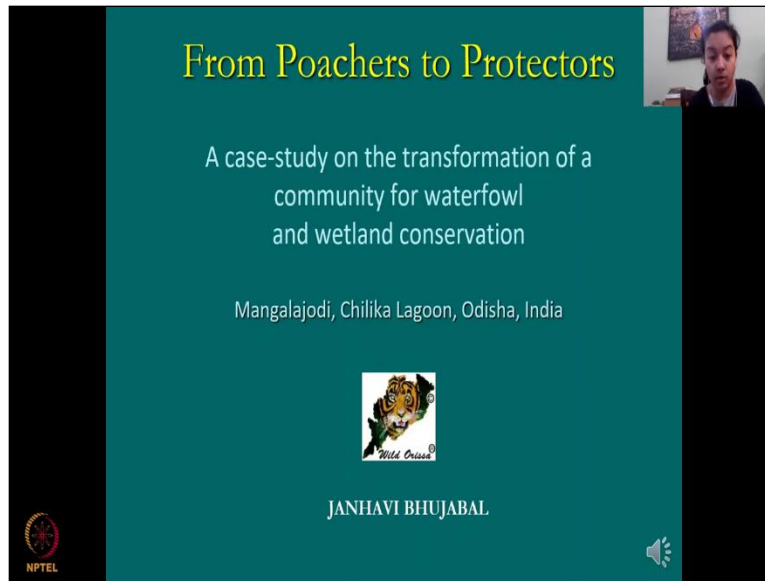


Basic Course in Ornithology
Jahnavi Bhujabal
Wild Orissa

Lecture 32
Avian Conservation Case study 1

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From poachers to protectors, a case study on the transformation of a community for waterfowl and wetland conservation. I am Jahnavi Bhujabal and I will be taking you through the journey of Mangalajodi. The central Asian fly way or the CAF is the shortest flyway for migratory birds in the world. Lying entirely within the northern hemisphere, connecting a large swathe of the Palearctic with the Indian subcontinent more than 300 species travel along the central Asian fly way.

Unfortunately, many of the world's migratory birds are in decline and the reasons are many. Migratory birds are reliant on favourable weather conditions and must find sufficient food resources at multiple sites throughout their migratory journey. The central Asian flyway is the most poorly studied flyway with little known about the status of the birds which use it. It is likely however that many populations are in decline and there are currently several species regarded as globally threatened.

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Chilika Ecosystem

- Estuarine, brackish-water lagoon; Largest brackish wetland in India
- Spread over 1,16,500 ha. (906 – 1165 sq km); over 80 islands
- Connected to Bay of Bengal on its NE side
- Ramsar Site (1981)

Largest wintering area for migratory waterfowl in the Indian subcontinent

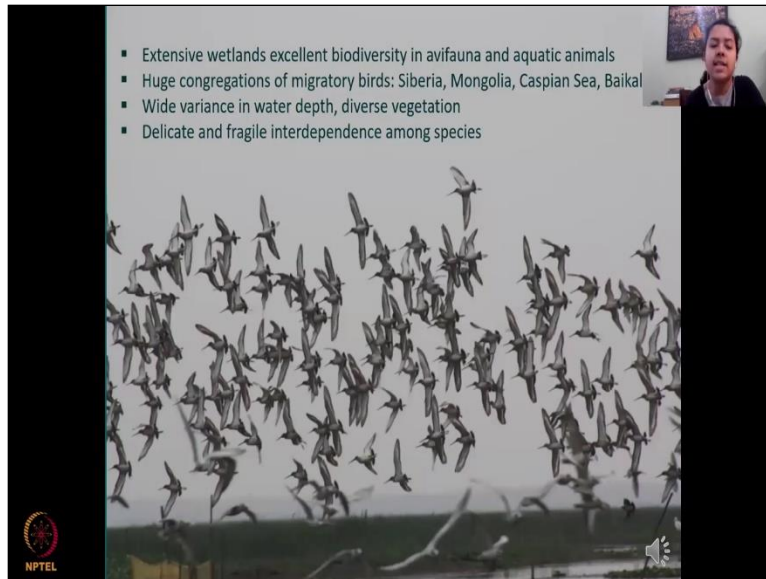
c. 1.1 million birds estimated (2021 census)

