

Conservation of High-Altitude Wetlands: Experiences of the WWF Network

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The WWF High-Altitude Wetlands and Lakes Project

Conservation of high-altitude wetlands and lakes in the Himalaya poses an immense challenge to the world. Recent projections on climate change and its impacts on glaciers compound the challenge. The WWF High-Altitude Wetlands and Lakes Project is working to meet this challenge in 3 ways: 1) Site-specific work in India, Nepal, Pakistan, and China; 2) Partnerships for scaling up the work; 3) A regional forum for transboundary cooperation involving governments and partners.

Scientific and technical information

The project has generated much technical, scientific, socioeconomic, and biodiversity-related information which is being effectively used to make a strong case for protecting and conserving these unique spaces in the interest of local people and biodiversity. WWF offices in all 4 countries have documented information on specific sites; this is an ongoing process. WWF's presence in the field has also helped and encouraged many other institutions to conduct specific research.

Identification of suitable sites for Ramsar nomination

In a regional meeting at Urumqi, China, about 200 sites were tentatively identified that could qualify for Ramsar designation or national sites declaration. A process has been established at the national level to collect scientific information required for filing for Ramsar designation. Several sites have already been designated and others are in the process. Momentum towards the 200 mark has been built.

Site management

Designation of sites is the first step. WWF is taking measures at specific sites to improve (or reduce the threat to) the ecosystem. This includes establishing community organizations, lobbying with governments to

change certain practices, involving organizations in strengthening their capacity to provide better protection, modifying certain practices in the private sector, etc. WWF is also establishing local-level institutions so that site management can be carried on by them in the long term.

Regional cooperation

A regional forum has been established to exchange ideas and experience, and forge cooperation specifically on transboundary sites. While there is a lot of good will, the process of transboundary cooperation between countries based on specific sites has not taken place. This should be a priority for the next phase.

Some important lessons from the project

- Until recently, the high-altitude wetlands were not accessible to the general public in many countries. Recent developments such as rapid economic development, infrastructure projects, and opening of these areas to tourism have changed the situation. Interventions at site level are thus essential to prevent these activities from leading to major degradation;
- Start with a site-based activity to gain the confidence and trust of local communities and local governments;
- Prepare management plans based on field experience and reality;
- Engage non-traditional conservation partners such as local development agencies, religious and spiritual groups, the tourism industry, and the army;
- Build local capacity and establish site-level presence;
- Take account of nature. Climate, as well as political conditions, are very unpredictable;
- Commit to long-term involvement with some specific achievable milestones;
- Work within the existing cultural and spiritual framework. There

are a number of cultural practices and spiritual beliefs that are very favorable to the conservation of high-altitude wetland sites.

Future direction

WWF is committed to carrying out high-altitude wetlands and lakes work in the region with increased resources and commitment. The next phase will include a concerted effort to bring more sites onto the Ramsar list, preparation of management plans for the large sites, involvement of communities to manage sites, and documenting and addressing the impacts of climate change. The future direction of WWF's involvement in the high-altitude wetlands will be:

- **Focus on identified sites in each country:** Limited but achievable numbers of sites to be identified in each country to continue a time-bound process towards Ramsar designation.
- **Improve the ecological status of the sites:** This is also an ongoing activity, with a need for increased efforts in preparing management plans, establishing local organizations and trusts involving communities, and improving communication to highlight the importance of these sites.
- **Policy advocacy:** WWF intervention is only a start to establish an example. Governments have to carry forward the work with local people and institutions. Convincing governments to invest in these unique areas requires lobbying based on convincing experiences. The challenge is to improve the economic and social welfare of these remote areas without degradation of the fragile ecosystems on which most of the local communities depend. This requires a policy that benefits both people and ecosystems.
- **Transboundary cooperation:** This was discussed in all the regional meetings. Considerable progress has been made in establishing

good will and recognition for regional cooperation at several levels. In the next phase at least 5 specific site-based forms of cooperation need to be initiated. This involves exchange of data, joint scientific missions, declaring peace lakes, exchanges of experience, etc.

- **Capacity building:** WWF national offices do have capacity now to work in these remote areas, but in the next phase efforts will be made to further increase the staff capacity with training facilities, particularly to deal with social issues.
- **Building synergy with the climate change program:** The impact of climate change is most visible in these regions. The reality of climate change and the implications it can have in a relatively short period of time on humans and ecosystems can be communicated to the outside world. Communication materials based on systematic studies documenting the impact of climate change on species, spaces, and people in these areas are being planned.
- **Communications:** In the first phase, due to various resource constraints, communication, particularly with the outside world, was not done in a systematic way. In the next phase activities might include publication of species-based reports, production of films, underlining the importance of peace lakes to improve relationships between the countries, and illustrating the importance of these lakes/wetlands to the cultural and spiritual advancement of local people.

