Participatory Wildlife Conservation in Keshopur Chhamb Community Reserve (India’s First) in Punjab – Past, Present and Future Management Strategies

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ABSTRACT

The paper describes about the past historical background of Keshopur wetlands, process of declaration of community reserve, ecological and waterfowl status Keshopur Chhamb Community Reserve, the first reserve to be declared in India so far under Wildlife Protection Act, 1972 (amended 2002). The paper traces the historical background, the present status, diversity of ecosystem and participatory process of declaration. The paper also discusses objectives of management and steps proposed, legal and other administrative measures undertaken for conservation. The ecotourism potential as well as constraints of management are also described.

Keywords: Wetlands, Waterfowl Habitat, Gurdaspur, Punjab, Participatory Processes, Wildlife Management, Community Reserve, Keshopur.

The above study was conducted by the first author as in charge of District Forest Officer (Wildlife), Gurdaspur Wildlife Division, Pathankot, Punjab.

INTRODUCTION

India is endowed with a wide variety of wetlands like marshes, swamps, open water bodies, mangroves and tidal flats and salt marshes etc. Wetlands are the ecotones between permanently aquatic and dry terrestrial ecosystems and are integral to a healthy environment, keeping the water table high and stable. During periods of flooding, they reduce flood levels and trap suspended solids and nutrients. They are important feeding, breeding, and drinking areas for wildlife and provide a stopping place and refuge for waterfowl. As with any natural habitat, wetlands are important in supporting species diversity and have a complex and important food web. The recent millenium assessment of ecosystems puts freshwater biodiversity as the most threatened of all types of biodiversity.

Keshopur Chhamb Community Reserve is one such dynamic fresh water natural wetland ecosystem in Tehsil and District Gurdaspur in Punjab. It is located between Latitude 32°05’ 16.3” N and Longitude 75°24’ 24.2”E at an altitude of 245 m. The reserve comprises of fresh water marshes (natural wetlands) presently to an extent of 850 acres and is an important waterfowl habitat and bird migratory corridor during winter season. The entire community reserve is on two marshes owned by five village Panchayats, the major one being Miani (400 acres), Dalla (152 acres), Keshopur (136 acres), Matwa (51 acres) as contiguous wetlands and Magarmudian (111 acres) as another portion. The wetland is well connected by rail, road and other means being located on the main line of Jammu.

HISTORICAL BACKGROUND

The details about wetlands and waterfowl present were described in Gurdaspur District gazetteers as below (Anon, 1914). A marked feature of the Bari Doab is the existence of numerous Chhambs or swamps. The most important of these are the Kahnuwan Chhamb, Keshopur, Magar Mudian and Paniar Chhambs near Gurdaspur. Game birds, chiefly water-fowl, are quite plentiful; with abnormally severe weather in the hills wild swan have been known to visit the district and some were shot here in 1911; these were the Mute swan; a Hooper swan, the only instance of this variety being found in India, was shot on the Beas many years ago by General Osborne; the kunj or kulan comes into the north of Shakargarh in the winter and sand-grouse are also to be found in the north-west of that Tehsil and occasionally in sandy tracts in other parts of the district. Quail are common in the swamps and in the ripened crops both in October and April. Black and gray partridge and a few kalij pheasants and jungle-fowl frequent the low hills. Geese come in fairly large numbers in November and February on their way from and to the hills, and duck of all kinds are very numerous on similar migrations in October and April.
During the rest of the cold weather ducks are not so frequently seen as might be expected and they are usually kept well on the move by the parties of sportsmen who visit the district during the winter.

The game bird *par excellence* of the district is the snipe, and this sporting little bird is always to be found during the cold weather months in the swamps; only the fan-tail and the jack-snipe are met with; the pintail does not come so far north. Of the game birds described in Hume and Marshall's "Game Birds of India" the following are found in the district.

