

Designation date 07/05/12

Ramsar Site no. 2032.

# Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

Available for download from [http://www.ramsar.org/ris/key\\_ris\\_index.htm](http://www.ramsar.org/ris/key_ris_index.htm).

*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9<sup>th</sup> Conference of the Contracting Parties (2005).*

## Notes 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. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 14, 3rd edition). A 4th edition of the Handbook is in preparation and will be available in 2009.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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

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Designation date

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Site Reference Number

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### 2. Date this sheet was completed/updated:

02 June 2012

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### 3. Country:

Bhutan

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### 4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Bumdeling

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**5. Designation of new Ramsar site or update of existing site:**

**This RIS is for** (tick one box only):

- a) **Designation of a new Ramsar site** ; or  
b) **Updated information on an existing Ramsar site**

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**6. For RIS updates only, changes to the site since its designation or earlier update:**

**a) Site boundary and area**

**The Ramsar site boundary and site area are unchanged:**

or

**If the site boundary has changed:**

- i) the boundary has been delineated more accurately ; or  
ii) the boundary has been extended ; or  
iii) the boundary has been restricted\*\*

and/or

**If the site area has changed:**

- i) the area has been measured more accurately ; or  
ii) the area has been extended ; or  
iii) the area has been reduced\*\*

\*\* **Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

**b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:**

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**7. Map of site:**

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

**a) A map of the site, with clearly delineated boundaries, is included as:**

- i) **a hard copy** (required for inclusion of site in the Ramsar List): ;  
ii) **an electronic format** (e.g. a JPEG or ArcView image) ;  
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** .

**b) Describe briefly the type of boundary delineation applied:**

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a water body, etc.

The borders of the wetlands match the old nature trail. The suspension bridge (Kangteng Zam) upstream is the northern boundary and the suspension bridge (Dung Zam) downstream is the southern border. The foot trail runs along both the sides of the river (Kholong Chhu) as the eastern and western boundary. The Bumdeling wetland is within the Bumdeling Wildlife Sanctuary except for its southern fringe. The area includes riverine wetlands with the river (Kholong Chhu) flowing through the middle of the wetland site, forming a web of sandy banks and marshes. It also includes paddy fields which are currently cultivated and some remain fallow due to the deposit of sand by the floods over the years. Forest area, meadows and infrastructure are some of the land-use types found within the area.

**8. Geographical coordinates** (latitude/longitude, in degrees and minutes):

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

The centre of the designated site is :

	X	Y
Centre	27°40'23.24"N	91°26'29.22"E

The coordinates for the northern and southern boundary is:

No.		
Northern Boundary	27° 39' 33,860 " N	91° 29' 22,569 " E
Southern Boundary	27° 41' 14,872 " N	91° 25' 47,726 " E

**9. General location:**

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

Bumdeling wetland is located in Bumdeling Gewog (Block) under Tashiyangtse Dzongkhag (District) in North-eastern Bhutan. It is bordered by Tibet (China) in the North and Arunachal Pradesh (India) in the North-east. The nearest largest town is Tashi Yangtse town. The population of this town is roughly about 2000. A 10 km farm road connects Bumdeling wetlands with the Tashi Yangtse town. The Bumdeling wetland is within the boundary of the Bumdeling Wildlife Sanctuary except for its southern fringe lying outside the boundary of the wildlife sanctuary.

**10. Elevation:** (in metres: average and/or maximum & minimum)

Maximum elevation: 2,000 metres

Minimum elevation: 1,900 metres

**11. Area:** 141.5 ha

**12. General overview of the site:**

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

Bumdeling is an important wintering ground for some 160 Black-necked Cranes (*Grus nigricollis*) who migrate from the Tibetan plateau each year. Upstream of the Kholong Chhu outside the Ramsar Site, is also the area where Bhutan's national butterfly, *Bhutanitis ludlowi*, endemic to Tashi Yangtse was

rediscovered in August 2009 after 75 years by Frank Ludlow and George Sheriff in 1933-1934. It is listed on Appendix II of CITES, restricting any international trade. The habitat of *Bhutanitis ludlowi* is about 6 hours walking distance towards the northern side of the Bumdeling wetland.

The Kholong Chhu River meanders as it flows through Bumdeling gewog (block) and forms a natural island while it branches out and again rejoins as it reaches the southern bridge (Dung Zam). This then creates a near-perfect and safe winter-roosting ground for migratory birds. The current roosting area lies on the west bank of Kholong Chhu, just above the confluence of the Nagpola Chhu and Kholong Chhu. The fairly isolated valley of Bumdeling is at a much lower altitude than the other crane wintering areas in Bhutan. The wetland site is a wide U-shaped valley which comprises of mostly paddy fields before the floods and is one of the glacial valleys in Bhutan.

