Information Sheet on Ramsar Wetlands (RIS)

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

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

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1. Date this sheet was completed/updated:
28 January 2002

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2. Country Nepal

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3. Name of wetland: Jagadishpur Reservoir

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4. Geographical coordinates:
27° 35' 00.0" N; 83° 05' 00.0" E

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5. Elevation: (average and/or max. & min.) 197 m asl

6. Area: (in hectares) 225 ha

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7. Overview: (general summary, in two or three sentences, of the wetland's principal characteristics)
The reservoir constructed for irrigation purpose, it is harnessed by rock-fill dike. The surface area of reservoir is 157 ha. An earthen dike runs north to south from the centre of the reservoir. The eastern part has shallow water body whereas the western part of the reservoir is more deeper and completely covered by water.

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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:
Human made 6, 9, 3

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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 and 6

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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).

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

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P.O. Box 860
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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** Assemblage of some rare, endangered, monogeneric plant species holds importance for conservation of genetic diversity. The flora species include endangered Serpentine *(Rauvolfia serpentine),* rare Pondweed *(Potamogeton lucens),* threatened Lotus *(Nelumbo nucifera)*. Resident Indian Sarus Cranes (*Grus antigone antigone*), the regionally endangered and the tallest flying bird species globally vulnerable in the world, utilize this habitat. Resident stork species (Open-bill and White-neck) are the recommended species for protection due to their (all stork species) susceptibility to become endangered species through various anthropogenic causes.

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13. General location: (include the nearest large town and its administrative region)
10 km north of Taulihawa, district HQ of Kapilbastu District; 40 km from Butwal (32 km west from Butwal on east west high way and 8 km south of Banganga Bridge along the eastern embankment road); Niglihawa VDC, Kapilvastu District, Lumbini Zone.

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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)
Jagadishpur Reservoir is constructed over the location of Jakhira Lake and agricultural land, in the early 1970s and the construction of rock-fill dike took place in the early 1980s. The water is fed from the nearby river known as Banganga. Suspended silts and nutrients coming from the inlet are deposited in the mouth of the reservoir. Water depth varies

during the summer and winter crop plantation period, the maximum depth varies from of 5 - 7 metres and minimum of 2 -3 metres at the deepest area. The catchment area of the river is the Churia range of hills. The reservoir is surrounded by cultivated land and there are few smaller lakes known as Sagarhawa and Niglihawa situated near the periphery, these lakes provide which serves as a buffer habitat for bird movements.

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Water quality analysis report of the samples taken on July 12, 1997

- According to Sechi disc measurement, the reservoir is hypertrophic.
- Total phosphorus content indicates that the lake is hypertrophic
- Total nitrogen concentration indicates that the lake is eutrophic.
- Chlorophyll 'a' content is below the minimum international value (3-5 mg/L) set for surface water.

The oligotrophic state of the lake is shown by the low content of chlorophyll 'a'. The low content of chlorophyll 'a' is likely to be due to rich growth of macrophytes which prevent the penetration of daylight needed for photosynthesis. However, with respect to nutrient content and Sechi depth the lakes can be considered to be eutrophic to hypertrophic. This conclusion is based on a one-time analysis during the monsoon.

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15. Hydrological values: (groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.)
The diversion of the water from the source of the river Banganga helps to reduce flood and irrigate the cultivation. Sediments trapped at the mouth of the reservoir have encouraged the reed bed growth thus providing habitat for waterfowls. The waterbed recharges the groundwater of the surrounding cultivation.
The area is characterised by its low elevation (197m), tropical monsoon climate of hot rainy summer and cool, dry winter.

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16. Ecological features: (main habitats and vegetation types)
The Banganga reservoir lies on the Indo Malayan bio-geographical realm of the Terai physiographic zone. It is the extension of the Gangetic plain in the outer foothills of the Churia or Siwaliks, in the central part of Nepal Himalaya.

In general the vegetation is in submerged succession stage, with patches of floating species and reed swamp formations. Marsh meadow patches and extensive mudflat fringed by marsh lie at the northern part. The dense aquatic macrophyte indicates advancing eutrophic status and high sedimentation rate. This implies rapid succession toward marsh meadow condition and reduction in life span of this reservoir in the absence of desiltation tank.

