

# Wetland Educational Kit Series

Wetland Friends of Nepal, Institute of Forestry, Pokhara

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## Wetlands and Ramsar Sites

### What are Wetlands?

National Wetlands Policy of Nepal (2003) has defined wetlands as

*“Wetlands denote perennial water bodies that originate from underground sources of water or rains. It means swampy areas with flowing or stagnant fresh or salt water that are natural or man-made, or permanent or temporary. Wetlands also mean marshy lands, riverine floodplains, lakes, ponds, water storage areas and agricultural lands.”*

The Ramsar Convention has defined wetlands as

*“areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.”*

### Types of Wetlands

The major wetland types of Nepal fall into two categories: natural and human-made. The natural wetlands consist of:

- Rivers;
- Lakes and ponds;
- Flood plains; and
- Marshes and swamps.

The human-made wetlands consist of:

- Water storage areas (reservoirs, hydrodams and barrages)
- Deepwater agricultural lands (paddy fields, irrigated channels, canals, fish ponds, farm ponds, ditches, ghols and dhaps.

### Coverage of Wetlands

Wetlands occur everywhere, from the tundra to the tropics. How much of the earth's surface is presently composed of wetlands is not known exactly. The World Conservation Monitoring Centre has suggested an estimate of about 570 million hectares (5.7 million km<sup>2</sup>) – roughly 6% of the Earth's land surface – of which 2% are lakes, 30% bogs, 26% fens, 20% swamps, and 15% floodplains. Mitsch and Gosselink, in their standard textbook *Wetlands*, 3<sup>rd</sup> ed. (2000), suggest 4 to 6% of the Earth's land surface. Nevertheless, a global review of wetland resources prepared for Ramsar COP7 in 1999, while affirming that “it is not possible to provide an acceptable figure of the areal extent of wetlands at a global scale”, indicated a ‘best’ minimum global estimate at between 748 and 778 million hectares. The same report indicated that this “minimum” could be increased to a total of between 999 and 4,462 million hectares when other sources of information were taken into account.

The systematic study of wetlands in Nepal is very recent. The total extent and diversity of wetlands in Nepal is still unknown. However, past records reveal that wetlands cover approximately five percent of Nepal's land area. In 1996, IUCN-Nepal prepared a detailed wetland inventory of 163 sites (724,257 ha) from the Terai and 79 sites from the

hills and mountains. In an inventory carried out by ICIMOD and UNEP (2002) listed 2,323 glacial lakes (78.3 km<sup>2</sup>) above 3500 m. in Nepal.

### Why to Conserve Wetlands

Wetlands are amongst the Earth's **most productive environments** and provide a wide array of benefits.

#### Wetland values and functions

'Values of wetlands' refer to the perceived benefits to society, either direct or indirect, that result from wetland functions. These values include human welfare, environmental quality, and wildlife support. 'Wetland functions' refer to activities or actions which occur naturally in wetlands as a product of interactions between the ecosystem structure and processes. Major values and functions of wetlands are listed below:

*Cradles of biodiversity*  
*Flood control*  
*Groundwater replenishment*  
*Shoreline stabilisation and storm protection*  
*Sediment and nutrient retention*  
*Climate change mitigation*  
*Water purification*  
*Wetland products*  
*Tourism, recreation and research*  
*Cultural importance*

### Ramsar Convention and Ramsar Sites

The Convention on Wetlands is an intergovernmental treaty adopted on 2 February 1971 in the Iranian city of Ramsar, on the southern shore of the Caspian Sea. Thus, though nowadays the name of the Convention is usually written "Convention on Wetlands (Ramsar, Iran, 1971)", it has come to be known popularly as the "Ramsar Convention". Ramsar is the first of the modern global intergovernmental treaties on the conservation and sustainable use of natural resources, but, compared with more recent ones, its provisions are relatively straightforward and general.

