

Wetland Conservation in Myanmar

1. Introduction

Myanmar with an area of 667,553 square kilometers is endowed with vast areas of natural forests ranging from beach and dune forests, mangrove forests in coastal and delta areas in the south to varied terrestrial vegetation of dry and moist deciduous forest and evergreen forest in the central and coniferous dominated sub-temperate forest types on the high mountain parts of far north. Occurrence of diverse forest types are largely due to influence of rainfall, temperature, type of soil, topography and closeness to the sea. Moreover, in Myanmar unique ecosystems are recognized according to the interaction between physical components in environment of a locality and plant communities thrive therein.

2. Forest Management in Myanmar

Despite forest degradation has been taking place with increasing rate all over the world, Myanmar still possesses half of her area covered with forests. Forest degradation in Myanmar, on the other hand, is unavoidable due to clearing of forest land into agricultural production or other land uses. It is fortunate to mention that compare to the neighboring countries or elsewhere the rate of forest depletion is kept to the minimal of 0.12%. According to the appraisal of forest cover of Myanmar using 1989 Landsat TM imageries, the area of closed forest is 43.34% and degraded forest was 7.53% of the total land area of the country. Food and Agriculture Organization (FAO) reported in 2001 that forest cover of Myanmar was to be 52% of the country's total land area.

3. Wildlife Conservation in Myanmar

Wildlife conservation dated back to 1859 when Myanmar was ruled by the kings. With the advent of scientific forestry management in 1856 wildlife conservation was further consolidated by promulgation of wildlife laws such as Elephant Act of 1879 in Myanmar. Although environmental conservation has been pronounced for a couple of decades at international circles, conservation oriented forest management and sustainable utilization of forest resources including wildlife are basic principles in the forest policy statements of Myanmar. In the context of the environmental conservation and sustainable development, Forest Department has adopted three approaches such as natural system, modified natural system and plantation system. Under the natural system a net work of protected areas had been formed at different Bio Unit so as to safeguard the major ecosystems, species and also to serve as a gene pool and support the life supporting system of the people.

4. Wildlife Legislation and Protected Areas

Myanmar has a long history of legal background for conservation of natural resources such as forests, wetlands and wildlife. In the 1902 Forest Act, wild animals and their parts were declared as forest produces. Specific legislation to protect wildlife was enacted in 1912 under "the Wild Birds and Animal Protection Act". Besides, the regulations of wild animals in reserve and public forest land were formed in 1917. Later, the act to consolidated and amend the law, relating to wildlife was promulgated under the Wildlife Protection of Act of 1936. However, in 1994 the Protection of Wildlife, Wild Plants and Conservation of Natural Area Law was promulgated and replaced similar one of 1936.

5. Protected Areas for Nature Conservation in Myanmar

There are unique and varied forest ecosystems through out Myanmar. Wildlife species of various kinds are adapted to these ecosystems depending on their habitat requirements. Nature and Wildlife Conservation Division of Forest Department has been identifying representative critical areas for the rare and endangered species based on the existing forest ecosystems. With the guidance from the Ministry of Forestry and support from the Forest Department the NWCD has established 40 Protected Areas with a total of 49012.895 square kilometers covering 4.72% of the total land area to protect and conserve the critically endangered wildlife species with ecosystem approach.

6. Wetland Migratory Birds

Wetlands are important natural resources in Myanmar. They are natural heritages of the country and play a vital role in the economy of Myanmar. Principle wetlands of Myanmar are mangroves, swamp forests, lakes and marshes. Coastal forests provide many valuable resources such as fishery, forest products and medicinal plants. Besides, they act as natural barriers against introduction of sea water into the agricultural areas as well as prevent the costal land from erosion.

The main type of wetland in the coastal area in Myanmar is the mangrove with mud flat land ecosystem. Mangroves are extremely productive and are important for a large number of aquatic fauna. These ecosystems are home to many waterfowls of native and migratory in nature. Those genera such as *Rhizophara*, *Brugeira*, *Sonneratia* and *Avicennia* are unique to the region and deserve for effective protection for the survival of mankind.

In Myanmar, coastal and inland mangrove wetlands are of value for nature conservation. Migratory birds are dependent upon these areas and, hence, can be considered them as international importance. The birds found in mangroves wetlands are also diverse.

