

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

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

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

24 August 2004 and 1 November 2005

3. Country:

Kyrgyz Republic

4. Name of the Ramsar site:

CHATYR KUL

5. Map of site included:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps.

a) **hard copy** (required for inclusion of site in the Ramsar List): *yes* -or- *no*

b) **digital (electronic) format** (optional): *yes* -or- *no*

6. Geographical coordinates (latitude/longitude):

N 40° 37.055': E 75° 18.391'

7. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

The lake is located on a high altitude plateau in the south of Kyrgyzstan, close to the Chinese border and the Torugart Pass. The lake is c 400 km south west of the largest lake in Kyrgyzstan, Issyk Kul, and c 200 km south west of Naryn town, the main town of Naryn Oblast (the largest Administrative unit) within which the lake is located.

8. Elevation: (average and/or max. & min.)

3,530 m ASL

9. Area: (in hectares) 16,100 ha

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Chatyr Kul is a slightly saline high altitude lake lying in an elongated basin at 3,530 m ASL in the central Tien Shan Mountains. It is subject to no human disturbance at present. Its ecological interest lies in the fact that it is totally fishless, with the consequent presence of rare ecological communities and the waterbird populations which are associated with the lake. The lake is important for a relative large breeding-colony of Bar-headed Geese *Anser indicus* and it is an important site for moulting ducks. The undisturbed lake and the available food (plankton, and the amphipod) are essential for these populations. Therefore, since the end of last century, the lake is a protected area with a 2 km buffer zone around it.

At present Chatyr Kul Lake is a part of the Karatal Japyryk State Reserve, and has a protecting status.

11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

12. Justification for the application of each Criterion listed in 11. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1:

Chatyr Kul is a completely undisturbed high altitude and fishless lake in the central Tien Shan Mountains, a wetland type which is becoming increasingly rare in its pristine form. Nowadays, this form of lakes are considered unique as in most lakes fish is introduced which consequently changed the ecological character. There are still fishless lakes on higher altitude but they lack biological richness as Chatyr Kul. Absence of fish and unique climatic conditions allowed development of rare ecological communities unaffected by interactions with fish. A prime example is the zooplankton community which is dominated by large forms and would not be present together with fish. Several of these zooplankton species may themselves be rare and restricted in distribution. The lake ecosystem is very vulnerable.

Criterion 2:

The surroundings of the lake are important for a population of IUCN Red listed (2004), vulnerable Argali sheep (*Ovis ammon*).

Criterion 3:

The ecosystem of the lake contains species adapted to high altitudes which are representative of the mountain regions of Central Asia. There is more fieldwork to be done and analyses to be made to describe the ecological richness of Chatyr Kul.

Criterion 4:

The lake is critical in providing refuge for moulting ducks, especially the Ruddy Shelduck (*Tadorna ferruginea*) - the numbers (between 5,000 and 10,000 birds) present on the lake represent a large proportion of the Central Asian population. In addition, the lake provides a refuge for moulting of 5 species of dabbling ducks (more than 500 individuals) and 4 species of diving ducks (more than 1,000 individuals).

Dabbling ducks:

Common teal (*Anas crecca*), Mallard (*Anas platyrhynos*), Northern Pintail (*Anas acuta*), Garganey (*Anas querquedula*);

Diving ducks:

Common Pochard (Aythya ferina), Ferruginous duck (*Aythya nyroca*), Tufted Duck (*Aythya Fuligula*);

Breeding and moulting birds are occupying the lake when there is no ice. It is well known in other parts of the world that *Tadorna* species are moulting in large concentrations and are extremely vulnerable during that period.

Criterion 5:

The lake supports more than 20,000 waterbirds during moulting and breeding periods. During winter the lake is covered by ice and snow.

During the last expedition in 2004, 52 species of birds were recorded with total estimates of 21903 (latest two expedition records are provided in Annex I). The lake takes an important part in the Asian population life of a Ruddy Shelduck. Nowadays, the lake plays significant role in dabbling ducks' lives especially for *Anas* species (about 15 000) and common coots. Diving-ducks like *Aythya* species were indexed a little bit less. At the same time of the second part of August, migrations of most of waterbirds just begin and September to October is the period of high point migration. The role of the lake is higher because it is a temporary passage for migration to the South of Asian Continent.

