

WETLANDS OF SRIKAKULAM DISTRICT

AN ECOLOGICAL STATUS SURVEY

Final Report

Submitted to

Ministry of Environment and Forests, Government of India

Mathew K Sebastian, P R Arun, T Arthi, M Murugesan & .P.A.Azeez

Sálim Ali Centre for Ornithology and Natural History
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Executive Summary

The district Srikakulam ($18^{\circ} 20'$ to $19^{\circ} 10'$ N latitudes and $83^{\circ} 05'$ to $84^{\circ} 30'$ E longitudes) is the most north-eastern and second smallest district in Andhra Pradesh. Spreading over 5837 Km² of area, it shares borders with Odisha state in the north, Vizhinagaram district of A P in the west and south. On its east lies the Bay of Bengal. It is divided into 38 Mandals under three Revenue Divisions viz. Srikakulam, Palakonda and Tekkali.

In view of the large number of wetlands in the district, of which many are under serious threat, the Union Ministry of Environment and Forests (MoEF) entrusted SACON with the present study on the 'ecological status of the wetlands of Srikakulam district'. Although initially envisaged as a short-term, three months, project, considering the number and diversity of wetlands, the study was extended to six months.

The district can be distinctively divided into three zones namely i) the hills, ii) the midland plains, and iii) the coastal plains. Most of the wetlands are seen in the coastal plains, followed by the midland plains.

The rivers, Vamsadhara, Nagavalli, Mahendratana and Bahuda flow through the district. The river Vamsadhara, originating in the Eastern Ghats of Odisha state, enters the Srikakulam district in Bhamini Mandal and flows into the Bay of Bengal near Kalingapatnam. The river Nagavalli and its tributary Suvarnamukhi originate in the Eastern Ghats and joins the Bay of Bengal at Kallepalli near the Srikakulam town. The smaller rivers Mahendratana and Bahuda drain the northern parts, a narrow stretch of land between the Eastern Ghats and the sea, in the district.

The district is industrially backward. The people in the district depend largely on agriculture for a living. Though the main crop is paddy, millets, horse grams and red grams are also raised. Vegetable/fruits such as Cabbage, Cauliflower, Tomato,

Papaya, Jack Fruit, Cashew, Lemon, and Guava are also cultivated. Jute is also widely cultivated to serve the local industries.

Pisciculture is practiced in most of the wetlands. Traditional inland fishermen depend upon these wetlands for their livelihood. Wetlands in the district provide a number of ecosystem services such as water for irrigation and fish culture, habitat for wildlife, grazing field for livestock, and as a source for fodder, materials for making traditional gadgets for people's day to day uses, edible and medicinal plants. The role of these wetlands in recycling nutrients and arresting of sedimentation and controlling floods remains undervalued.

The coastal plains are blessed with numerous wetlands of different sizes and characteristics, of which 'Beelas' are of ecologically and economically important (Beelas, in the vernacular, are back waters, a wetland system fed by flood waters or a network of streams/channels and connected to the sea through a creek/channel). Four major large wetland complexes, namely Naupada, Sompeta, Ichapuram and Poondi are situated in the coastal plains in the district. In addition there are hundreds of small and medium, seasonal and perennial wetlands of diverse nature.

Sompeta Beela, a complex of three separate but connected water bodies of which two are brackish and the other fresh water, with its surrounding flood plains is a wetland complex with an approximate area of 800 hectares. It is an important habitat of 121 bird species and 493 plant species. Many bird species seen here fall under IUCN Red List. Around 100,000 people belonging to 30 villages around the wetland depend upon the wetland complex for various purposes, deriving ecosystem goods and services. During the dry season drained out portions of the wetland is used for grazing by thousands of cattle and wild boars. Around thousand families belonging to the traditional fisher communities fully depend upon the wetland for their sustenance. Around 2000 hectares of paddy (two crops) and 300 hectares of vegetable and horticultural crops are irrigated directly drawing water from the beela.

Naupada swamps is another large wetland complex which falls in the Tekkali division of the district. The Naupada swamps consists of vast stretches of perennially and seasonally water logged areas, salt pans, and the Tekkali creek through which it connects to the sea. As per the revenue records the total wetland area, excluding the creek, is approximately 2800 hectares. During monsoon, fed by numerous water channels, vast stretches of this wetland is inundated. Thus, Naupada swamps perform invaluable ecosystem services of flood and siltation control, and enhancing the recharge of ground water in hundreds of villages in its environs.

It is an important foraging ground for Pelicans and Painted Storks from the Telineelapuram Important Bird Area (IBA), just 4 Km away. Our rapid survey found 145 bird species here, out of which 13 species belong to the IUCN Red List. Two thirty six plant species were also listed from the swamp area. One thousand fishers depend upon the wetland on a regular basis eking out a living. This wetland also provides numerous wetland services to lakhs of people in the surrounding villages.