The feeding grounds extend from Japang village (near Kangteng Zam) in the North to Chorten Kora (in Tashi Yangtse town) in the South where there are paddy fields and farm lands in the vicinity providing food for the cranes. Apart from Black-necked Cranes, other waterbirds are also present in the marshes which are potentially important for other water birds such as Mallard, Gadwall, Common Teal, Crested Kingfisher White-throated Kingfisher, Ibis bill, and Great Cormorant. The biodiversity is rich. There are more than thirty lakes upstream of the wetland sites that are hydrologically the main sources of the river, apart from the melting snow. There is a presence of a huge landslide on the north west of the wetland area. Apart from the water body (river, lake and streams), the other land use types in the designated site are paddy fields, meadow, marshes, forested areas, sandy banks and settlements. Over the years, there were series of flood that permanently destroyed the vast paddy field leaving only few that are still being cultivated which has been limiting the feeding grounds for the cranes to a few areas.

### 13. Ramsar Criteria:

Tick the box under 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). All Criteria which apply should be ticked.

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9  
                               

### 14. Justification for the application of each Criterion listed in 13 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 2:

The followings are the list of vulnerable or endangered species:

#### Birds

Common Name	Scientific name	Forest and Nature Conservation Act, 1995	IUCN Red List	CITES	CMS Status
Black-necked Crane	<i>Grus nigricollis</i>	Schedule I	VU	Appendix I	Appendix I

#### Mammals

Common Name	Botanical Name	Forest and Nature	IUCN Red List	CITES	CMS Status
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		Conservation Act, 1995			
Snow Leopard	<i>Panthera uncia</i>	Schedule I	EN		Appendix I
Tiger	<i>Panthera tigris</i>	Schedule I	EN	Appendix I	-
Red Panda	<i>Ailurus fulgens</i>	Schedule I	VU	Appendix I	-
Capped Langur	<i>Trachypithecus pileatus</i>	-	VU	Appendix I	-
Serow	<i>Capricornis sumatraensis</i>	Schedule I	VU	Appendix I	-
Himalayan Black Bear	<i>Ursus thibetanus</i>	-	VU	-	-
Asiatic wild dog	<i>Cuon alpinus</i>		EN	Appendix II	
Himalayan musk deer	<i>Moschus leucogaster</i>	Schedule I	EN	Appendix I/II	

**Criterion 4:**

The wetland is an important wintering site for the migratory *Grus nigricollis* (Black-necked Crane) in the biogeographic region, where some 100 to 200 individuals are usually recorded when they migrate from China (Tibet) to Bumdeling. At least another 73 bird species have been recorded at the site.

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**15. 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:**

Himalayan highlands

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

[A classification of the biogeographical provinces of the world \(Udvardy, 1975\)](#)

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**16. 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.

Bumdeling falls within the Taktshang Formation of Thimphu gneiss complex which is structurally in higher greater Himalayan section comprising of garnet-sillimanite-kyanite- biotite bearing migmatitic orthogneiss. Soils are moderate to strong acidic ranging from 4.9 to 6.5 having low Cation Exchange Capacity (CEC) indicating low amount of calcium (Ca), magnesium (Mg), and potassium (K) in the soil. The soils are well-drained with texture ranging from Silty loam to silty clay loam.

	Stream name	pH	Conductivity (µs/cm)	TDS (ppm or mg/l)	Salinity (ppm)	Temperature
1	Japang	8.14	31.4	22.6	21.4	22.2
2	Kholong Chu (Dungzam)	7.61	46.3	32.7	27.3	21.2

3	Lingbu Chu	8.22	24.4	17.3	18.3	21.2
4	Nakpda Chu	7.1	17.6	12.5	15.7	21.1
5	Kholong Chu	7.15	52.3	37.1	30	21.4

There is a main river viz. Kholong Chhu flowing through the area with 3 tributaries flowing in the wetland area joining the main river. Five physio-chemical characteristics are measured such as pH, temperature, conductivity, total dissolved solids and salinity. The pH of the rivers and tributaries are slightly to moderately alkaline ranging from 7.1- 8.2. Conductivity in streams and rivers is affected primarily by the geology of the area through which the water flows. Total dissolved solids are quite less which is suitable for drinking water.

The streams are of medium depth ranging from 0.15 m to 1 m and are perennial throughout the year.

The weather station is situated in Yangtse (nearest town) about 10 kilometres downstream of the wetland area. The weather data has been collected daily from the year 2007 till 2010. The average maximum annual temperature is 20.2°C and average minimum annual temperature is 10.7°C with solar radiation of 15 KJ/m<sup>2</sup>. The average temperature in July is +20°C and in January is +8°C. The maximum annual rainfall and minimum annual rainfall are 1296mm and 835mm respectively with 103-157 annual rain days. There is an occurrence of landslides/gully erosion in the south facing slope on the western side of the river.