Country experiences

Nepal: conserving the high Himalayan wetlands

About 73% of Nepal is covered with hills and mountains. Of the country's 242 wetlands, 79 are in the mountains. Nepal has the highest mountain in the world—Sagarmatha (Everest)—and 10 of the

world's 14 peaks over 8000 m are also found in the high Himalaya of Nepal. Being vulnerable to climate change, Himalayan ecosystems are facing serious problems with melting glaciers and associated unexpected floods. Changing temperature and moisture patterns also threaten biodiversity, especially in mountain areas where migration of species is physically restricted.

WWF Nepal, as part of the high-altitude wetlands program, is working with the Department of National Parks and Wildlife Conservation (DNPWC) on the following aspects:

- **Inventory of priority high-altitude wetlands (HAWs):** In order to develop a comprehensive database on wetlands above 3000 m, an inventory was made of 10 HAWs within protected areas (PAs) and 3 outside PAs. This research has supported the government of Nepal's proposed declaration of HAW Ramsar sites, a first-of-its-kind initiative in the high Himalaya of Nepal.
- **Ramsar declaration:** Ramsar Information Sheets (RIS) were prepared for 4 significant HAWs (Gokyo, Rara, Phoksundo, and Gosaikunda) and endorsed by the government of Nepal. On 23 September 2007, Nepal's Conservation Day, the Ramsar Bureau accepted the designations and declared the sites to be of international importance. This is a significant achievement of the project; it facilitates the process for declaring more Ramsar sites in the next phase.
- **Cultural and religious significance documented:** HAWs are considered sacred sites in Nepal. Their conservation is important in light of the significance of the myths and beliefs of traditional people, which are being documented for wider dissemination and practice.
- **Conservation of Gokyo wetland series:** Gokyo wetland series in Sagarmatha National Park, with an area of 42.69 ha at 4700–5000 m on the

way to the base camp of Sagar-matha/Mt Everest, has great tourism potential in Nepal. In the peak season, more than 7000 tourists visit Gokyo Lake with twice the number of porters. Besides tourism pressure on natural resources, Gokyo Lake, fed by Nogzumpa glacier—one of the longest and most active glaciers in Nepal—is vulnerable to climate change. Tourism management and community-based adaptation strategies are being implemented to build the resilience of the local people.

China: protecting 'The Third Pole'

The Qinghai–Tibet Plateau, with an area of 2.5 million km², is unique in cultural, geographic, and biological terms. The region, known as the “roof of the world,” is regarded as the third pole of the earth. High-altitude wetlands and lakes (above 3000 m) constitute about 9.25 million ha of this area, which is about 25% of all the natural wetlands in China. Some of the great rivers of Asia originate from the plateau. Rapid economic growth, climate change, logging, reclamation, overgrazing, and infrastructure development are posing challenges to conserving these unique areas.

The Yangtze, Mekong, and Salween rivers originate from the wetlands and lakes of this region. There are about 168 high-altitude wetland sites larger than 100 ha, of which 108 are in the Yangtze, 17 in the Mekong, and 43 in the Salween river source areas; moreover, 65 are located in Sichuan, 49 in Tibet, 43 in Qinghai, and 11 in Yunnan provinces. Of these 168 large HAWs, 22 sites cover an area that exceeds 5000 ha. Altogether, 6 sites—ie 3 in Qinghai province and another 3 in Tibet—are larger than 100,000 ha. These 6 sites account for 1.7 million ha or 90% of the total area of HAWs in China.

Conservation measures

The government of China has prepared long-term plans for wetlands

conservation. The China National Wetland Conservation Action Plan (2002–2030) was issued jointly by 17 ministries in 2000, which included 173 wetland sites of national importance. This list includes 9 sites of internationally important high-altitude wetlands.

By the end of 2005 the Chinese government had established 21 high-altitude wetland nature reserves with a total of 24.46 million ha, which includes 7 sites in the Yangtze, Mekong, and Salween source areas (YMSSA). The Chinese government has established 7 criteria for nature reserves and 8 criteria for the internationally important wetlands in YMSSA. Based on these criteria, 7 sites have been chosen—5 in the Yangtze river basin and 2 in the Salween river basin. The project has 3 main components: data collection and analysis, demonstration sites, and policy recommendations.

With help and cooperation of the wetland resources monitoring centre of the state forestry administration, WWF prepared a document that compiles data and presents an analysis. The document puts forward 5 specific recommendations for conserving HAWs:

- Strengthen wetland legislation and improve the policy and legal system for HAW conservation;
- Enhance capacity, especially to manage internationally important wetlands and nature reserves;
- Enhance river basin planning, management, and wise use of water resources in the Yangtze, Mekong, and Salween basins;
- Conduct scientific research;
- Foster public awareness and education.

WWF is in the process of establishing demonstration sites to improve the management of the sites. WWF has also suggested suitable sites in the region for Ramsar site declaration.

