

An Overview of Bundala National Park:

An exceptional wetland facing multitude of problems

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Bundala National Park (BNP) is a wetland complex comprising of five lagoons, intertidal mudflats and salterns. This is an important wintering ground for waders and ducks arriving by the Central Asian migratory flyway, as the area is the final destination in the southward migration of waterfowl because there is no landmass south of Sri Lanka until Antarctica. Around 197 bird species have been recorded from the park and among them are 58 migrants. The Park's rich biodiversity also includes 32 mammals, 48 species of reptiles and 32 species of fishes. The lagoons are surrounded by slightly undulating terrain covered predominantly with lowland dry scrub forest. The topography is generally flat with high sand dunes. These are among the broadest found on

the island and have associated fresh water deposits which nourish the vegetation in adjacent areas. These intact sand dunes played a major role in mitigating the impact of December 2004 tsunami.

The wetland complex importance for biodiversity was identified as far back as in 1969 and an area of 6,210 ha was declared as a Sanctuary for birds under the provisions of Flora and Fauna Protection Ordinance of 1937 and upgraded to a National Park in 1992. Being designation as Sri Lanka's first "Internationally important wetland" under the Ramsar Convention in 1990 highlighted its global significance. BNP is also the core area of the Bundala Man and Biosphere Reserve¹, designated in 2005 under the UNESCO Man and Biosphere Programme (MAB).



1. Biosphere Reserves are areas of terrestrial and coastal ecosystems that promote solutions in order to reconcile the conservation of biodiversity with its sustainable use. Although not covered by any international convention, they must meet set criteria, which allow them to properly fulfill their three functions:

- I **Conservation** - to contribute to the conservation of landscapes, ecosystems, species and genetic vitiation;
- II **Development** - to foster economic and human development which is socio-culturally and ecologically sustainable;
- III **Logistical support** - to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development

The total area of Bundala MAB is 24,838 ha; including a buffer zone of 8,567.5 ha (Out of which 2,287.5 h is marine) and transitional zone of 1,0052.2 ha (of which 67.5 is marine). BNP together with the adjacent Karagan Lewaya (Lagoon) has been recognized as an Important Bird Area² and was included in the "Important Bird Areas in Asia" published in 2004 by the BirdLife International in 2005.

Unfortunately, all through its conservation life of three decades this important protected area has not received the scientific management attention it deserved. On the contrary the ecological and biological values of the wetlands stand seriously jeopardized as they have been overrun by a host of threats from outside and inside as indicated below. It has lost its basic attributes over the larger part as an important wetland for waders. Even if some of these losses can be reversed, this would require a cogent and concerted restoration effort.

BNP is a good example of conflict over water use between irrigation and environment. The wetland system receives drainage water from the Right Bank area and the Badagiriya system of the Kiridi Oya Irrigation and Settlement Project (KOISP). This inflow of drainage water has upset the salinity balance in the lagoons and has converted two brakishwater lagoons (Malala and Embilikala) in to freshwater lakes. Flooding of Embilikala lagoon at the park entrance during the December 2006 rainy season indicated the severity of the problem.

The Malala sandbar is the only opening to the sea for both Embilikala and Malala, which are linked by a natural interconnecting channel. This sandbar has become ineffective because the controlled outflow channel maintains a steady high level in the lagoon, which prevents the intrusion of seawater.

Over-growth of the reed *Typha angustifolia* (Hambu) at Malala lagoon due to slow movement of water, may limit the migratory waders feeding ground, but attract residents such as bitterns, coots and waterhens. Properly controlled and monitored scientific management is needed to prevent the lagoon becoming terrestrial habitat.



Salt manufacture is an age-old practice which has encouraged the cutting of deeper openings to the sea as the larger portions of the lagoons are used for concentrating the brine. The lessee, M/S Lanka Salt Ltd has its major operations concentrated in Maha and Koholankala lewayas, as the catchments of the two lagoons are very small and therefore freshwater input is limited. In Bundala lagoon salt manufacturing takes place at a low level. This is due to the arrangement between DWLC and the salt industry not to implement any further expansion of the salt operations,

Habitat deterioration is reflected in steadily decreasing numbers of wintering water birds, which use this formerly exceptional wetland. In 1998 only about 7,500 waterbirds were countered in the entire BNP, compared with nearly 50,000 in 1986. On the other hand, there were around 44,000 waterbirds sighted in the smaller, Kalametiya Sanctuary, which is located nearby. In the past a major highlight during the bird migrating season was the arrival of large number of greater flamingo

2. BirdLife International, which is a partnership organization of non-governmental organizations working for the conservation of birds and their habitats worldwide, developed the concept of Important Bird Areas (IBA) to identify and protect a network of sites, at a biogeographic scale, critical for the long-term viability of naturally occurring bird populations, which will in turn leads to protection of biodiversity other than bird species, associated with these habitats. The IBA sites are identified using the set of four standard global criteria designed to select representative areas of most important bird habitats, particularly those that are under the most severe pressure.



(*Phoenicopterus urber*) from the Rann of Kutch of India. Over 1000 colorful individuals feeding in the lagoon waters was a sight admired by the ornithologists as well as the laymen. It has also been noted that the around 100 immature remain in BNP until they are ready for nesting.. It is unfortunate to note that no long-term study has been undertaken to monitor the bird abundance in the wetland complex.