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Over the full length of the flyaway, important habitats for migratory birds are being rapidly degraded by a range of anthropogenic or human induced threats. Wetlands are particularly imperiled for reason various reasons. India has a strategic role in the flyway as it provides critical stop over sights to over 90% of the bird species known to use this migratory route. Manglajodi in Chilika lake, is one of such critical wintering sites for migratory waterfowl.

Chilika lake in the state of Orissa is unique from the perspective of avian faunal diversity. This Ramsar wetland harbours many species of birds many of which are residents in this largest brackish water lake in Asia. Spread over 116500 hectares with over 80 islands, it is connected to the Bay of Bengal from its northeastern side and was declared as a Ramsar site in 1981. Its significance lies in the fact that it is the largest wintering area for migratory waterfowl in the Indian subcontinent accounting for about 1.1 million individuals as estimated in the most recent state census of 2021.

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▪ Extensive wetlands excellent biodiversity in avifauna and aquatic animals
▪ Huge congregations of migratory birds: Siberia, Mongolia, Caspian Sea, Baikal
▪ Wide variance in water depth, diverse vegetation
▪ Delicate and fragile interdependence among species

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Its extensive wetland coverage provides pristine biodiversity in avian fauna and aquatic animals. Sheltering huge congregations of migratory birds from as far as Siberia and Mongolia. Its diverse vegetation is attributed to the wide variance in water depth and the delicate and fragile interdependence among species.

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▪ Over 800 species of fauna
▪ Close to 200 species of avifauna
▪ c.225 species of fish
▪ c.710 plant species (aquatic and non-aquatic)
▪ 40/84 shore birds in India
▪ 1.56 lakh Gadwalls and 1.15 lakh Northern Pintails in 2010

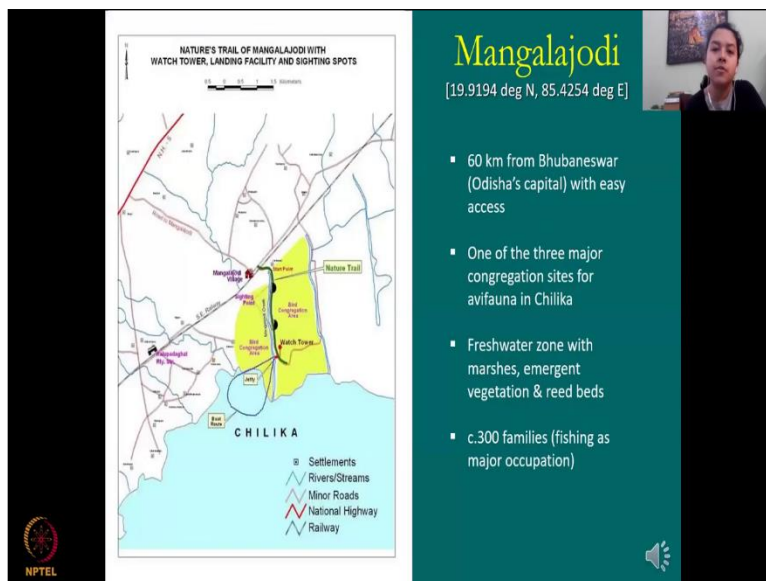
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Accounting for over 800 species of fauna 200 species of avian fauna with 225 species of fish and 710 plant species.