Stream Name	Q(l/s)	Q(L/day)
Kholong Chu	5551.26	479,628,770.30
Japang	268.47	23,195,401.24
Lingbu Chu	528.86	45,693,301.31
Nakpda Chu	1342.85	116,022,016.94
Kholong Chu (Dungzam)	30471.50	<b>2,632,737,276.48</b>

The discharges of the streams were determined using the Velocity-area method / float method. This method requires determining the average velocity of the stream and cross-sectional area of the stream. The discharge of the stream Kholong Chhu at Dungzam (bridge) is the distribution of the tributaries and the groundwater recharge.

## 17. Physical features of the catchment area:

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

The site is a U-shaped valley characterized by highly elevated, gently to moderately sloping mountains on either side. Kholong Chhu forms the main drainage within the catchment area with two rivulets of glacial origin tributaries. These tributaries carrying lot of alluviums has given rise to alluvial fans at the confluence with Kholong Chhu. Several lowly sloping alluvial fans developed by tributaries and river terraces developed by Kholong Chhu are the prevailing wetlands in the area.

The Bumdeling catchment is one of the glacial valleys in Bhutan. The altitude ranging from 1900 to 2000 meters above sea level, it comparatively a warmer area with warm-broad leaf forest dominating the area.

## 18. Hydrological values:

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

The tributaries are used for drinking and domestic purposes and for irrigation purposes. About 10 -15 communities are benefitted from the tributaries. The main Kholong Chhu River is not utilized for domestic or irrigation purpose but for hydropower electricity generation downstream for the upcoming Kholong Chhu hydropower project (the first ever hydropower project in Eastern Bhutan). The wetland is also important for flood control.

## 19. 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.

M, Tp, Sp, 3, N, U

## 20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The forest has been disturbed by the floods over time and the most dominant tree species found in the area is *Alnus nepalensis* (Alder). There are more than 160 species of plants, 12 species of mammals, 73 species of birds, 38 species of snakes, 7 species of lizards and 7 native species of fishes. The wetland is the major roosting ground for the migratory and endangered bird species *Grus nigricollis* (Black-necked Crane) in the winter months. The forested area around the core wetland provides cool and humid environment to the wetland and act as a home to large number of birds and animals. It also used to be a feeding ground for birds but the paddy grounds have been washed away by floods

## 21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, 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.*

Bumdeling wetland is rich in floral diversity comprising 125 species in the area and surroundings, where 3.2% (4 species) is pteridophytes, 2.4% (three species) gymnosperms and 94.4% (118 species) angiosperms. The main vegetation communities are various types of floodplains and warm broad-leaved forests. The most dominant species found in the area are *Alnus nepalensis* and *Elaeagnus parvifolia*.

The endemic plant found in the area is *Viola bhutanica*. Pteridophytes found in the area include *Diplazium esculentum*, *Pteridium aquilinum*, *Selaginella sp.* and *Lycopodium sp.* Seven orchid species occur in the area and all fall under the CITES Appendix II.

## 22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. 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.*

**Fish:** Bumdeling wetland represents 7 native species of fish which includes 7 genera and 3 families – *Tor tor*, *Schizothorax richardsoni*, *Garra gotyla*, *Balitora Brucei*, *Nemacheilus multifasciatus*, *Glyptosternon reticulatum* and *Pseudochebeneis sulcatus*.

**Amphibians and reptiles:** 38 species of snakes are recorded and 7 lizards (1 gecko, 4 agamids and 2 skinks)

**Birds:** The Bumdeling wetland supports 73 species of birds playing a major role in wetland ecosystem. Among them is Black Necked Crane (*Grus nigricollis*), which roost in the wetland in winter, where the number is declining gradually year by year. Crane Count for five years: 2011-2012 = 103, 2010 - 2011 = 105, 2009-2010 = 123, 2008-2009 = 116, 2007-2008 = 130. –The species *Ictinaetus malayensis* (Black eagle) and *Leiothrix lutea* (Red-billed Leiothrix) fall under CITES Appendix II and are classified as Least Concern in the IUCN Red List.

**Mammals:** There are 12 species of mammals found in the wetland area. Among them are threatened species including *Naemorhedus goral* (Goral), *Pseudois nayaur* ssp. *Nayaur* (Tibetan blue sheep) and *Panthera pardus* (Leopard).

### 23. Social and cultural values:

a) Describe if the site has any general social and/or 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:

Bumdeling was one of Bhutan's rice producing floodplains up until several years ago. A series of flood events have washed off the paddy fields and left it fallow with sandy soil. The community's livelihood is mainly agriculture. They consider the cranes sacred and do not harm them when they come feed on the farmer's farm.

