaca* and short-toed eagle *Circaetus gallicus*: rare migrating species.
- Golden eagle *Aquila chrysaetos*: occurs in winter.
- Shikra *Accipiter badius*: is assumed to breed in the area.
- Peregrine falcon *Falco peregrinus*: unit findings in autumn and winter.
- Lesser white-fronted goose *Anser erythropus*: occurs during migrations in the flocks of white-fronted goose *Anser albifrons*, comprising 1-3% of the white-fronted geese numbers.
- Red-breasted goose *Branta ruficollis*: in spring from a minimum of 100 to a maximum of 2,500 individuals; in autumn: 5,000-10,000 (Kazakov *et al.*, 1990) to a maximum of 25,000 (Krivenko *et al.*, 1978); in winter: 400 to 600 individuals.
- White-headed duck *Oxyura leucocephala*: unit findings in autumn.
- Great black-headed gull *Larus ichthyaetus*: breeding species, 15-20 pairs (Kazinka Lake).
- Black-winged stilt *Himantopus himantopus*: breeding species, 50-70 pairs.
- Avocet *Recurvirostra avosetta*: breeding species, to 30 pairs; the population has shown a decline in recent years.
- Stone-curlew *Burhinus oedipnemus*: migrating species.
- Great bustard *Otis tarda*: occurs during migrations in spring and autumn; sometimes it is found in winter.
- Little bustard *Tetrax tetrax*: rare migrating species.

#### (b) Mammals:

- Marbled polecat *Vormela peregusna*: occurs sporadically.
- Great bat *Nyctalus noctula*: rare visitor.

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**19. Social and cultural values:** The economic value of the fishing industry used to be very high, with annual catches reaching 150,000 metric centners. After the change in salinity took place, the catches decreased ten times. The fresh water from the reservoir is used for irrigation purposes. The area has a good potential for the development of outdoor recreation, ecotourism and health resorts. The wetland also offers good opportunities for carrying out research on migrating waterfowl.

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**20. Land tenure/ownership:** The reservoir is state owned (national property). Lands adjacent to the reservoirs are mainly owned by resource-users with collective proprietary rights.

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**21. Current land use:** The major activities include irrigated agriculture, grazing, hay harvesting, fishery and waterfowl shooting.

The area of irrigated fields has largely decreased in recent years. The remaining rice growing systems receive water from the Donskoi canal. Water from the Veselovsky reservoir is diverted to the Azovsky irrigation canal. Grazing traditionally takes place on the islands and shore areas. The stock has decreased in the past few years, and some part of natural hay fields is abandoned.

Fishery: 30 species of fish are found in the reservoir. *Cyprinus carpio*, *Stizostedion lucioperca*, *Abramis brama* and several others are of commercial value. After the desalination and construction of rice fields, the fish population decreased considerably. Presently, juveniles of freshwater species are released in the reservoirs every year.

Waterfowl shooting is allowed for 3 days every week in the period from late September till the end of November. The daily harvest is limited.

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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:** The reservoirs are polluted with pesticides from agricultural lands. As a result, the population of *Cyprinus carpio* has greatly decreased and crawfish Astacidae almost disappeared.

The amount of fresh water diverted from the Kuban and Don is likely to decrease in the near future. This will entail an increase in salinity of the waters.

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**23. Conservation measures taken:** The reservoirs and all adjacent lands are allotted to societies of hunters and fishermen. The eastern part of the Veselovskoye reservoir, which is the most important for migrating and wintering waterfowl, is managed by the Rostov Society. The hunting pressure on these important habitats is maintained relatively low.