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The Asian Dowitcher, Goliath Heron, White spoonbill, Spoon-billed sandpiper, Osprey, Indian Skimmer, Pallas’s Fish Eagle, Spot-billed Pelican and the White-billied sea-eagle which has been featured here have been some of the bird species which frequent the wetlands of Chilika lake. Along with them it also houses the Irrawady dolphin, Fishing cat, Skinks and Smooth-coated Otter. **(Refer Slide Time: 03:31)**



Located 60 kilometers from the capital city of Bhubaneshwar, Mangalajodi is one of the many villages located in and around Chilika lake and is located about five kilometers from the village of Tangi in Khordha district. Primarily a freshwater zone with marshes emergent vegetation and reed beds consisting mostly of *Typha* and *Phragmites karka*. Mangalajodi is connected to the northern

sector of Chilika lake and Kalupara ghat by way of channels dug through the fragments Karka reed bed.

With 300 families having fishing as the major occupation primarily sourced from the open waters with some fresh water fishes being harvested in the canals.

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Mangalajodi

- 83% Phragmites, rest marshland with wet meadows
- Extensive reed lined water-ways and channels for avifauna activity including roosting, nesting and breeding
- Abundant supply of aquatic food to support large congregations of avifauna
- Excellent habitat for Eurasian Coot, Common Moorhen, Rails, crakes, migratory warblers and bitterns
- Large congregations of dabbling ducks: Northern Pintail, Northern Shoveller, Garganey, Brahminy Duck, Ruddy Shelduck
- Excellent potential (spotted in early 1990s) for wildlife tourism
- Increasing human pressure and footprint
- Threats of unsustainable development, including constructions

The extensive reed lining of waterways and channels provides an excellent habitation for roosting, nesting and breeding activities for species like Eurasian Coots, Moorhens migratory Bitterns, Warblers and other species of dabbling ducks like Pintails and Shovellers alike. This coupled with the abundant supply of aquatic food supports and makes it one of the three major congregation sites for avifauna in Chilika.

Apart from fishing, people are also involved in agriculture. Mangalajodi in early 1990s was spotted to have tremendous potential as a wildlife habitat and as a tourism hotspot even today. Some problems associated with this were identified to be increasing human pressure and footprint and associated unsustainable infrastructural development.

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The video player shows a slide with a teal background. At the top, there are two images: on the left, a bird is perched on a nest made of dry sticks; on the right, a large green leaf has a dark, irregular spot on it. Below the images, there is a bulleted list. In the bottom left corner of the slide, there is a small circular logo with the text 'NPTEL' below it. In the bottom right corner, there is a speaker icon. A small video window in the top right corner shows a person speaking.

- Poaching and illegal trade of bird meat
 - Guns
 - Poisoning
 - Nets and traps
- Reed harvesting
- c.80 efficient poachers

However, the issue of poaching, reed harvesting and illegal trade of bird meat using guns, poisoning, nets and traps became one of the major concerns threatening the integrity of the sensitive ecosystem. There used to be around 80 poachers in the village, who regularly sold their gains in open markets at varying rates depending on the species and method of killing employed. As this was a fruitful business to the poachers, this in turn caused huge damage to the wetland habitat due to rampant removal of water birds.

Moreover, the collection of eggs that sail and slaughtering of migratory and resident waterfowl species was noticed to have been the target of not only Mangalajodi poachers.

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- At Rs 20-60 per bird, they were making a substantial income (1994-96)
- Open market sale of bird meat and eggs - social acceptance
- Inadequate staffing of guards and low efficiency in combating wildlife crime

But also, those from nearby villages of Sorana. This was socially accepted as a means of living and had inadequate staffing of guards to combat the wildlife crimes that ensued.