The flora found in the area provides raw materials for various uses and products for the local communities such as *Artemisia spp.* used for cattle bedding, mulching and for making brooms, *Rubia cordifolia* used for dying, *Borinda grossa* used for making baskets, mats, binding materials, etc. *Astilbe revularis* is used by locals as ingredients in making Suja (Butter Tea). Many other species of plants are used as food, fodder, timber, paper making materials, fibre, firewoods, spices, tea leaves etc. Alder (*Alnus nepalensis*), Maple (*Acer sp.*) and Birch (*Betula sp.*), found in and around the wetland, are used for making traditional cups, bowls, etc. These tree species are the main source of income for some communities in the area.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box  and describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:



**24. Land tenure/ownership:**

- a) within the Ramsar site: Private Land, Government Reserve Forest
- b) in the surrounding area: Government Reserve Forest, Private Land

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**25. Current land (including water) use:**

- a) within the Ramsar site: Agriculture where there are paddy fields, grazing by domestic animals, drinking water, conservation activities.
- b) in the surroundings/catchment: Agriculture, pasture, drinking water, irrigation, hydropower, conservation activities.

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**26. 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: Flood caused damaged to the paddy fields along the flood plains of the Kholong Chhu . Now only few are cultivated and the rest are dominated by *Alder sp.* or remain sandy. Efforts such as excavating sand and river diversions are carried out in order to reduce the effects of flood occurrences and to protect the main roosting area of the Black-necked Cranes.
- b) in the surrounding area: The Kholong Chhu hydro power project downstream of Bumdeling will have adverse effect on the ecological character of the valley downstream but not so significant near Bumdeling. The proposed reservoir and siltation dam is about 17 km south and the proposed powerhouse is about 35 KM south of the wetland.

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**27. Conservation measures taken:**

- a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

Bumdeling falls within the boundary of the Bumdeling Wild life Sanctuary, except for its southern fringe.

- b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

- c) Does an officially approved management plan exist; and is it being implemented?:

Bumdeling Wildlife Sanctuary Management Plan has already expired and is in the process of renewal.

- d) Describe any other current management practices:

No, there are no other management plans.

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**28. Conservation measures proposed but not yet implemented:**

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

The Bumdeling Wildlife Sanctuary Management plan is being revised. However, there is a strong community willingness to participate in conservation activities. The park management has several

programs such as community school program where the park management creates awareness to the school students on conservation aspects and the students create awareness to the farming communities. The school children and communities also volunteer in conservation activities such as clearing debris at the crane roosting areas and stopping vehicles coming near the feeding and roosting grounds. School is actively involved in the conservation measures taken in Bumdeling.

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**29. Current scientific research and facilities:**

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

Field research centre, biodiversity monitoring, biodiversity inventories, forest assessment are present as it is within the Bumdeling Wildlife Sanctuary.

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**30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:**

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Nature trails and observation hide present. There are also brochures produced by the Bumdeling Wildlife Sanctuary. Community school program is very active in Bumdeling.

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**31. Current recreation and tourism:**

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

Eco-tourism mainly because of the Black Necked Cranes but not so frequently visited. The site is remote, 620 Km from the capital Thimphu and the roads are dangerous.

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**32. Jurisdiction:**

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

Bumdeling Wild Life Sanctuary  
Department of Forests and Park Services  
Ministry of Agriculture and Forests  
Bumdeling Gewog, Tashi Yangtse

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**33. 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.

Park manager  
Bumdeling Wild Life Sanctuary  
Department of Forests and Park Services  
Ministry of Agriculture and Forests  
Royal Government of Bhutan  
Phone number: +975-4-781155  
Fax number: +975-4-781161  
Email address: pan\_dukpa@hotmail.co.uk

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### 34. Bibliographical references:

Scientific/technical references only. If bio geographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

- Bhattarai, S. And Thinley, P. 2005. *Project Report on Survey of Fish fauna along with basic water quality in some river of Bumdeling Wildlife Sanctuary in Eastern Bhutan*. Druk Printers, Thimphu.
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- Tshering, C. 2001. *Bumdeling Wildlife Sanctuary Conservation Management Plan July 2001-June 2007* MoA, Thimphu.
- Wangyal, J.T and Tenzin, K. 2009. *Snakes and Lizards in Bumdeling Wildlife Sanctuary*. KUENSEL Corporation Ltd., Thimphu .

[www.cites.org](http://www.cites.org): CITES website, CITES Appendices I,II,III (27/04/2011), p.33-p.42

[www.iucnredlist.org](http://www.iucnredlist.org): IUCN website on red list of globally threatened species

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