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17. Noteworthy flora: (indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc.)
The terrestrial vegetation is dominated by plantation of Sisoo (*Dalbergia sisoo*) and Khair (*Acacia catechu*) along the dike. The wetland vegetation consists of Morning Glory (*Ipomea carnea* ssp. *fistulosa*), Cattail (*Typha angustifolia*). The aquatic vegetation is represented by extensive coverage of floating leafed species mainly Lotus (*Nelumbo nucifera*) followed by Wild Rice (*Hygrorhiza aristata*) and Pondweed (*Potamogeton nodosus*). The free floating species include Water Velvet (*Azolla imbricata*) and Duckweed(*Lemna spp*.). The abundant submerged species include Water Nymph (*Naja minor*), Hydrilla (*Hydrilla verticillata*) and Hornwort (*Ceratophyllum demersum*).

Table: ***Important Floral Species Occurring at Jagadishpur***

Botanical Name	English Name	Status
Acacia catechu	Cutch tree	HMG /Nepal's gazetted species banned for transport, export

		and felling (Shrestha and Joshi, 1996). Tropical riverine species.
Rauvolfia serpentina	Serpentine	Endangered tropical species (IUCN list) (Shrestha and Joshi, 1996).
Ceratophyllum demersum	Hornwort	Monogeneric species (Shrestha and Joshi, 1996), Troublesome aquatic weed (Spence and Bowes, 1993)
Trapa bispinosa	Water chestnut	Monogeneric species (Shrestha and Joshi, 1996).
Hydrilla verticillata	Hydrilla	Troublesome tropical aquatic weed (Spence and Bowes, 1993)
Eichhornia crassipes	Water hyacinth	Troublesome tropical aquatic weed (Spence and Bowes, 1993)
Naja minor	Water nymph	Abundant submerged sp.
Potamogeton nodosus	Pond weed	Common, temperate species
Potamogeton lucens	Pondweed	Rare , temperate species
Ipomoea carnea ssp. *fistulosa*	Morning glory	Tropical exotic shrubby weed
Dalbergia sisoo	Sissoo	Tropical riverine tree species.
Nelumbo nucifera	Lotus	Religiously important , threatened plant species (Subramanyam, 1962)
Hygrorhiza aristata	Wild rice	Rare species, Wild relative of rice (Shrestha and Vaughan, 1989)

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

Twenty-five fish species were recorded during the July 1997 survey. They belong to 12 families of seven orders (Table). It includes species that have been recorded from lowland Terai only, fish species that are threatened and common species that value as prey species for wader and waterfowls.

Ecologically Jagadishpur Reservoir is an eutrophic waterbed. The upper surface of the reservoir supports species such as *Cirrhinia sps*, Notopterus notopterus. A number of fish such as *Oxygaster bacaila*, *Puntius spp*, *Chanda spp* which are potential larvivorous feeder at the surface water. The middle layer of the lake is often dominated by coarse fishes such as *Chana spp, Xenetodon cancila* and *Mystus spp*. The bottom layer is dominated by *Clarius batrachus*, *Hetropneustis fossilis*. These fishes provide food source for a host of other herpetofauna, birdlife and mammals occurring in and around this lake.

Table: Important fish species recorded from Jagadishpur Reservoir

Scientific name	Local name	Status
Notopterus notopterus	Patara, Patali	found in Terai only
Cirrhinus reba	Reba	do
Puntius chola	Sidre	Threatened (Susceptible category)
Oxygaster bacaila	Chalwa	found in Terai only
Mystus bleckeri	Tengeri	do
Chana Marulius	Sauri	do
C. striatus	Bhoti	do
Nandus nandus	Dhewari	do
Colisa fasciatus	Khesara	do
Mastacembulus punctatus	Kathgainchi	do
Heteropneustus fossilis	Singhe	Abundant
Chana gachua	Bhoti	Abundant

Reptiles Occurrence of reptile could not be confirmed occurring directly. It could support few water snake species and other snakes common in the Central Terai. There is an unconfirmed report of occurrence of Gharial sighted by a local hunter.

Table: ***Noteworthy reptile species occurring at Jagadishpur***

Scientific name	Common name	Remarks
Calotes versicolor	Common Garden Lizard	

Birds: A total of 42 bird species were recorded during the July 1997 survey despite the heavy rain. Given are the list of important wetland dependent bird species recorded during different survey (winter and summer). The site provides important resident, wintering and stopover habitat for waders, water fowls and the small passerines. Important group of bird occurring in this reservoir are the grebes, cormorants, heron/egrets, storks, ducks, tern, coots, waterhen, jacanas, munias and bunting.