No undisturbed dry zone canopy forest survives in the BNP. However, the secondary scrub-grass habitats with a few emergent species such as palu, weera etc hold good habitat potential. Excessive livestock grazing and cutting of native fuel wood species has encouraged the growth of exotics like *Prosopis juliflora* and *Opuntia dillenii*

Around 4-5,000 buffaloes and cattle belonging to local livestock farmers graze in the park. As bulk of the land in the vicinity has been diverted to settlements and agriculture, these cattle farmers have no ready alternative at present. The excessive grazing also conducive to the spread of invasive *Opontia* and *Prosopis*,

BNP is a popular destination for bird lovers, both local and foreign. Compared to parks such as Yala Block 1 and Udawalawe, BNP receives smaller numbers of visitors due to multitude of factors. One reason being the small numbers of charismatic species such as elephants. Yet the Park earns around 3- 8 million rupees annually from tourism, primarily as entrance fees, but the only bird hide within the BNP (near the campsite at Malala lagoon) has been neglected and is need of repairs. More hides

with proper interpretation material are needed at strategic points to facilitate bird watching. The newly developed visitor center should promote bird watching by making it possible for visitors to 'hire" bird guide books and binoculars as well as a telescope over looking Embilikala lagoon.

Bundala sanctuary was upgraded in to a National Park in 1992. Unfortunately, the enhancement in the legal status to a national park of the entire sanctuary area was done in the apparent disregard of the ground realities. The Bundala Sanctuary, contained a significant extent of privately owned land, and leases, grants covering large segments of three lagoons for salt manufacture (Maha, Koholankala and Bundala), beside the traditionally practiced activities such as livestock grazing, firewood collection, and fishing. All these activities are illegal according the FFPO, as only state owned land can be gazetted as a National park, and no traditional activities are permitted inside a NP. This mistake was recognized some time later and a survey with the help of the Survey department was carried out in 1995. This excluded a part of the leased area and all the inhabited areas from the re-defined and described boundaries. But this was not brought to its logical conclusion of re-defining the BNP with reduced extent. It took another nine years for DWLC to regazette the BNP with altered boundaries and on 28th July 2004, the park area reduced to 3,698.010 ha, with the exclusion of Maha lagoon, a part of Kohloankala lagoon and main part of human settlements including a school, temple and petrol station. This reduction had lead to a court case against the Environment Minister and the Director DWLC by an NGO on the grounds that the said order had been made without considering the relevant facts and or/any scientific feasibility report or after considering relevant facts and therefore, arbitrary, unreasonable, and irrational and hence ultra vires the powers vested by the provisions of section 2, particularly of subsection 4(a) of the FFPO. The case is still pending.

There is considerable tension between DWLC and local communities as traditional livelihood activities have been considerably disrupted by the declaring the area as a National Park. It has affected access to fuel wood, open water bodies, edible plants, fruits and gravel for roads. Local fishermen travel through the park unhindered. This disturbs a range of habitats and some beaches are rendered unsuitable for nesting by sea turtles. The fishermen are also requesting a fishery harbour at Pathiraja, which is heavily used by them presently and is centrally located. A strictly controlled approach road

must be provided from Pallemala to Pathiraja for the genuine fishermen.

Recently the DWLC has tried to move away from its traditional protectionist approach towards a more participatory approach to park management, trying to involve the local community and to increase their understanding of the benefits to be gained from conservation. Villagers are employed by the DWLC for turtle conservation activities, as volunteer guides and for the removal of invasive alien species.

Bundala is threatened by a multitude of proposed developments in the immediate vicinity (Hambantota "mega-city", oil refinery, new harbour, wind farms, international airport, hotels etc). If some of the planned projects are implemented, the quality of the wetland for migrating waterbirds will be further diminished and eventually lost altogether.

This unique ecosystem has received assistance through various donor projects to upgrade its management capacity. In 1993 the Central Environment Authority prepared a wetland site report and a conservation plan for Bundala. Subsequently in 1999, a Management Plan for the BNP was prepared by the DWLC under the GEF funded "Development of Wildlife Conservation and Protected Area Management" project for the period of 2001 -2004. Solutions to some problems, which hindered the sustainability of the park, were outlined in this Management Plan. Some of the recommendations of this plan are now being implemented under the present GEF project.

Under the present ADB/GEF funded Protected Areas Management and Wildlife Conservation Project (PAMW-CP), which aims to strengthen the DWLC's ability to manage PAs in accordance with management plans, has prepared an operational plan for the BNP with a vision to conserve it as an international RAMSAR Wetland Site, with its unique ecosystem rich in biodiversity, and provide refuge to threatened and migratory species through community participation. The plan's Mission is "an adaptive participatory management system implemented at the BNP that conserves its biodiversity especially with reference to the wetlands, while providing services to visitors and communities conforming to conservation concepts and information on the significance of wetland ecosystems".

To achieve this the following Management Objectives have been identified:

- To restore and manage the Bundala wetland ecosystem



- To restore and manage the terrestrial ecosystems
- To effectively administer and protect the habitats and archeological sites of BNP
- To provide visitor services including dissemination of information on wetland ecosystems
- To empower local community to participate in and benefit from the conservation of BNP

As the operational plan is yet in its embryonic stage it will be interesting to see how the DWLC plans to continue these objectives after the external funding from the present GEF project ends, as the operational plan does not contain financial provisions for the continuation of activities.

Another option available to DWLC is to use the Ramsar Convention's mechanism for recording and managing sites that are in danger, by introducing them into the Montreux Record. Contracting parties are required to monitor the conditions of site including all actual or likely changes in ecological character and notify the Ramsar Bureau of problems and, where appropriate, seek a Ramsar Advisory Mission in finding a solution. When remedial action has been implemented, the

site may be removed from the Montreux Record. Putting the Bundala Ramsar site into the Montreux Record, might give the DWLC and the other stakeholders a chance to mitigate the adverse impacts faced by this unique wetland and preserve it for the enjoyment of future generations.

This article was based on background information collected by the author for her PhD study in Marine and Coastal Protected Areas in Sri Lanka

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Photographs by : **Rahula Perera**