Criterion 6:

The lake supports far more than 1% (500) of the Central Asian population of *Tadorna ferruginea* during moulting. It is estimated that around 40% of the entire Central Asian population of this duck species is moulting here (Ref Criterion 4).

The range of *Tadorna ferruginea* estimation provided in Criterion 4 is 5000-10000, which is 10-20% more than the 1% threshold. However, according to the last expedition, the total count was 17,800, about 35.6% of the entire Central Asian population.

13. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) **biogeographic region:** The lake lies within the Southern Palearctic.

b) **biogeographic regionalisation scheme** (include reference citation):

Atlas of the Kyrgyz Republic. Natural resources and conditions. Volume 1. 1987. Moscow. Pages 123-124.

14. 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.

Chatyr Kul is located at the south-west end of a high altitude basin aligned from south-west to north-east. It is roughly ovoid, 23 km long by 10 km wide, and generally shallow, 2-3 m in most places, although there are deeper pockets. The maximum depth has been recorded as 16.5m, with an average depth of 3.8m. It is a lake of internal drainage with no outflow. There is one large permanent inflow, the Ak-say River, which flows from the northeast end of the basin to the lake, with three minor

permanent inflows, the Muz-Ter, Tue-Bel and Tash-Bulak rivers. There are numerous seasonal inflows from the ridges bordering the basin to the north and south.

The lake is slightly saline with a salinity of 2 ppt. Levels of Dissolved Oxygen are around 40-60% of saturation values during the summer and the pH is slightly alkaline. Water transparency is high, with submerged plants growing down to a depth of at least 3 m.

The climate is continental modified by altitude. The lake is covered by ice from September to June, and the thickness of the ice is 1.5 m, which means that a considerable volume of the water in the lake is frozen for 9-10 months of the year.

15. Physical features of the catchment area:

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

The plateau on which the lake is located is bound to the north by the NE-SW aligned At-Bashi ridge which rises to 4,700m asl. and to the south by the Kakshalto ridge, rising to almost 5,500 m ASL, which possesses permanent snowfields and glaciers on its northern slopes. The ridge forms the border between Kyrgyzstan and China. The vegetation of the basin consists of sparse low-growing herbs and grasses, with evidence of salt encrustation in some areas.

16. Hydrological values:

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

There is no human impact in Chatyr-Kul. The lake has a very low degree of mineralization 0.5-1.0 milligrams per liter (chloride, hydrocarbonate, sodium and magnesium type of mineralization). The water of Chatyr Kul Lake is yellowish-green, water transparency is up to 4 meter.

Present day the lake's area is being decreased, but change of shoreline is not regular. For example: there are small gulfs appeared in the south-western part of the lake. This process is being done because of thawing of frozen condition of underground.

There are mineral sources in the south part of Chatyr-Kul Lake. Mineralization of these sources is 5-7 gr. per liter, pH = 5,8-6,0. Flow rate 1866 m³ in winter and 3629 m³ in summer. There are many trace elements: strontium and lithium. These mineral sources are very useful for health (endocrine disease). Chemistry of sediment is magnesium carbonate and calcium carbonate, clay and ferruginous clay. The lake's salinity is 2 ppt., water transparency is high. Catchment area is about 1050 km². Hydrologic balance of Chatyr-Kul is steady negative because of substantial evaporation of water surface. It is observed the trend of decrease of water level last decades. Flood-creation is due to snow thawing according to the hydro-meteorological conditions in this region.

17. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

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)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

1. Q (permanent saline/brackish/alkaline lakes)
2. M (permanent rivers/streams/creeks)
3. N (seasonal/intermittent/irregular rivers/streams/creeks)
4. S_s (seasonal/intermittent saline/brackish/alkaline marshes/pools)
5. S_p (permanent saline/brackish/alkaline marshes/pools)

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

Due to the high water transparency and the shallowness of much of the lake basin, there is a luxuriant growth of submerged macrophytes over much of the bottom of the lake. The dominant macrophyte is a *Potamogeton* species with filiform leaves similar to *P. pectinatus*. A *Myriophyllum* species is also common. Most banks slope gently into the water, with little or no emergent macrophytes. Large accumulations of decaying *Potamogeton* are found around the edges of the lake, which presumably have been detached during stormy weather.