Table: ***Important bird species record from Jagadishpur Reservoir***

Bird Name	A	B	C	D	Remarks
Podicipidae (Grebes)					
Little Grebe (*Tachybaptus ruficollis*)	-	100	39	10	Resident
Great Crested Grebe (*Podiceps cristatus*)	-	10	9	-	Migratory
Phalacrocoracidae (Cormorants)					
Little Cormorant (*Phalacrocorax niger*)	3	-	-	20	Resident
Great Cormorant (*P. carbo*)	-	-	36	-	Migratory
Ardeidae (Herons and Egrets)					
Indian Pond Heron (*Ardeola grayii*)	-	-	11	5	Resident
Cattle Egret (*Bubulcus ibis*)	15	-	-		"
Little Egret (*Egretta garzetta*)	3	-		5	"
Intermediate Egret (*E. intermedia*)	-	10	2	3	"
Great Egret (*E. alba*)	-	10	7	-	"
Gray Heron (*Ardea cinerea*)	-	2	2	-	Migratory
Purple Heron (*A. purpurea*)	2	-	-	5	Resident
Cinnamon Bittern (*Ixobrychus cinnamomeus*)	-	-	-	2	Migratory
Yellow Bittern (*I. cinensis*)	-	-	-	2	" /Vulnerable
Ciconidae (Storks)					
Open-bill Stork (*Anastomus oscitans*)	180	-	18	5	Resident *NRDB (S)
White-necked Stork (*Ciconia episcopus*)	1	-	-	1	Resident *NRDB (S)
Anatidae (Ducks and geese)					
Lesser Whistling *Duck (Dendrocygna javanica*)	6	500	#800	10	Resident
Eurasian Wigeon (*Anas penelope*)	-	55	400	-	Migratory
Gadwall (*A. strepera*)	-	100	800	-	"
Common Teal (*A. crecca*)	-	-	200	-	"
Mallard (*A. platyrhynchos*)	-	40	790	-	"
Northern Pintail (*A. acuta*)	6	100	690	-	"
Gargeny (*A. querquedula*))	1	100	205	4	"
Northern Shoveler (*A. clypeata*)	-	50	300	-	"
Cotton Teal (*Nettapus coromandelianus*)	6	50	-	5	Resident NRDB (S)
Red crested Pochard (*Netta rufina*)	-	-	20	-	Migratory
Common Pochard (*Aythya ferina*)	-	200	690	-	Migratory
Ferruginous Duck (*A. nyroca*)	-	50	*405	-	Migratory
Tufted Duck (*A. fuligula*)	-	-	40	-	Migratory
Sturnidae (Terns and Gulls)					
Black bellied Tern (*Sterna acuticauda*)	50	-	-	-	Migratory
Accipitrididae (Birds of Prey)					
Lesser Spotted Eagle (*Aquila pomarina*)	1	-	-	-	Resident
Rallidae (Rails, coot and waterhens)					
Common Moorhen (*Gallinula chloropus*)	-	-	500	4.	Resident + breeding
Purple Gallinule (*Porphyro porphyro*)	-	-	260	20	Resident
Common Coot (*Fulica atra*)	4	1000	700	3	Migratory
Jacanidae (Jacanas)					
Pheasant Tailed Jacana (*Hydrophasianus chirurgus*)	85	-	-	25	Migratory

Bronze-winged Jacana (*Metopidus indicus*)	5	15	19	5	Resident
Gruidae (Cranes)					
Sarus Crane (*Grus antigone*)	2	-	-	-	Resident/IUCN Endangered
Alcedinidae (Kingfishers)					
White breasted Kingfishers *(Halcyon smyrnensis*)	-	-	2	2	Resident

Legend: A= June 1988 Sunny; B= Jan 1992 Sunny; C= Feb. 1995 Sunny; D= July 1997 Rainy

Mammals: Due to its position being surrounded by cultivated land and its moderate size it is not a suitable site for large mammal conservation. Though it could support small population of Smooth Coated and other common species such as Jungle Cat, Golden Jackal, Indian Fox etc.

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19. Social and cultural values: (e.g., fisheries production, forestry, religious importance, archaeological site, etc.)
This water body have great potential to stock fish for commercial production. The local populace living adjacent to reservoir resort to fishing and harvest wetland resources. They also use the water for domestic purpose including bathing and laundry.