The common sand-grouse .. Pterocles exustus.
The common peafowl  Pavo cristatus.
*The koklas  Euplocamus macrorhynchus.*
*The White-crested kalij .. Euplocamus albobrachialis.*
*The red jungle-fowl  Gallus gallus.*
#The black partridge  Francolinus francolinus.
#The gray partridge  Orlygornis ponicerianus.
The common or grey quail .. Coturnix communis.
*The rock-bush quail  Perdicula argoondah.
The saras  Grus antigone.
The common crane  Grus communis.
*The demoiselle crane  Anthropoides virgo.*
The grey lag goose  Anser cinereus.
*The White-fronted or laughing goose  Anser albifrons.*
#The ruddy-headed goose  Anser erythrophthalmus.
#The ruddy shelduck  Anser erythrophthalmus.
Brahminy duck  Casarca rutila.
The shoveller  Spatula clypeata.
The mallard  Anas boscas.
The gadwall  Mareca strepera.
The pintail  Dafila acuta.
The wigeon  Mareca penelope.
The common teal  .. Querquedula crecca.
The garganey  .. Anas querquedula.
The pochard or dun bird  .. Fuligula verrucosa.
*The red-crested pochard  .. Fuligula rufina.*
*The white-eyed pochard  .. Fuligula nyroca.*
*The tufted pochard  .. Fuligula cristata.*
#The common or fan-tail snipe  Gallinago coelestis.
The jack snipe  Gallinago gallinula.
The painted snipe  Rhynchae.

*Birds in red – Not seen any more; #Birds in green – Very rare occurrences as on today.*

PRESENT STATUS OF HABITAT

The wetland area once spread to many thousand acres have shrunk to its present size, credits to the drains created by drainage department of the government for draining and converting them into productive agriculture and fish farms in the past. It is highly fragmented, on verge of extinction and highly threatened ecosystem now. The wetland waterfowl habitat is interspersed with fertile agricultural lands with crops of rice, sugarcane and wheat on rotation and under intensive and permanent cultivation. The wetlands also support cash crops like Lotus and Water Chestnut (Singhara), both are commercially harvested for their rhizomes and tubers. Few hundred acres of wetland in all the villages were given on long term lease (10 years) for fisheries and agriculture and has since been converted. There has been public apathy about the wetland combined with negative attitude as being unproductive and conceived as disease carriers.

These wetlands are abode for about 40000 migratory birds that flock the area during winter migratory season from October till March every year. Abundant feed is available in these wetlands naturally and fishponds present in the area also cater birds. The officials along with the scientists from Bombay Natural History Society conducted a rapid bird census as per Asian Waterfowl census form in January 2007 revealed more than 45 species of important migratory waterfowl and innumerable resident birds (Sharma, 2007). These wetlands are neither Ramsar sites nor in the National Wetland Map in India. The dynamic ecosystem plays various ecological, environmental, educational, ecotourism and developmental roles viz. resident and migratory birds habitat, biodiversity corridors facilitating movement of migratory birds. It also plays Socio-Economic functions as being major source of fisheries in the area and has huge potential for scientific research and ecotourism and ecodevelopment.

FLORA AND FAUNA STATUS WITH SPECIAL EMPHASIS ON WATERFOWL DIVERISTY

The important migratory birds wintering include Gadwall, Pintail, Common teal, Wigeon, Mallard, Shoveler, Black headed gull, Brown headed gull, Booted Eagle, Marsh Harrier, Grey lag Goose, Ruff and Reeve, Garganey teal, Ruddy Shelduck, Spotted sandpiper, Green sandpiper, Spotted Red shank, Common Red shank, Little stint, Little ringed plover, Himalayan Pied Kingfisher, European lapwing, Red Rumped swallow, Bar Headed Geese, White Eyed
Buzzard, Black winged kite, Common crane, Imperial eagle, Booted eagle, Hen Harrier, Starling, Yellow headed gray wagtail, White wagtail, White necked stork, Marsh Harrier, Black Stork, Steppe eagle and Greater spotted eagle (Plates 1-3).

Plate 1. Black winged stilt, Pintail, Gadwall, Wigeon, Mallard in Keshopur CR

Plate 2. Ruff and Reeves, Gray lag Geese have a gathering in Keshopur CR

Plate 3. Sandpipers and Bar Headed Geese on Look out for feed in Keshopur CR
Few important resident birds of the reserve area are Sarus crane, Indian Moorhen, Little and Great cormorant, Common pochard, Little, Median and Large Egret, White breasted and Common kingfisher, Grey and Purple Heron, Darter, Dabchick, Coot, River tern, Red wattled lapwing, Wire tailed swallow, House swift, Indian and Purple moorhen, Pariah kite, Pied myna, Painted stork, Common Snipe etc. The terrestrial birds present are Indian Grey Hornbill, Hoopoe, Parakeets, Owl, Wagtail, Indian Robin, Woodpecker, Black kite, Spotted dove, Pigeon, Shikra, Drango, Egyptian Vulture and White Rumped Vulture (Plate 4-6). A detailed checklist of birds is prepared for the management plan revealed 434 species of birds (as referred from Richard et al., 2000).