Poondi wetland, a backwater one, has a water-spread of about 200 ha and vast stretches of salt pans and aquaculture farms in the adjoining areas. Ichapuram wetland spreads across the Srikakulam and the Ganjam district of Odisha state. Apart from providing habitats for several species, this wetland and adjacent hundreds of acres of salt pans and aquaculture farms provide livelihood for thousands of households.

All the above mentioned wetlands are extensively used for fishing, traditional fisher communities (viz. Kaviti, Behra and Kandra) holding the rights. These communities use traditional gears and techniques for fishing in a sustainable way. Adept only in these traditional skills their survival is inextricably linked to the survival of the wetlands. Same is the case of several invaluable and wild species living in / on the wetlands.

In addition to the abovementioned major coastal wetland complexes hundreds of wetlands of different sizes and characteristics are seen in the coastal plains of the district. Most of the wetlands, despite pressures from intentional and unintentional anthropogenic and other pressures, harbour valuable floral and faunal biodiversity. These wetlands provide several known crucial ecosystem services such as water for irrigation, fishing, grazing land for thousands of cattle during lean period, fodder, edible and medicinal plants, roofing and thatching materials, and several unaccounted services such as moderating local climate and offering haven for several known and unknown species. Regulating services such as flood control, sediment retention, ground water replenishment, and water purification contribute to the very maintenance and survival of the ecology of the entire region, which however remains largely unrecognised, neither studied nor documented.

Both the Important Bird Areas (IBA) in the district, Telineelapuram and Telkunchi are in the coastal areas of Srikakulam. While Telineelapuram harbours more than 150 Spot billed Pelicans and 200 Painted Storks, Telkunchi sustains thousands of Open Bills and many other birds.

The coast of Srikakulam district is the second largest breeding site after Odisha coast for the endangered Olive Ridley Turtles. Their preferred breeding grounds are the river mouths and adjoining areas. Olive Ridley Turtles travel from the sea south of Sri Lanka to the coasts of Odisha, passing through Tamil Nadu and Andhra coastal waters during the breeding season. Therefore to ensure the survival of Olive Ridleys , it is imperative that the coasts and coastal waters are kept devoid of constructions that will change the coastal setting and ambience.

The midland plains in the district are also rich in wetlands of varying sizes harbouring valuable biodiversity and providing various ecosystem services. Many of these wetlands are connected to rivers Mahendratanaya, Vamsadhara or Nagavalli. A number of these perennial wetlands are foraging grounds for several

conservationally important bird species such as Spot billed Pelican and Painted Storks.

Madduvalasa reservoir created by a dam in the Swarnamukhi river, which is a tributary of Nagavalli, is important for people of the district. It also supports very important biodiversity; both floral and faunal. Apart from many other birds, species such as Darter, large flocks of Tufted Duck showing some morphological variance, was observed here.

The integrity of most of the wetlands is under threat due to various pressures, some of which are universal and some particular to the district. Due to the well developed transportation links such as the Chennai-Calcutta National Highway and the broad-gauge railway line passing through the coastal areas, and easy access to the sea for building Jetties, transportation of construction materials and raw materials for industries is cost effective. Proposals for setting up two Super Thermal Power Plants (STPPs), one at Sompeta and another one at Bhavanapadu, a part of the Naupada swamps, are in advanced stage. Despite intense opposition from the local communities, NGOs, Environmentalists and Scientists, permission was granted for both the proposals. However, both places have seen 3 human casualties each while protesting against the projects, forcing the authorities to suspend permission for the projects till further studies are taken up on the ecological status of all the wetlands of Srikakulam district (order dated 14 July 2010 by National Environment Appellate Authority).

The changes in the natural landscape settings, alteration in natural flow regimes, construction of roads, transportation of construction and raw materials and release of thousands of tons of pollutants to the environment during the operation of the STPPs will cause irreparable damage to the coastal ecosystem imperilling not only the rich biodiversity but also the wellbeing of lakhs of inhabitants of the coastal area who depend upon the wetlands directly and indirectly and would effectively marginalise them. The impact of the jetties proposed to be built for bringing in fuel /

coal for the STPPs and the release of thousands of gallons of water to the sea during the STPP operation on the breeding migration of the Olive Ridley Turtles as of now is little known.

Bhavanapadu wetland is an important foraging ground for the Spot billed Pelicans and Painted Storks of the Telineelapuram Heronry. Any qualitative / quantitative changes in the Bhavanapadu wetland will adversely affect the survival of these 'Near-threatened' birds.

Our exploratory surveys employing participatory tools among the adjoining villages indicate a strong possibility of the existence of the critically endangered Pink Headed Duck during November to January in the core area of Sompeta wetland. Any changes in the wetland complex will deny an opportunity to take up further enquiries in this regard and perchance if this 'critically endangered' species is confirmed as present there it will lead to an irremediable loss.