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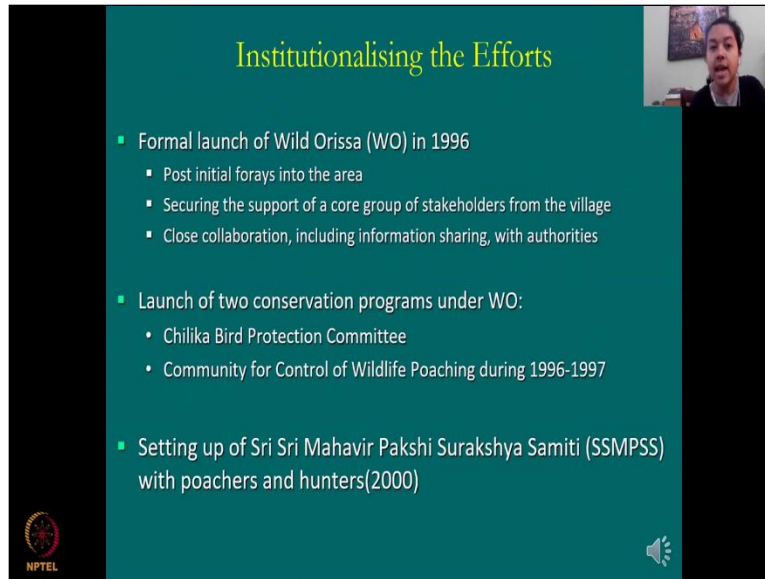
Restoring the Ecosystem: Project Strategy

- **Sensitisation**
Addressing the lack of understanding on the illegality of poaching, reed harvesting
- **Intervention**
Stepping in constructively to try and manage incidents, including poaching cases
- **Awareness**
Information outreach on the importance of avifauna and ecosystem and its positive impact on the village/community
- **Solutioning**
Finding sustainable alternatives to substitute the income from wildlife trade

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Arduous part of restoration followed an integrated strategy of sensitization, intervention, awareness and solutioning.

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Institutionalising the Efforts

- Formal launch of Wild Orissa (WO) in 1996
 - Post initial forays into the area
 - Securing the support of a core group of stakeholders from the village
 - Close collaboration, including information sharing, with authorities
- Launch of two conservation programs under WO:
 - Chilika Bird Protection Committee
 - Community for Control of Wildlife Poaching during 1996-1997
- Setting up of Sri Sri Mahavir Pakshi Surakshya Samiti (SSMPSS) with poachers and hunters(2000)

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India has witnessed many approaches at wildlife conservation. In most cases in India there are government-initiated measures at conserving India's natural heritage. An initiative to address the problem of poaching of waterfowl and ensuring the conservation including that of that habitat has been carried out by Wild Orissa, an organization which outside the environment outside the government and deals with conservation activities since 1996.

Understanding that the involvement of poachers and hunters who are major stakeholders in illicit poaching and traffic and trading wildlife. Efforts were successfully made to ensure their participation in containing poaching of waterfowl in Chilika lake. Wild Orissa constituted a bird protection committee called the Sri Sri Mahavir Pakshi Suraksha Samiti in the year 2000. At the same time what was also critical was that Wild Orissa facilitated the involvement of Odisha Wildlife Department, Chilika Development Authority, Bombay Natural History Society etc.

Who provided resources and expertise in this initiative. This initiative at waterfowl conservation with the participation of poachers and hunters is a model that is unique in its practice in Indian conservation history.

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■ **Sensitisation**

- Identifying poachers, continuous information on their activities and movements
- Networking for community support
- Building sense of ownership
- Topography and avifauna linkages
- Collaboration with authorities

■ **Intervention**

- Discreet information-gathering on poachers, methods, and supply chain
- Quick reporting of poaching through regular field visits and local volunteers
- Facilitating more effective action by authorities
- Recruiting local volunteers to support the cause and recognising efforts