Plate 4. Endangered Sarus are resident and breeding in the last year

Plate 5. Indigenous Common cranes enjoying the ecosystem

Plate 6. White Rumped Vultures are the Flagship species around the Wetland

The flora and fauna studied by the Punjab State Council for Science and Technology found 12 Taxa of Algae mainly Anabaena, Cylindrospermum, Merismopedia, Navicula, Oscillatoria and Spirulina, Pteridophytes viz. Marsilea & Pteris spp and a Gymnosperm viz. Fissidens spp. The other important flora and fauna are listed below (Laddar and Brraich, 2006).

**Trees (40 Taxa):** Mainly Acacia catechu, Albizia lebbeck, Bombax ceiba, Cassia fistula, Dalbergia sissoo, Ficus bengalensis, Mangifera indica, Melia azedarach, Morus alba, Murraya koenigii and Zizyphus jujuba.

**Herbs (32 Taxa):** Ageratum conyzoides, Achyranthes aspera, Adhatoda vasica, Asphodelus tenuifolius, Boerhavia diffusa, Cassia occidentalis, Chenopodium alba, Eclipta alba, Erigeron bonariensis, Euphorbia hirta, Verbascum thapsus, Salvia plebeia, Solanum nigrum, Sonchus asper and Woodfordia floribunda.

**Shrubs (6 Taxa):** Calotropis procera, Dodonea viscosa, Ipomoea carnea, Ipomoea nil, Lantana camera, Nyctanthes arboristis and Sida cordifolia.

**Aquatic (7 Taxa):** Ceratophyllum, Eichhornia crassipes, Hydrilla spp., Jussiaea suffruticosa, Lemna
major, *Lemna minor*, *Nelumbium speciosum* and *Potamogeton spp.* (Plate 7-8)

Plate 7. General Outlook of Habitat - Water Hyacinth is a major threat of the ecosystem

Grasses and Sedges (11 Taxa): *Andropogon contortus*, *Arundo donax*, *Chrysopogon fulvus*, *Cynodon dactylon*, *Cyperus rotundus*, *Saccharum munja* and *Typha elephantina*.


Reptiles (8 Taxa): *Calotes*, *Varanus*, *Hemidactylus*, *Typhlops*, *Xenochropis*, *Ptyas*, *Naja* and *Bangarus*.

Fishes (17 Taxa): *Heteropneustes fossilis*, *Aorichthys seenghala*, *Labeo calbasu*, *Labeo rohita*, *Clarias batracus*, *Puntius ticto*, *Cirrhinus mrigala*, *Catla catla*, *Cyprinus carpio*, *Hypophthalmichthys molitrix*, *Notopterus notopterus* and *Channa marulius*.

Mammals (7 Taxa): *Canis aureus*, *Macaca mulata*, *Lepus nigricolis*, *Felis chaus*, *Hypothestes auropunctatus* and *Funambulus pennanti*.

**PROCESS OF DECLARATION AND CONSERVATION EFFORTS**

The Forest Department in its earlier attempts tried to declare it as Wildlife Sanctuary since 1998 but could not materialise. Later few other conservationists approached the department in 2003 and later through Hon. Governor of Punjab in 2005 but again it was a failed attempt due to the problems in approach. It was only after the Wildlife Division was created in March 2006, this task was prioritised and conceived as a challenge to convince the ecosystem people to conserve the wetlands.

The “bottom up” participatory approach was followed this time by convening meetings in the villages (Plate 9). After a series of such village level meetings of the wetland villages and negotiations using the socio engineering skills, the people were convinced about the benefits of conserving the ecosystem. The major fear of losing ownership and income from fisheries and agriculture (means of livelihood for various people) from the panchayat community wetland were removed from their minds.

Plate 8. Lotus ponds add beauty and livelihood income in the wetland ecosystem

The provisions of 36 C of the amended Wildlife Protection Act, 2002 (2006) were explained in detail and consensus in the form of resolutions and clarifications were drawn for declaration of the wetland into a Community Reserve in February 2007. The proposal became a reality in June 2007 when the Government of Punjab declared the “Keshopur Chhamb Community Reserve” vide Notification No: 34 /13/ 2007 / Ft-V / 6133 Chandigarh, Dated the 25.6.2007. Historically, it has been accredited with the title of “India’s First Community Reserve”. Presently ecosystem people are taking keen participation in meetings, awareness programmes and are keen on developing the area into a ecotourism area as partners in development. The management plan has been prepared through active participatory process.

