

Report from Myanmar

Conservation of migratory water birds and their habitat in Myanmar

1. Introduction

Myanmar is a country situated in Continental South East Asia, covering the total land area of 676,577 sq.km (261,228 sq; miles) and lies between N 9° 32' to 28° 32' and E 92° 10' to 101° 11'. The country's length from north to south is about 2,090 km and the maximum width from east to west is about 805 km. The country has four important river systems, flowing in the north-southerly direction, of which the Ayeyarwaddy River, the main waterway, is navigable for about 1,450 km. The elevation of the land surface varies from sea level along the southeastern coastal section, to about 5881 meters (Hkakaborazi peak) on the mountain bordering China in the north. The mountains cause many differences in temperature and rainfall. There are three well-defined seasons, namely the rainy season from mid-May to October, the cold season from November to February and the hot season from March to mid-May. The annual rainfall varies from 5000 mm in the coastal region to about 760 mm in the middle of the country.

The forest types vary according to the ecological zone in which they occur. They are classified generally as mangrove and estuary forests in the delta region, mixed deciduous forests and deciduous *dipterocarp* forests in regions with a pronounced dry season, wet evergreen forests in tropical areas with high rainfall, alpine forest in subtropical region and dry thorn forests in places with low rainfall. The 2005 forest cover appraisal revealed that closed and opened forests, considered actual forest cover constituted approximately 49% of the total area of the country. The diverse forest ecosystems in Myanmar are home to about 251 known mammal species, 53 species of snakes, 87 lizards, 32 turtle and tortoises, 79 frogs species, 2 caecilians and over 1000 bird species. Myanmar is endowed with about 118,000 species of trees, shrubs, herbs, bamboos, principal climbers (Hundley et al. 1961) and 28% or about 2,000 species are tree species (FD,2004).

2. Protected Areas and Wildlife Legislations

The Forest Department is responsible for wildlife protection under the Burma Forest Act of 1902. The first comprehensive Wildlife Protection Act was enacted in 1936. Laws covering the control of trade and protection of wildlife have been enacted and amendments are made from time to time. The new Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law, replacing the old Burma Wildlife Protection Act of 1936, was enacted in 1994. The law highlights habitat maintenance and restoration, protection of endangered and rare species of both fauna and flora, establishment of new parks and naturally protected areas, and buffer zone management.

So far, altogether 43 protected areas, covering about 7.23% (19,095 km²) of the total country area have been established in Myanmar. Among them 8 protected areas, (totally areas 1189.69 km²), are specially established for wetland conservation, namely, wethtikan, Hlawga, Moyungyi, Indawgyi, Inlay Lake, Meinmahla Kyun, Thamihla Kyun and Lampi Island Marine National Park. According to the Myanmar Forest Policy, 1995 it is stipulated that the coverage of the PAS will be increased to 5% in the short term. In the long term it is intended to increase up to 10% of the total land area.

3. KBA and IBA areas in Myanmar

KBAs were also defined on the basis of the occurrence of restricted-range species. Sites regularly supporting significant populations of restricted-range species were considered to be global conservation priorities because there are few or no other sites in the world for which conservation action for these species can be taken. This criterion was only used to define KBAs for birds, as this is the only group for which the concept of restricted-range species has been quantitatively defined species with a global breeding range of less than 50,000 km²(Stattersfield et al.1998)Sites supporting a high proportion of the total population of one or more flock of species at a particular time of year(for example, breeding, wintering, and staging sites for migratory water birds)were considered to be global conservation priorities, because these species are particularly threats at these sites. Again, this criterion was only used to define KBAs for birds, as this is the only group for which comprehensive population estimates for flock species are available (Wetlands International 2002);for mass of water birds ,a threshold of 1% of the Asian biogeography population was used.

It has also adopted the network of Important Bird Areas(IBAs)in Myanmar(Birdlife International 2004)as the starting point for defining KBAs .IBAs are internationally important sites for bird conservation, defined on the basis of their importance for globally threatened, restricted-ranged ,biome-restricted and/or congregatory bird species. It was necessary to supplement the IBA network through the definition of additional KBAs for other taxonomic groups, and this was through consultation with stakeholders, completed by reviewed of published and unpublished data. Due to data limitation, it was only possible to prepare a preliminary list of KBA, based on the sites that are most likely to meet the criteria.

4. Status of Wetland in Myanmar

The wetland of Myanmar includes rivers and streams, shallow fresh water lakes and marshes, water storage reservoirs, fish ponds, seasonally flooded cultivated plains and estuarine with extensive mangrove swamps. Most of the wetland in Myanmar are directly or indirectly associated with river systems.

Myanmar has more than 2000 km coastal line and mangroves are found in three regions, namely Rakhine, Ayeyawady Delta and Taninthayi with a coverage of some 785,000 ha, of which 320,106 ha are reserved forests.

Many of the offshore islands contain a wide variety of marine and terrestrial habitats and are the best localities for conserving coral reefs, mangrove forests and sea turtle nesting beaches. The most extensive wetlands in the interior of the country are the seasonally-inundated floodplains of the three main river systems: the Ayeyawady-Chindwin, Sittaung and Salween. Such plains are estimated to form a water surface of some 60,000 km² during the four or five months of the monsoon season. Large areas of the floodplains have been bounded and reclaimed for permanent agriculture, particularly in the northern and central parts of the Ayeyawaddy Delta. The great majority of the land still subject to seasonal inundation is used for rice cultivation during the dry season. Permanent freshwater bodies, including the two main lakes, the Inle and Indawngyi, cover about 130,000 ha. In addition, there are numerous man-made impoundments, tanks and village ponds, and some major reservoirs. Fishery sector is one of the major components of Myanmar

economy. Myanmar is so rich in fresh water and marine fish and prawn that maximum catch, without deteriorating fishery resources, amounts to 1.5 million metric tons per annum. Each year Myanmar hosts to 50000 numbers of resident water birds and migratory water birds from northern Asia using the East Asia-Australasian Flyway.