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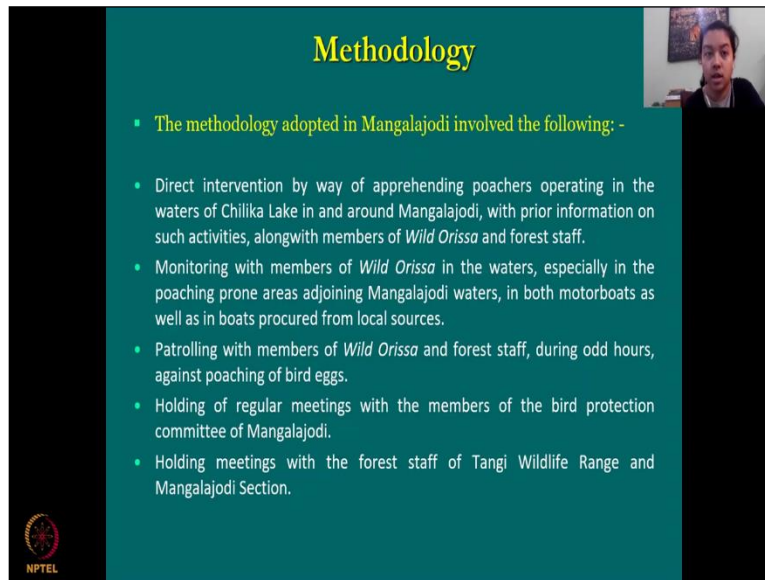
In a complex world of conflicting demands placed by multifarious consuming factors, conservation of wetlands and their biodiversity is one of paramount importance. Certain important aspects required to be put in place which includes ensuring that one time poachers and hunters are involved at every stage, holding regular consultations with local stakeholders, introducing sustainable activities which are not detrimental to the local ecology, introducing environmentally friendly practices.

Organizing strong awareness programs, effective coordination with government agencies, facilitating an effective media and civil society interface and providing a strong base for research and putting in place an effective feedback mechanism were of primary importance. This approach in wildlife conservation has ensured empowering local community in conservation of biodiversity by making law breakers as primary stakeholders in lawful implementation of public policy.

Raising awareness through conservation activities involving committees were undertaken along with sessions on avifauna and wetlands. Finding a sustainable solution to the shift of the method of income generation for families was identified to be of utmost importance and thus by ensuring income for the poachers turned conservationists. This could help mitigate the poor economic conditions and ensure their continuous involvement in waterfowl conservation.

In this way ecotourism was initiated with the assistance of Chilika development authority during 2002 with gradual infrastructural buildup and associated recognition building activities.

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The slide is titled "Methodology" in yellow text on a teal background. It contains a list of six bullet points describing the methodology used in Mangalajodi. In the top right corner, there is a small video inset showing a person speaking. In the bottom left corner, there is a small logo for NPTEL.

- The methodology adopted in Mangalajodi involved the following: -
 - Direct intervention by way of apprehending poachers operating in the waters of Chilika Lake in and around Mangalajodi, with prior information on such activities, alongwith members of *Wild Orissa* and forest staff.
 - Monitoring with members of *Wild Orissa* in the waters, especially in the poaching prone areas adjoining Mangalajodi waters, in both motorboats as well as in boats procured from local sources.
 - Patrolling with members of *Wild Orissa* and forest staff, during odd hours, against poaching of bird eggs.
 - Holding of regular meetings with the members of the bird protection committee of Mangalajodi.
 - Holding meetings with the forest staff of Tangi Wildlife Range and Mangalajodi Section.

Methodology. The methodology adopted in Mangalajodi involved the following. Direct intervention by way of apprehending poachers operating in the waters of Chilika lake in and around Mangalajodi with prior information on such activities along with members of Wild Orissa and forest staff. Monitoring with members of Wild Orissa in the waters especially in the poaching prone areas adjoining Mangalajodi waters, in both motorboats as well as in boats procured from local sources.

Patrolling with members at Wild Orissa and forest staff, during odd hours, against poaching of bird eggs. Holding of regular meetings with the members of the bird protection committee of Mangalajodi. Holding meetings with the forest staff of Tangi Wildlife Range and Mangalajodi section.

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• Outings with visiting scientists from the Bombay Natural History Society etc., to the breeding habitats.

• Involvement of school children in boat excursions to the bird breeding habitats.

• Organising competitions on Chilika Lake and its birds, amongst school children of the area.

• Seeking interventions of the Chief Wildlife Warden, Irrigation Department, Chilika Development Authority, etc., on the fragile waterfowl breeding habitats.