Natural lakes in Myanmar are primarily associated with river systems. The lakes adjacent to the four main rivers namely Ayeyarwady, Chindwin, Sittaung and Thanlwin are flooded during the rainy season, and the wetlands are formed after the rise subsided. These wetlands fed by ground water discharge have a direct influence on stream flow. For example, Inle Lake, in Shan State is the site of ground water discharge and then acts as site of recharge to the ground water at another. Lakes are important areas for fishery industry and also provide for breeding sites for water birds and it forms the basis for national and local fisheries.

Indawgyi, Inle and Moeyungyi are famous wetlands as well as Important Bird Areas in Myanmar. Fresh water fish from the inland wetland have been the major protein food source of the people of Myanmar. A network of fresh water wetlands, rivers and adjacent wetlands are very important for water supply, transport and habitats for fresh water fish. However, the natural characteristics and value of many inland lakes have been changed by human activities, thus reducing their natural values. The key representative lakes in Myanmar need to be preserved to maintain the biological diversity of wetland ecosystem. A network sites along flying routes is essential for the migratory water birds as they need a chain of protected feeding and resting areas to enable them to travel from the northern breeding ground to the southern non-breeding areas. However, in many areas, the conservation values of the wetlands have not been fully recognized yet in land use planning in Myanmar. As a result, a large percentage of wetlands and mangroves have been lost or degraded.

In spite of constraints to conservation of wetlands, Myanmar always seeks wise use and sustainable use of wetlands. Myanmar collaborated with the Wild Bird Society of Japan to survey 99 wetland sites in the country. Training courses on wetland assessment and water birds study were given to the staff for capacity building. Similarly, the workshop on Wetland conservation in Myanmar was also held in Yangon in 2001, and current management conservation on wetlands were discussed. The workshop recommended future actions on management, conservation and wise use of wetlands. Based on the results of wetland inventories which were taken between 2000 and 2004 a Hand Book of "**An Inventory of the Wetlands of Myanmar**" has been drafted, and it is expected that it will be published in early 2005.

7. Status of Migratory Birds in Myanmar

Myanmar is on both Central and East Asian Flyways of the migratory birds. Many migratory birds winter in wetlands and on coastal areas every year. Although Myanmar is not a member country to the Convention on Migratory Species yet migratory species including migratory birds are protected by forming protected areas which are suitable for wintering. Myanmar shared information in compiling the Asian Waterfowl Census gathered during the period 1994-1996. According to the census 29,313 water birds of 30 species was reported. Moyingyi, now a Ramsar site in Myanmar used to support 10,000 water birds in the past, and is supporting a number of waterfowls including migratory in nature such as Lesser Whistling Duck, Ruddy Shelduck and Eastern Sarus Crane (*Grus antigonesharpii*) are found in large numbers during their wintering. Occurrences of migratory birds are continuously monitored in Myanmar. Forest Department of Myanmar is collaborating with relevant departments for conservation of wetlands and coastal areas to provide habitats for migratory birds.

8. Threats and Issues Associated with wetland conservation 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 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.

9. Myanmar and Ramsar Conservation

Although Myanmar is not a Party to the Ramsar Convention, Myanmar always attended meetings, workshops and training courses relating to Ramsar when invited.

Officials from Ramsar and related organizations visit Myanmar and discuss about status of wetland in Myanmar, their international importance and extend opportunities Myanmar to accede to the Ramsar Convention.

Though in 1998, Forest Department received an invitation letter through the National Commission for Environmental Affairs to apply for membership country at Ramsar, but was not able to decide to accede to the Convention.

Myanmar is considered as integral part in the context of wise use and international importance of wetlands in Asia, and accordingly Myanmar has been participating at the regional wetland collaboration.

In 2004 Ramsar Secretariat welcomed Myanmar to be a member country by sending new invitation and Myanmar decided to accede to the Convention.

Myanmar is looking forward to becoming a member country to Ramsar this year, 2004.

In Myanmar, there are 18 wetland sites that meet the Ramsar criteria as Wetlands of International Importance.

Myanmar looks forward to collaborate with Ramsar for the conservation, wise use and management of wetlands in Myanmar.

Myanmar needs assistance from Ramsar and related organizations in the promotion of conservation, management of wetlands as well as capacity building of staff of Forest Department.

10. 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.