It is disheartening to note that water from none of the wetlands is used for drinking indicating the deterioration of the water quality. The major threats generally faced by the wetlands of the district are pollution caused by agricultural runoff, wide usage of wetlands for curing the jute bark, dumping of solid wastes especially in urban and semi urban wetlands, sewage discharge, encroachment, open defecation on the banks of wetlands which leads to increased microbial and organic load. Poaching of birds is widespread in the wetlands. Cleaning and modification of wetlands, without appropriate supervision, under the MNREGA programme is also wiping out plant biodiversity from many of the wetlands and possibly associated animal species.

As of now consequences of Industrial pollution is explicitly seen only in the Pyedibhimavaram area, bordering the Visakhapatnam district, hardly five kilometers away from the coast. Most of the effluents here flow to the sea through a wetland near the industrial area. Effluents from M/s Nagarjuna Agrichem Ltd manufacturing agrochemicals including fungicides and pesticides apparently play havoc with the

ecology of the nearby wetlands and ecosystems and deprives the local inhabitants' of safe drinking water and water for irrigation.

The wetlands and its environs of Srikakulam district provide habitats for 236 bird species and 662 plant species. Information on other taxa is scanty. As noted above several birds falling under 'Near threatened', 'Vulnerable' and 'Endangered' IUCN categories and Schedule- I of IWPA-1972 are seen in the wetlands and its environs.

The 'Beelas' as made out are not inconsequential water bodies in the coastal plains and should be protected from any violations of their integrity as they are ecologically sensitive and important, habitats for diverse biodiversity including several species under various categories of threat, and to ensure environmental, food and water security for lakhs of people. The plans for setting up the Super Thermal Power Plants in those wetlands should be re-examined.

Lakhs of people depend upon the various ecosystem goods and services provided by the coastal wetlands for their survival. There are 83 marine fisher's habitations apart from the hundreds of settlements of local farmers, traditional pisci-culturists, workers in the numerous salt pans and inland fishers in the coastal area. The water and food security of the coastal plains depend upon the wetlands to a great extent. Therefore, no activity that will threaten the integrity of the wetlands should be allowed.

Srikakulam coast is the second largest endangered Olive Ridley nesting site in India. This species prefer river mouths for breeding. Therefore, special protective measures have to be devised and executed in the coastal belt. The coastal waters of Andhra Pradesh being an important pathway for migrating Olive Ridley turtles in search of their nesting sites, construction of Jetties near the Srikakulam coast and also the release of effluents to the sea should not be allowed.

To conserve the breeding sites of the Olive Ridley Turtles, 'Interest Groups' involving the stakeholders have to be formed and awareness campaigns and other steps needed for achieving the objective should be taken up.

Since, our survey using PRA tools surmises the presence of the endangered Pink Headed Duck, which has not been sighted in the country for more than half a century, in the core area of the Sompeta wetland, pending its confirmation, immediate steps should be taken up to protect the habitat from any disturbance and investigations should be taken up right away to ascertain the presence of the bird.

Both Naupada swamps and Sompeta wetland are rich and distinctive ecosystems. However, scientific documentation on these wetlands is grossly inadequate and therefore it is imperative that a multidisciplinary research programme is taken up on these wetlands and a comprehensive management plan prepared. Considering their apparent ecological values steps should be initiated to declare both the wetlands as Ramsar sites.

Jute cultivation and processing is an important economic activity in the district. Appropriate methods that will not spoil the wetlands may be devised and executed for curing jute. Construction of special cement water tanks may be considered for the purpose.

The present survey indicates that many fishermen indulge in poaching birds and other wild life, maybe being unaware of the importance of such species. Awareness programmes have to be initiated to address this issue. Programmes with stakeholder participation should also be formulated that would help in this and protect such wetlands.

Under the Mahatma Gandhi National Employment Guarantee Programme cleaning and expansion work has been taken up in many wetlands which lead to the removal of plant biodiversity which in turn impact the bird and other animal biodiversity.

Measures to sustain the biodiversity of the wetland have to be devised and implemented while carrying out such works using MNREGP funds.

Wetlands should not be used as dump yards for wastes of any kind, municipal, industrial, commercial or domestic. Industrial effluents should not be allowed to be discharged into the wetlands even after treatment. Rules and regulations pertaining to Solid Waste Management and wetland management should be strictly enforced.

In brief, it is suggested that all the wetlands (including interconnected wetland complexes such as coastal wetlands of Sompeta) in the district with more than 500 ha should be identified and protected alongwith wetlands that are ecologically sensitive, though they are less than 500 ha, and important which are major wildlife habitats, areas of outstanding natural beauty or historical or heritage areas and the areas rich in genetic diversity as stipulated in the National Wetland (Conservation & Management) Rules-2010. They should not be allowed to be converted for any other purpose. It is also suggested that firm attempts should be made, especially for the four major wetland complexes in the coastal plains, to document their ecological and conservational values, the ecological goods and services from these and to conserve them. A strategy to use them wisely in sustainable manner should be formulated and executed, perhaps by a system such as ecodevelopment committees.