Pakistan: protecting the HKH mountain lakes

A pilot project on conserving high-altitude wetlands and lakes in the

Himalayan–Karakorum–Hindu Kush (HKH) region in Pakistan, initiated in 2004, has adopted a participatory approach involving local communities. So far 6 management plans have been developed. Of these, 2 for Handrap and Utter lakes will be implemented in the next 5 years in a partnership approach involving local communities, forest, wildlife, and fisheries departments of the Northern Areas. As part of preparing the management plans and improving the status of the sites, several activities have been undertaken. Efforts include:

- Helping communities conduct their own ecological monitoring surveys in Handrap and Utter lakes and their immediate catchments. Integrating this information in the management plans;
- A joint ecological monitoring survey of flora and fauna conducted at Ishkoman Community Controlled Hunting Area;
- Campaigns to keep the lake areas clean, organized with stakeholders at Handrap and Utter lakes;
- Developing a GIS database of 12 potential high-altitude wetland sites;
- Developing GIS-based land use maps for 12 potential HAWs and their catchments areas;
- Refining and standardizing HAW inventory techniques and sharing with partners for adoption;
- Conducting several training and awareness building activities to conserve the sites by providing vital information to the general public.

WWF Pakistan has prepared plans for 2007–2012 to continue implementation of management plans for Handrap and Utter lakes and develop participatory HAW conservation models for replication in the rest of 10 potential sites.

India: working in the Trans-Himalaya

WWF-India initiated a project in the Ladakh region in 2000. Situated in

the Trans-Himalayan range, Ladakh lies in the state of Jammu and Kashmir in India. This area is characterized by extreme climatic conditions and is home to a wide variety of flora and fauna, many endemic to the Tibetan plateau. The area is mostly frozen in winter and from April to October many unique migratory bird species such as the black-necked crane (*Grus nigricollis*), the bar-headed goose (*Anser indicus*), the great crested grebe (*Podiceps cristatus*), and the ruddy shelduck (*Tadorna ferruginea*) use these wetlands as their breeding grounds. The key mammal species found in the area are the Tibetan argali (*Ovis amon hodgsoni*), the Tibetan wild ass (*Equus kiang*), the snow leopard (*Uncia uncia*), and the lynx (*Lynx isabellina*). The vegetation of the region can be broadly grouped into scrub formations, desert steppe, and marsh meadows. The major vegetation communities include *Cara-gana-Eurotia*, *Artemisia-Tanacetum*, *Stipa-Oxytropis-Alyssum*, and *Carex melanantha-Leymus secalinus*.

Social, cultural, and economic values

As people living in the area are Buddhists, many historic monasteries such as Korzok Monastery, Hanle Monastery, and Mahe Gompa are also situated close to these wetlands. A unique tent-dwelling tribe of nomads called Changpas keep moving around these wetlands in search of pastures. These wetlands are a source of livelihood for the local people, as most of them depend on the livestock which graze in the pastures near these wetlands. There is a small but growing amount of tourism in the area.

Regional and international importance

One of the wetlands, Tsomoriri, has already been declared a Ramsar Site wetland of international importance. Another 4 wetlands—Pangong Tso, Tsokar, Hanle, and Chushul—have also been identified as potential Ramsar Sites. All these wetlands are in the Upper Indus and Sutlej river basins and thus play a major role in

maintaining the overall hydrological regime of these rivers.

Threats to the region

Unplanned and unregulated tourism is a major threat to the area as the numbers of tourists visiting the area are increasing every year. The other major threats are degradation of the catchment area, increasing human-wildlife conflict, unplanned development, and tremendous grazing pressure.

Conserving unique places through unique partnerships

Over the years 2 community conservation trusts have been formed at Tsomoriri and Tsokar through various capacity building exercises. Both these trusts have been legally recognized; at present they are actively working as wetland conservation organizations in their specific areas. The concept of local conservation trusts is somewhat unique: it confers legal status for conservation measures, raising the required funds, regulating and charging for tourism, etc. Communities benefit through home-stay programs where tourists stay with local communities. Similarly, WWF is working with tourist operators to avoid any damage to the area through specific measures by developing clear guidelines in the form of posters, regular training, etc.

Moreover, WWF has developed a unique partnership with the Army and ITBP (Indo-Tibetan Border Police). Special workshops have been organized to sensitize Army officers to the ecological importance of the area and the need for its conservation. This implies working on the ground in keeping the area clean and providing protection for the nesting sites of species such as the black-necked crane.

WWF is also working with the local educational institutions and providing them resource material in the local language. Through WWF intervention and support, the local communities and the Department of Wildlife protection in Leh launched

a major campaign to stop Himalayan car rallies which took place every year before 2004, cutting across Tsokar, a very fragile and productive wetland. The organizers of the rallies have since altered the routes.

Research and documentation

Regular monitoring of the wetlands is carried out to document the various floral and faunal and quality aspects of these wetlands. A record of developmental activities is also being maintained. The data are used to design conservation activities. Various scientific reports have also been produced and published.

Policy and advocacy

For long-term conservation, it is important to work with the local government and Local Hill Council. Recently, 2 high-altitude wetlands from the area have been selected for conservation and management action under the Prime Minister's Package of the Government of India. WWF was invited by the State Government to develop the management plan for these wetlands, which was done and submitted to the State Government for further action.

Future plans

In coming years WWF has plans to replicate this model in other high-altitude wetlands of the Indian Himalaya. For this a specific project has been developed and there are plans to scale up and implement this proposed project in 5 states of India: Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh.

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