• Ensuring some income generation for the poacher turned conservationists, which could help mitigate the poor economic conditions of these people, which would ensure their continuous involvement in water fowl conservation, through initiation of an Eco-Tourism Project in Mangalajodi village in the year 2003.

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Outing with visiting students from the Bombay National History Society etc to breeding habitats. Involvement of school children in boat excursions to the bird breeding habitats. Organizing competitions on Chilika lake and its birds, amongst school children of the area. Seeking interventions from the Chief Wildlife Warden, Irrigation Department, Chilika Development Authority etc on the fragile waterfowl breeding habitats and ensuring some income generation for the poacher turned conservationist, which could help mitigate the poor economic conditions of these people.

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Outcomes

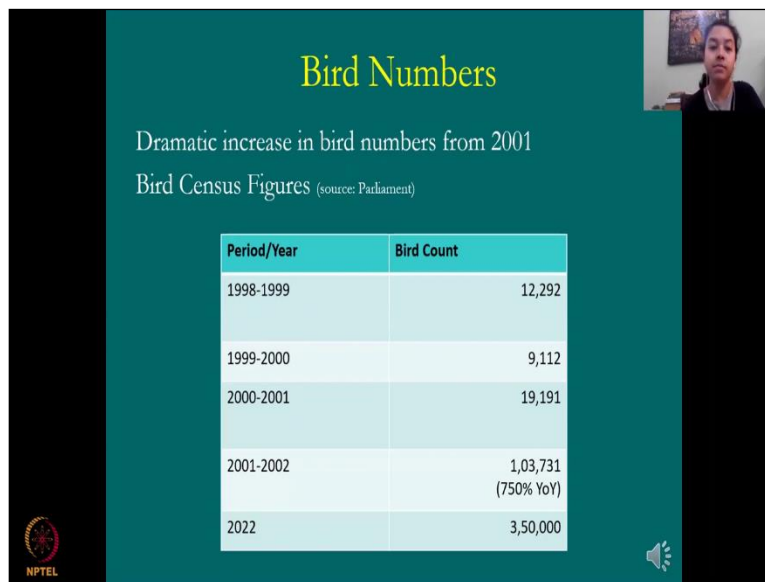
- Near complete elimination of poaching linked to Mangalajodi village
- Surrender of c.25 key poachers, conversion into eco tourism guides and supporting conservation initiatives
- Enforcing strict protocols for ecotourism to preserve the delicate bird habitat
- Strong community ownership of surrounding ecosystem including patrolling and guarding birds/habitats
- Self sustained ecotourism model with boats and staying facilities run by villagers since 2003
- Massive increase in avifauna presence including roosting, nesting, etc
- Active involvement of govt bodies like Chilika Development Authority, Forest Department and independent organisations like BNHS

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The exercise of conservation has had a ripple effect including that of recharging the food chain sustainability of delicate ecosystem, ensuring generation of gainful employment for the local people acting as a beacon for initiation of similar practices around the world as a carbon sink and as a measure for recharging an underground aquifer. One of the critical achievements in this conservation of wetlands and biodiversity is the improvement of socio-economic conditions of the local community.

Rarely has a wildlife conservation model involving one-time hunters has been successful and that was sustained for over a decade. Mangalajodi is famous for its birds and people come over from all across the world to see them in their natural surroundings.

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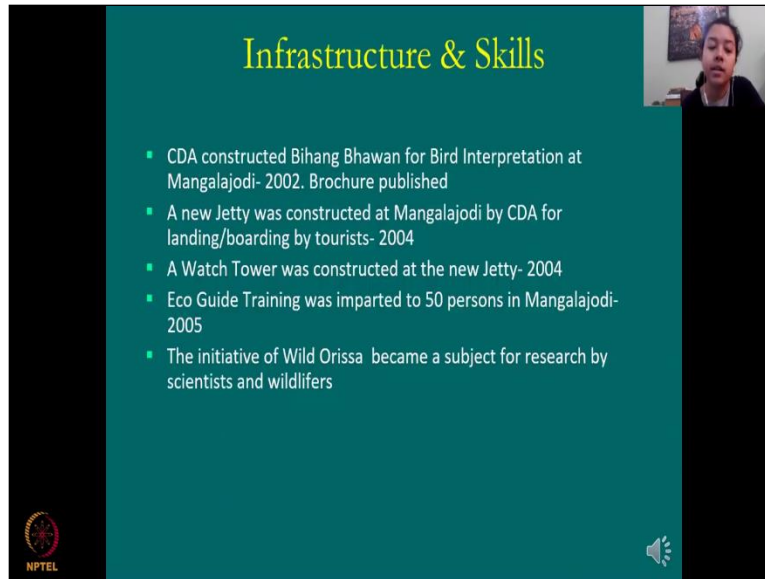
Bird Numbers