MANAGEMENT OBJECTIVES

The objectives of management were set to conserve and improve the fragile and highly threatened wetland ecosystem of the community reserve for its role as biodiversity and migratory corridor for endangered birds and other waterfowl species; to maintain the integrity of the ecosystem and arrest further degradation of the wetland ecosystem by providing adequate protection, strengthening existing infrastructure; to attain a minimum viable population of atleast 500 Sarus cranes and 100 White rumped Vultures as flagship species within the plan period and maintain their population trends in future; to create ecofriendly environment in and around the wetlands by various other alternate livelihood options and ecodevelopment through active participation of people and stakeholder engagement to make them partners in development; to promote the ecotourism and create conservation awareness in and around the community reserve area and to facilitate the Research, training and capacity building of communities and staff and strengthening social engineering skills (Rajasekar,2007).

HABITAT CONSERVATION MEASURES

In the management plan, the prescriptions were made for Habitat restoration and Wildlife protection, Habitat improvement such as de siltation of community reserve area of wetland, installation of barrages for maintaining water level, water hyacinth weed control & removal, bank stabilization measures, plantation of indigenous species, management of reeds, introduction of native aquatic plant species, Infrastructure development such as construction of nature interpretation centre, construction of guard huts, establishing anti poaching camps, construction of watchtowers, bird watching hideouts, checkposts, improving communication & transportation are proposed to be undertaken in the next five years. Waterfowl census, research and training (capacity building), development of a GIS based resource survey, present land use, pollution monitoring and maps, research on inventorying and assessment of habitats and species richness monitoring and assessment of population trends of migratory birds are also proposed to be undertaken. Ecodevelopment activities are key for winning confidence and community participation and it is proposed to identify villages’ problems through Participatory Rural Appraisal, Rapid Rural Appraisal and detailed survey, form Ecodevelopment committees, entry point activities, preparation of micro plans and promotion of Income Generating Activities. Legislative and Administrative measures include constitution of Keshopur Chhamb Community Reserve Management Committee, Interdepartmental District Coordination Committee are underway with the state government.

The legislative provisions for protection under Wildlife Protection Act, 1972 (Amnded 2002) section 36 D for constituting the Community Reserve management committee, which shall be the authority responsible for conserving, maintaining and managing the community reserve are effectively followed. As the Keshopur Chhamb Community Reserve falls in five villages’ Panchayat lands, all the villages were represented with one nominee (Range officer) from Department as Member Secretary.

After the issue of notification under sub-section (1) of Section 36 C, no change in the land use pattern shall be made within the community reserve except in accordance with a resolution passed by the management committee and approval of the same by the State Government are explained.

The sections such as sub-section (2) of section 18, sub-sections (2), (3) and (4) of section 27, sections 30, 32 and clauses (b) and (c) of section 33 shall, as far as may be, apply in relation to a community reserve as they apply in relation to a sanctuary are applicable in the community reserve.

CONSTRAINTS IN MANAGEMENT AND THREATS

The division presently lacks adequate staff and funds for the effective implementation of schemes being at the initial stages of establishment. Inadequate infrastructure, vehicles, communication facilities and inadequate funds are few of the impediments. Also the process of maintaining the integrity of the ecosystem and keeping confidence in the community require constant participatory skills. The threat to the ecosystem from already converted fish farms and agricultural fields are also a constant worry from the point of pollution and encroachment. Adequately
compensating the Village panchayats through gainful employment to the local youth and employment generation is immensely required.

CONCLUSION

Creating awareness among the stakeholders about the waterfowl habitat is a continuous process requiring constant attention (Plate 10), providing adequate employment, augmenting livelihood sources and income and promoting income generating activities would alone help conserve this important waterfowl community reserve. Most importantly, environmental education, exposure visits and outreach programmes targeting the village communities and other stakeholders of the ecosystem are rather an imperative than an option. Plan should transform into programmes and schemes through timely implementation with assured fund flow mechanism will transform this novel initiative into a model case inwildlife conservation.

REFERENCES


Plate 10. Environmental education among Young Minds – Creating awareness about the wetland birds in Keshopur Community Reserve Village Schools

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