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**24. Conservation measures proposed but not yet implemented:** Existing conservation proposals include the following activities:

- to decrease the amount of applied pesticides through changing the methods of growing rice;
  - to develop a complex management programme for the reservoirs, taking into consideration such matters as the water uses, variations in water level of the Ust-Manych Reservoir, which need to be reduced, and conservation of all natural resources in the area;
  - to extend the Ramsar site in area.
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**25. Current scientific research and facilities:** Research on the Manych natural features began many years ago with publications by P.S.Pallas (1788), K.M.Bar (1856), H.Barbot de Marni, H.Kryzhin and K.Kostenkov (1861). The soils and vegetation of the area were first described by A.Krasnov (1886), I.K.Pachosky (1892), M.I.Prasolov (1910) and B.B.Polynov (1914). Detailed research into the Zapadny Manych biology began in the 1940s including ichthyological studies (I.L.Syrovatsky 1941,1951), research into phytoplankton (Z.N.Mikhailovsky 1949), zooplankton (N.N.Kharin 1948) and benthos (F.D.Mordukhai-Boltovsky 1948), investigation of water vegetation (G.D.Pashkov 1948). Since the fresh water was drawn into the reservoirs, all research have been carried out by the Biological Research Institute of Rostov University. Regular ornithological research began with fish-eating birds: Oleinikov 1953; Oleinikov & Danilova 1958; Ciconiiformes: Yazykova 1973; Kazakov *et al.* 1981, *etc.*; Anatidae: Kazakov, Lomadze & Goncharov 1987,1988; grebes: Oleinikov *et al.* 1973; rare species: Kazakov, Lomadze & Goncharov 1980,1986,1988, *etc.* There is a number of publications devoted to waterfowl migrations: Krivenko *et al.* 1978; Fertikov & Krivenko 1978; Gavrilin *et al.* 1980; Kazakov *et al.* 1990.

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**26. Current conservation education:** A wide popularization of knowledge about the Veselovskoye reservoir is conducted by the University of Rostov and other local scientific and environmental organizations. The most important publications are 'The Nature of Rostov Region', 'Natural resources of the Northern Caucasus' and 'Rare animals of the Rostov Region' (the latter is in press).

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**27. Current recreation and tourism:** The local societies of hunters and fishermen have 40,000 members. In recent years, foreign tourism has been promoted with hunting and fishing as the main activities.

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**28. Jurisdiction:**

Territorial: Administration of Rostov Region (112 Sotsialisticheskaya Street, Rostov-on-Don 344050, 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:** There is no single management structure responsible for the status of wetlands and resource uses in the area. This function is performed by the administrations of Rostov Region and its districts, by the Regional Committee for Environment (46/176 Voroshilovsky Pr., Rostov-on-Don 344010), the Hunting Management Office (89 Bolshaya Sadovaya Street, Rostov-on-Don 344006), the Don Basin Office on Management and Conservation of Waters (239 Gorky Street, Rostov-on-Don 344022), Fishery Management Office "Azovrybvod" (21/2 Beregovaya Street, Rostov-on-Don 344007) and Forestry Management Office (1a Zelenaya Street, Rostov-on-Don 344066).

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**30. Bibliographical references:** Bar (1856); Barbot de Marni, Kryzhin & Kostenkov (1861); Chebotarev (1936); Fertikov & Krivenko (1978); Gavrilin *et al.* (1980); Gavrilyuk (1952); Gorbachev (1974); Gorokhova & Shumkov (1957); Kazakov *et al.* (1981, 1990); Kazakov, Lomadze & Goncharov (1980, 1986, 1987, 1988); Kharin (1948); Krasnov (1886); Krivenko *et al.* (1978); Kruglova (1962); Mikhailovskiy (1949); Mordukhai-Boltovskiy (1948); Nikolaev (1956); Oleinikov (1953); Oleinikov & Danilova (1958); Oleinikov *et al.* (1973); Pachosky (1892); Pallas (1788); Pashkov (1948); Polynov (1914); Popov (1955); Prasolov (1910); Saldatov (1972); Syrovatsky (1941,1951); Vyazovsky (1940); Yazykova (1973); Zozulin & Fedyaeva (1986).

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