5. High Altitude Wetland in Myanmar

Mount Hkakaborazi, the snow capped mountain in the most northern tip of Myanmar, has very large biodiversity in the Indo-China region. It contains the headwaters of major river systems (Ayeyawady) in Myanmar, and it is traversed by gorges, ravines and fast flowing water streams. The high mountain region of north Myanmar is characterized by the presence of evergreen forests, sub-tropical, and temperate forests at altitude between 2,438-2,743 meter and alpine vegetation above 3,348 meter. It is a transition zone between the tropical Indo-Malaysian flora and fauna in the south and the temperate and alpine Sino-Himalayan flora and fauna in the north. In Most of area in the north, Myanmar is sparsely populated and contains undisturbed forests. However, degradation of north Myanmar's resources not only threatens the future biological wealth of the country, but also could threaten the abundant water resources that emanate from this region.

The Nature and Wildlife Conservation Division (NWCD), Forest Department highlighted on high altitude wetland conservation and established the Hkakaborazi National Park in 1998. Since, Then NWCD has been carrying out conservation activities in that region. At the moment one National Park and two Wildlife Sanctuaries, namely Hkakaborazi N.P, Hponkanrazi W.S, Bonbabun W.S and Hukaung Valley W.S, covering total area of (12975.9 km²) have been established to protect the natural headwaters of Ayeyawady and Chindwin river and to conserve the diversity of flora, fauna and their habitats, in these protected areas.

These protected areas are the last stronghold for biodiversity in Myanmar. They are extraordinarily rich in flora and fauna, ranging from lowland tropical to alpine species and still await far the proper research and identification of biodiversity resources. Such endangered Eastern Himalayan species of Takin (*Budorcas taxicolor*), Musk Deer (*Moschus moschiferus*), Red Goral (*Naemorhedus cranbrooki*), Red Panda (*Ailurus fulgens*), Blue sheep (*Pseudois nayaur*), Sclater's Monal (*Lophophorus sclaten*), Himalayan Mornal (*Lophophorus impejanus*), Blyth Tragopan (*Tragopan blythii*) are found in this region.

6. People and Wetland

People living in the rural area of Myanmar heavily depend wetland for the livelihoods because wetlands are major source of water for drinking, cooking, transportation, fishing and cultivation of crops. Besides, many wetlands are regarded as important places from the cultural and religious point of view. Every year cultural and religious festivals are celebrated by people at wetlands. For example, Shwemyintzu Pagoda festival is held at Indawgyi Lake in the northern part of Myanmar. Similarly in Inlay Lake of Shan State people make traditional boat racing along with cultural ceremonies. Tourist visit Inlay Lake to observe these cultural and traditional events. Therefore, wise uses of wetlands are crucial for the sustainability of human life in Myanmar. More over wetlands are very important for social and ethical of people especially living in rural areas. Wetlands are home to many water birds of residence and migratory in nature as well as provide

people with scenery for recreation. Thus, wetlands offer people in the nearby area income opportunities from ecotourism.

Wetlands of river systems such as Ayeyawady, Chindwin and Sittaung are wisely used for navigation and transportation of forest products of logs and bamboos. Therefore, the Government of Myanmar regulates the water way of these rivers by laws so that they can be used wisely by people. A considerable amount budget is used to maintain these river systems in Myanmar.

7. Threats and Issues in wetland management in Myanmar

- There is supply of fresh water to agriculture, industries and housing. This can be a problem for a long term existence of wetlands.
- Development of dams and unsustainable agricultural practices cause negative impact on the regular flow of water into the wetlands.
- Pollution, particularly the release of industrial waste into rivers, stream and lake in areas close to paper mills is a serious threat to sustainable fisheries.
- Over fishing and use of unauthorized fishing methods.
- Increased deposition of silt in wetlands due to inappropriate land use methods in upland areas.
- Hunting and netting of water birds by the poor local people near the wetlands.
- Weak awareness on the importance of wetland and their conservation among poor local communities.
- Inadequate qualified staff to work in wetland conservation and management.
- Insufficient financial resources and equipment for wetland conservation and Management.

8. Myanmar and Ramsar Convention

Forest Department, as Ramsar focal point is responsible to manage and will closely collaborate with relevant Ministries to manage Ramsar Site. Forest Department needs assistance and collaboration in capacity building and will encourage the relevant stakeholders and NGOs to cooperate and collaborate in management of Ramsar sites.

Myanmar acceded to the Ramsar Convention in March 2005. Since there are Ministries including Ministries of Forestry responsible to conserve and manage different wetlands and need to coordinate among them to prepare a wetland policy in Myanmar.

9. Conclusion

Due to population increase and growing demand on fresh water resources there is a heavy pressure on the long term conservation of wetlands in Myanmar. Collaboration of relevant stakeholders in the wise use of wetland is urgently needed in Myanmar. It needs to look at the livelihood of poor communities living near the wetlands so that their dependence on wetland resource can be made sustainable. Increased national and international collaboration are needed to manage and conserve the wetland of international importance in Myanmar.