Dramatic increase in bird numbers from 2001
Bird Census Figures (source: Parliament)

Period/Year	Bird Count
1998-1999	12,292
1999-2000	9,112
2000-2001	19,191
2001-2002	1,03,731 (750% YoY)
2022	3,50,000

Here we can gauge the figures and dramatic increase in the birding bird numbers from 2001 onwards.

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Infrastructure & Skills

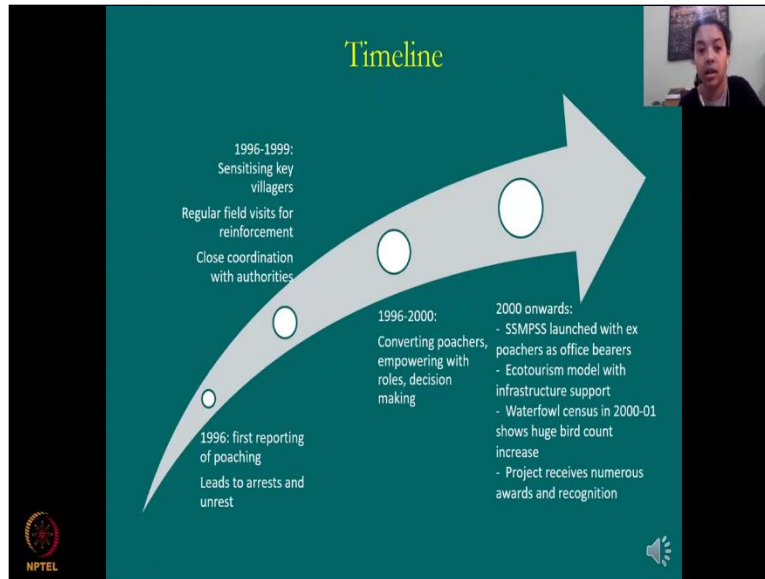
- CDA constructed Bihang Bhawan for Bird Interpretation at Mangalajodi- 2002. Brochure published
- A new Jetty was constructed at Mangalajodi by CDA for landing/boarding by tourists- 2004
- A Watch Tower was constructed at the new Jetty- 2004
- Eco Guide Training was imparted to 50 persons in Mangalajodi- 2005
- The initiative of Wild Orissa became a subject for research by scientists and wildlifers

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The outcomes were noted in near elimination of poaching linked to the village massive increase in avian fauna presence and a sustainable model to promote social economic growth. This in turn was linked to the strong enforcement of strict ecotourism protocols with active involvement from CDA, forest department and BNHS who also provided important infrastructural support. The strong community ownership ensured conservation and self-sustenance since 2003.

Mangalajodi, today one of the India's top world wildlife tourism destinations having been placed firmly in the tourist circuit. The critical and catalytic role played by Wild Orissa in a novel initiative of weaning away poachers and hunters from the perennial problem of poaching and ensuring an alternative livelihood for them has been documented as case studies.

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In 1996, Nandha Kishore Bhujubal along with some more persons who later came together to constitute Wild Orissa had visited Mangalajodi village which revealed the existing situation of rampant poaching and thus led to several arrests by authorities. During this period from 1996 from 1999, intensive interactions were undertaken by Wild Orissa with Mangalajodi inhabitants for the purpose of sensitization and gaining confidence thereby converting the poachers.