The invertebrate fauna is interesting, with very high populations of the amphipod of *Gammarus krevetki* associated with the submerged macrophyte beds, but also being found in plankton samples. Other species of zooplankton consist of large forms. There are two species of calanoid copepods, the larger of which may be as long as 4 mm. Many individuals of this species are coloured an intense red due to deposition of carotenoids, presumably as a protection against the intense UV radiation. A large daphnid is also present. The rotifer fauna is sparse, with *Brachionus* species being dominant.

There are no fish in the lake, which may explain the very large size of the zooplankton species, due to a lack of predation.

Fish seem only to be found in some of the inflow streams coming from the south and the west. The major species is Severtzov's scaled osman, which is considered to be a dwarf form of the Scaled osman, *Diptychus maculatus*.

Around the main world breeding area of the Bar-headed Goose (Tibetan Plateau) there are several areas where this rare goose species is also breeding. Son Kul and Chatyr Kul belong to these areas as the geese prefer rather high-mountain waterbodies. For most locations the food for their juveniles is very critical and it seems that Chatyr Kul fulfils their needs. Next to this the lake is important for a large population of moulting ducks. All ducks are vulnerable during this period. In West-Europe large areas are protected to assist another Tadorna-species during their moulting period; full protection and easy available food are essential for such moulting populations.

Moreover, at the end of the summer period, there is a large variety of birds which rests around the lake before they continue their migration over the Himalaya Mountains. Chatyr Kul provides a last stop before they will cross the mountains. More information is needed to fully establish the importance of the lake in this regard, and more research and field surveys are sorely needed. However, far more than one hundred species are using this route. It is the only place where typical Pamir-species like Brown-headed Gull (*Larus brunnicephalus*) can be observed.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) 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 RIS.*

Not much known at present.

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

21. Social and 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.

The lake basin makes up part of the Silk Road, which runs into the basin and into China via the Torugart Pass. There is a 10th Century caravanserai, Tash Rabat, in the At-Bashi Mountains immediately to the north of the lake. The valley is served as pastures in summer.

22. Land tenure/ownership:

(a) within the Ramsar site: Stateland

(b) in the surrounding area: Stateland

23. Current land (including water) use:

(a) within the Ramsar site: The lake's resources are virtually unutilised by humans.

(b) in the surroundings/catchment: There is a very low population in the basin, being confined to livestock grazers who spend the short summer season (June to September) in the basin in order to graze horses, and an army garrison close to the border with China near the southern side of the lake. There are no boats on the lake.

The basin forms a very important trade route in China via the Torugart Pass, with the road running along the southern edge of the lake. Practically, it is the only connection between Kyrgyzstan and China.

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 Ramsar site: After the Decision of the Government of the republic from 25 July, 2005 # 310 "On the giving to Chatyr Kul Lake the status of wetlands on international importance" Chatyr Kul Lake has become especially protected nature area - state reserve, where any human disturbances were forbidden (especially fishing).

(b) in the surrounding area: Not known at present.

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

The lake, together with a 2 km wide "buffer zone" encircling the lake, is a State Reserve (Zapovednik)

26. Conservation measures proposed but not yet implemented:

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

Stricter conservation measures are needed together with awareness raising on the regional/global uniqueness of the lake in order to prevent the possibility of fish introductions into the lake. Protection against poaching should be increased also in winter-periods. The military presence should be developed as assistance in the aims of the protected areas and not regarded as a threat.

27. Current scientific research and facilities:

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

There are no facilities for research on the lake, but surveys are irregularly made on the avifauna and the general ecology of the lake. It is strongly advised to increase the fieldwork.

28. Current conservation education:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.
None

29. Current recreation and tourism:

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

There is no tourism in the lake basin at present and there are no possibilities for this.

30. Jurisdiction:

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

The protected area is managed by the State Forest Service of the Kyrgyz Republic.

31. 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. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

State Forest Service of the Kyrgyz Republic.