Ramsar is a city in Iran, on the shores of the Caspian Sea, where the Convention on Wetlands was agreed on 2 February 1971; thus the Convention's informal nickname is "Ramsar Convention on Wetlands". Ramsar Sites are the wetlands designated by the Contracting Parties for inclusion in the List of Wetlands of International Importance because they meet one or more of the Ramsar Criteria. List of Wetlands of International Importance ("Ramsar List") refer to the list of wetlands which have been designated by the Contracting Parties in which they reside as internationally important according to one or more of the criteria that have been adopted by the Conference of the Parties. The Ramsar List was established in 1971. Wetlands included in the List acquire a new status at the national level. They are recognized by the international community for their significant values. These values are not only for the country, or the countries, in which they are located, but for humanity as a whole. The wetlands included in the Ramsar List are known as Ramsar Sites. Full data submitted by the countries (parties) for each of their Ramsar Sites are entered in the Ramsar Sites Database.

## Criteria for Identifying Wetlands of International Importance

### Group A. Sites containing representative, rare or unique wetland types

**Criterion 1:** A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

### Group B. Sites of international importance for conserving biological diversity

Criteria based on species and ecological communities

**Criterion 2:** A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

**Criterion 3:** A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

**Criterion 4:** A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

#### Specific criteria based on waterbirds

**Criterion 5:** A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

**Criterion 6:** A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

#### Specific criteria based on fish

**Criterion 7:** A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

**Criterion 8:** A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

### *Ramsar Sites of Nepal*

The Convention on Wetlands came into force for Nepal on 17 April 1988. Nepal presently has four sites designated as Wetland of International Importance, with a surface area of 23,488 hectares. The Ramsar sites of Nepal are as follows:

Name	Designation Date	Area	Location
<b>Beeshazar and Associated Lakes</b>	Aug.13, 2003	3200 ha	Chitwan, 286m elevation 27° 37'N, 084° 26'E
<b>Ghodaghodi Lake Area</b>	Aug.13, 2003	2563 ha	Kailali, 205m elevation 28° 41'N, 080° 57'E
<b>Jagadishpur Reservoir</b>	Aug.13, 2003	225 ha	Kapilvastu, 197m elevation 27° 35'N, 083° 05'E
<b>Koshi Tappu</b>	Dec.17, 1987	17500 ha	Koshi, 75-81m elevation 26° 39'N, 086° 59'E
<b>Total</b>		23488 ha	

## Causes and Effects of Wetland Loss and Degradation

The wetlands of Nepal are vulnerable to a multitude of problems such as filling, drainage, poisoning and over-fishing, overgrazing in the watershed area, invasion by alien species, over-extraction of forest and wetland resources, encroachment and agricultural expansion, and eutrophication. The wetlands are being lost and degraded by these problems.

For example, road construction and filling are major threats and disturbances of Jagadishpur Reservoir of Kapilvastu District. Drainage, vegetation succession, defoliation of surrounding ridges, siltation, building construction, drainage/trash and waste and monospecific domination are major threats and disturbances to Ghodaghodi Lake of Kailali District. Use of poison for fishing, drainage/trash, over fishing, haphazard resource extraction, sedimentation/siltation and agricultural runoff are the major threats and disturbances to Bees Hazari Lake of Chitwan District. Road construction, agricultural runoff, dredging/drainage, siltation and deforestation at the periphery are the major threats to Koshi Barrage, Koshi Tappu Wildlife Reserve and Koshi Floodplain.

## How can we Safeguard Wetlands?

- Using them wisely
- Using only the interest, not the principle
- Maintaining symbiotic relationship like the one between the bee and the tree
- Planning and implementing the wise use of wetlands.

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Wetland Friends of Nepal (WFN) is a voluntary group working to promote awareness about wetlands among local communities, encourages local people's participation in wetland management, promotes wise use of wetland resources for sustainable livelihood, facilitates preparation and implementation of wetland management plans and encourages research and action on wetland ecosystem. It is committed to conserve and manage wetlands with local people's participation for their benefit, while maintaining environmental integrity according to the terms and spirit of the Ramsar Treaty. To accomplish its mission, it makes coordination and builds strategic alliance with communities, community-based organizations, schools, clubs and institutions during planning, design and implementation of conservation activities. WFN is affiliated to Institute of Forestry, Pokhara.