From 2000 onwards, through the advent of Sri Sri Mahadev Bakshi Suraksha Samiti poaching was finally brought under control supported by the self-sustainable ecotourism model which finally culminated with large rewards of increasing bird population.

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Recognition

- Mangalajodi listed Important Bird Area (IBA) in 2003 and as Key Biodiversity Area internationally
- National agencies like MoEF, BNHS, WWF-India, etc. recognise and support the initiative
- Birdlife International, Royal Society For Protection of Birds (London) recognise Mangalajodi
- Extensive media coverage and mentions in conservation books/journals

Odisha Government Awards:

- Pakshi Bandhu Award 2002 and Biju Patnaik Wildlife Conservation Award 2007 to the bird protection committee SSMPSS
- National Bird Festival Odisha awards prize to SSMPSS in 2017
- Biju Patnaik Wildlife Conservation Award 2021 to Nanda Kishore Bhujabal Vice Chairman Wild Orissa who led the conservation programme




In 2003, after being taken up by Wild Orissa, Mangalajodi was notified as an important bird area being 1 of the 6 IBAs notified in the State of Orissa under a global initiative for bird conservation with BNHS, Birdlife International, Government of Odisha and Government of India. These efforts were met with several accolades and recognitions like the Pakshi Bandhu Award and Biju Patnaik Wildlife Conservation Award by the Government of Orissa.

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The story in pictures



From poacher to protector

Keeping a watchful eye

Rescuing a Purple Swamphen

Sustainable ecotourism

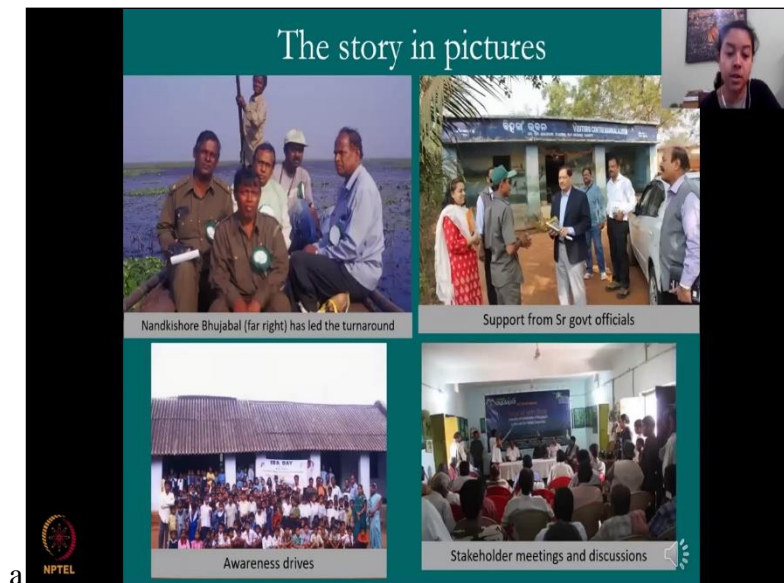



This is the story in pictures, our continued focus has been on marking in violent waterfowl breeding habitats and restricting tourism to designated waterways to provide minimal disturbance. Planting

local food bearing trees for bird species and stricter law enforcement by local communities and authorities has also been tactful to ensure the ideals of sustaining and retaining the core objective.

By providing alternative income generating options and providing a transparent approach. It has been ensured that efficiency, equity, effectiveness and economy are achieved. The latent benefit of ingraining a sense of self-work voluntary approach, self-induced discipline etc. While undertaking waterfowl and wildlife conservation work by the villages of Mangalajodi also led to self-belief and self-importance, all of which has led to the stage where a brigade of conservation for the wilderness has been achieved.

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Today commerce and business interests and private initiatives appear to gain public space but Mangalajodi is a shining example of sustainability, effectiveness, longevity and perseverance. It is Wild Orissa endeavor that it continues to practice them, thank you.