Chairman - Mr. **Burhanov Aitkul**

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32. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

-Konurbaev, A.O. & Timirkhanov, S.R. Looking at fishes in Kyrgyzia. Bishkek, 2003

-Van der Ven, J. Looking at Birds in Kyrgyz Republic. Bishkek, 2002

-Vorobeev, G.G. & Van der Ven, J. Looking at Mammals in Kyrgyzia. Bishkek, 2003

Other literature in Russian and Kyrgyz languages.

ANNEX I

Birds' quantity in the Chatyr-Kul Lake in May 2004

Species	Quantity
Ardea cinerea – grey heron	3
Anser indicus – bar-headed goose	162
Tadorna ferruginea – ruddy shelduck	185
Anas platyrhynchos - mallard	17
Anas crecca – common teal	2
Anas strepera - gadwall	36
Anas acuta – northern pintail	2
Anas querquedula - garganey	320
Anas clypeata – northern shoveler	35
Aythya fuligula - tufted duck	110
Fulica atra – common coot	190
Pluvialis squatarola – grey plover	9
Charadrius mongolus – lesser sand plover	2
Himantopus himantopus – black-winged stilt	54
Recurvirostra avosetta – pied avocet	2
Tringa totanus – common redshank	1
Tringa erythropus – spotted redshank	34
Arenaria interpres – rare migrant	1
Larus ridibundus – black-headed gull	20

Birds' quantity in the Chatyr-Kul Lake in August 17-20, 2004

Species	Quantity
Podiceps nigricollis – Black-necked Grebe	243
Anser anser – Greylag goose	19
Anser indicus – Bar-headed goose	243
Tadorna ferruginea – Ruddy shelduck	17800
Anas platyrhynchos – Mallard	120
Anas crecca – Common teal	100
Anas strepera - Gadwall	5
Anas penelope – Eurasian wigeon	24
Anas acuta – Northern pintail	300
Anas querquedula - Garganey	500
Anas clypeata – Northern shoveler	250
Aythya ferina – Red-crested pochard	60
Aythya nyroca – Ferruginous pochard	120
Aythya fuligula - Common pochard	200
Anas sp.	12 500
Fulica atra – Common coot	1200
Circus aeruginosus – Eurasian Marsh Harrier	1
Buteo rufinus - Long-legged Buzzard	1
Falco cherrug - Saker falcon	2
Falco columbarius - Merlin	1
Apus apus – Common Swift	300
Pluvialis squatarola – Grey plover	2
Charadrius dubius – Little ringed plover	1
Charadrius alexandrinus – Lentish plover	1
Charadrius mongolus – Lesser sand plover	39
Tringa ochropus – Tringa ochropus	6
Tringa glareola – Wood Sandpiper	21
Tringa nebularia – Common Greenshank	1

<i>Tringa totanus</i> – Common Redshank	9
<i>Tringa erythropus</i> – Spotted Redshank	1
<i>Actitis hypoleucos</i> – Common Sandpiper	2
<i>Terekia cinereus</i> – Terek Sandpiper	4
<i>Arenaria interpres</i> - Turnstone	7
<i>Philomachus pugnax</i> - Ruff	12
<i>Calidris temminckii</i> - Temminck's Stint	26
<i>Larus cachinnans</i> – Yellow-legged Gull	1
<i>Larus ichthyaetus</i> – Pallas's Gull	9
<i>Larus ridibundus</i> – Black-Headed Gull	136
<i>Streptopelia orientalis</i> – Oriental Turtle Dove	1
<i>Upupa epops</i> – Common Hoopoe	1
<i>Corvus corax</i> – Common Raven	22
<i>Locusttela naevia</i>	1
<i>Phylloscopus trochiloides</i> – Greenish warbler	4
<i>Oenanthe isabellina</i> - Isabelline Wheatear	3
<i>Montifringilla nivalis</i> – White-winged Snowfinch	30
<i>Motacilla feldegg</i> - Black-headed Wagtail	3
<i>Motacilla cinerea</i> – Grey Wagtail	3
<i>Motacilla alba</i> – White Wagtail	1
<i>Lanius phoenicuroides</i> – Turkestan Shrike	1
<i>Eremophila alpestris</i> – Horned Skylark	65
<i>Alauda arvensis</i> – Eurasian Skylark	1