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20. Land tenure/ownership of: (a) site (b) surrounding area
(a) Site: State owned
(b) Surrounding Area: Privately owned cultivation

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21. Current land use: (a) site (b) surroundings/catchment
A) Within the Proposed ramsar site, the areas of various landuses are as follows:
Cultivated Land: 60 ha; Pond: 80 ha; Swamp: 70 ha; Bush and Shrubs: 7 ha.

B) The reservoir lies in Niglihawa Village Development Committee (VDC). VDC is a local administrative unit. The current use of reservoir includes fishing, grazing, fuel wood and fodder collection, supply of water for irrigation in 6,200 ha. of cultivated land. The surrounding area of reservoir includes agricultural lands and farming is the major occupation of the local community.

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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: (a) at the site (b) around the site

Threats to the proposed Ramsar sites include:

- Deposition of aquatic macrophytes, particularly of extensive colony of lotus, water nymph and hornwort,
- Exploitation animals and birds
- Alien invasive species like water hyacinth
- Water pollution from agricultural chemicals (fertilizers and pesticides)

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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)

Management of the irrigation system is looked after by the authorities of Department of Irrigation, Kapilvastu District Office. It has been constructed predominantly for irrigation purpose, water level fluctuates according to the demand for irrigating cultivated land.

- Green belt plantation around the perimeter of the reservoir.
- Construction of rockfill dike on all sides of the reservoir and the sluice gate has maintained the water level.
- Maintenance of water level and utilization of lake water for irrigation by the construction of an irrigation canal.
- District Irrigation Office is assessing to Banganga Irrigation System - Water User's Association to manage the water for irrigation..

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

- Once it has been proposed to establish as a bird sanctuary.
- Local people have approached to take the reservoir on lease for fish stocking and develop it as an tourist destination.

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25. Current scientific research and facilities: (e.g., details of current projects; existence of field station, etc.)
The series of data on the hydrological and some limnological parameters are documented by the Department of Irrigation.

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26. Current conservation education: (e.g., visitors centre, hides, info booklet, facilities for school visits, etc.)
None existing at the moment.

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27. Current recreation and tourism: (state if wetland is used for recreation/tourism; indicate type and frequency/intensity)
Local populace resort to hunting, fishing and swimming in this site. It is a popular site for local picnicking but no major external tourism development exists at the moment.

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28. Jurisdiction: (territorial, e.g. state/region, and functional, e.g. Dept of Agriculture/Dept. of Environment, etc.)
Under the jurisdiction of Department of Irrigation/HMG.

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29. Management authority: (name and address of local body directly responsible for managing the wetland)
District Irrigation Office, Taulihawa, Kapilvastu, Lumbini Zone, Nepal.

District Irrigation Office
Taulihawa Municipality,Kapilbastu District Nepal
C/O Department of Irrigation
Jawalakhel Lalitpur Nepal
Tele phone No. 977-1-5537136
Fax No. 977-1-5537169
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30. Bibliographical references: (scientific/technical only)

Biodiversity Profiles Project. 1995. Biodiversity Assessment of Terai Wetlands (W. J. M. Verheugt, Editor). Biodiversity Profiles Project Publication no. 1.

Maskey, T. M., Dr., Suwal, R. N. , Verheugt W. J. M; Wetlands of the Nepal's Terai Lowlands Meeting Ramsar Criteria, A paper presented at the Workshop on International Conference on Wetlands and Development, Kualalumpur, 8 - 13 October 1995.

Porter, V. 1988. The Pond Book

Shrestha, G.L and Vaughan, D.A. 1989. The Wild Relatives of Rice in Nepal Proc. of the International Congr. of SABRAO, Japan. pp. 171-174.

Scott , D. A. and Rose, P. M. 1989. Asian Waterfowl 19989. IWRB Slimbridge, UK.

Shrestha, J. 1981. Fishes of Nepal.
Shrestha, J. 1994. Fishes, Fishing Implements and Methods of Nepal.
Shrestha, T. K. 1990. Resource Ecology of Himalayan Waters
Suwal, R. N. and Shrestha, M. K. 1992 Large Waders and Wetlands of Terai. KMTNC/USFWS
Suwal, R. N. Bird Record Archive. 1988 and 1992.