

ORIGINAL ARTICLE

**Bethudahari Wildlife Sanctuary  
(An account of *ex-situ* Biodiversity resources of the Lower  
Gangetic Plain)**

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**ABSTRACT**

The Bethudahari Wildlife sanctuary is a notified area in the district of Nadia, West Bengal. It is presently under the Directorate of Forests, Government of West Bengal & day to day look after by the Divisional Forest Officer, Nadia-Murshidabad Division who is also the manager of the said Protected Area (PA). The area is full of wild fauna and flora as a result of conservation effort which indirectly promote the local livelihood.

**Key Word:** Sanctuary, Wildlife, Wildlife Protection Act, 1972, Indian Forest Act, 1927, Deer, Ration Champion & Seths classification of Forest

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**INTRODUCTION**

Nestled among the verdant farmlands and growing hamlets nearby. It is situated at Nakashipara Block under Police Station Nakashiapara in the District of Nadia. Its came into existence once the afforestation activity was taken up on the degraded land which was a private property. It was handed over to the Forest Department, government of West Bengal during early 50's. The area was declared as a Sanctuary vide Government order number 4825-For/11B-102/76 dated 29-10-80 with comprising of only 66 ha of Forest land under the sub section (1) of section 18 of Wild life Protection Act, 1972. The sanctuary, the only of its kind in the lower Gangetic plain of West Bengal in the district of Nadia, corresponding to the Bio-geographic zone:7B where a few "protected areas" exists, N 23°35'18.88" E 88°23'48.55", The Bethudahari Wildlife Sanctuary is very close to Bethudahari market and encircled by human settlement and arable land from all sides. The entire boundary of the sanctuary has been fenced up by masonry wall and wire mesh primarily for contain Chital population within limits of boundary and secondarily to restrict the intervention of extraneous biotic factors.

It is easily accessible spot both by the road as well as railway concern. The sanctuary is located on the N.H. 34 which goes from Kolkata to Siliguri, in West Bengal.

**MATERIALS AND METHOD (BIO-DIVERSITY RESOURCES)**

The identification of flora, fauna, avifauna etc are mainly done by transect walk, personal observation, various records like plantation records etc.

The wild resources which are commonly found in the sanctuary are as follows:

**a) Forest flora:**

This is primarily a vested forest (erstwhile Zamindari Forest) and entire stands are of plantation origin. But now most of them are naturalized here. As per the Champions & Seths classification the forest of the area belongs to "Tropical Moist Deciduous Forest".

(A) TREES & SHRUBS			
1	<i>Acacia nilotica</i> (Babla)	27	<i>Gmelina arborea</i> (Gamar)
2	<i>Aegle marmelos</i> (Bael)	28	<i>Holarrhena antidysentrica</i> (Kurchi)
3	<i>Albizia lebbek</i> (Kala Siris)	29	<i>Holoptelia integrifolia</i> (Charla)
4	<i>Albizia procera</i> (Sada Siris)	30	<i>Inca dulce</i> (Jelapi)
5	<i>Amoora wallichii</i> (Lali)	31	<i>Lagerstroemia hypoleuca</i> (Benteak)
6	<i>Anona reticulate</i> (Atha)	32	<i>Lagerstroemia speciosa</i> (Jarul)

7	<i>Artocarpus integrifolia</i> (Kathal)	33	<i>Lannea indica</i> (Jeol)
8	<i>Azadirachta indica</i> (Neem)	34	<i>Leucaena leucocephala</i> (Subabul)
9	<i>Bambusa. Sp.</i> (Bans)	35	<i>Litsaea sp.</i>
10	<i>Barringtonia acutangula</i> (Hij ul)	36	<i>Mangifera indica</i> (Am)
11	<i>Bauhinia purpurea</i> (Kanj an)	37	<i>Mitragyna parviflora</i> (Telekadam)
12	<i>Bombax ceiba</i> (Siniul)	38	<i>Moringa oleifera</i> (Sajne)
13	<i>Borassus flabellifer</i> (Palm)	39	<i>Oroxylum indicum</i> (Totola)
14	<i>Cassia fistula</i> (Amalthas)	40	<i>Phoenix sylvestris</i> (Khajur)
15	<i>Cassia siamea</i> (Minjiri)	41	<i>Polyalthea longifolia</i> (Ashok)
16	<i>Cedrella toona</i> (Toon)	42	<i>Polyalthea suberosa</i> (Hamjam)
17	<i>Coccos nucifera</i> (Narkel)	43	<i>Samanea saman</i> (Rain tree)
18	<i>Cordia myxa</i>	44	<i>Shorea robusta</i> (Sal)
19	<i>Dalbergia sisoo</i> (Sissoo)	45	<i>Spondias pinnato</i> (Amra)
20	<i>Dillenia indica</i> (Chalta)	46	<i>Streblus asper</i> (Sheora)
21	<i>Emblica officinalis</i> (Amloki)	47	<i>Syzygium cumlmi</i> (Jamun)
22	<i>Feronia elephantum</i> (Kathbael)	48	<i>Tectona grandis</i> (Segun)
23	<i>Ficus hengalensis</i> (Bodh)	49	<i>Terminalia arjun</i> (Arjun)
24	<i>Ficus glomerata</i>	50	<i>Trema orientalis</i> (Charcoal tree)
25	<i>Ficus recemosa</i>	51	<i>Trewia nudiflora</i> (Pitali)
26	<i>Ficus religosa</i> (Pipul)	52	<i>Ziziphus spp.</i> (Kul)

	(B) CLIMBERS & SCRABLERS		(C) GROUND VEGETATION		(D) GRASSES
1.	<i>Abrus precatorius</i>	1.	<i>Ageratum conezoides</i>	1.	<i>Brachiaria Sp.</i>
2.	<i>Accacia concinna</i>	2.	<i>Amorphophalus sp</i>	2.	<i>Eleusine Sp.</i>
3.	<i>Anamirta paniculata</i>	3.	<i>Calotropis glgantea (Nishind)</i>	3.	<i>Cynadon dactylon (doob)</i>
4.	<i>Capparis horrid</i>	4.	<i>Cassia tora</i>	4.	<i>Chrysopogan Sp.</i>
5.	<i>Cryptolepis sp.</i>	5.	<i>Clearodendron spp. (Vats)</i>	5.	<i>Imperata Sp (Ullu ghas)</i>
6.	<i>Mikanea sp.</i>	6.	<i>Colocasia Spp. (Kochu)</i>	6.	<i>Panicum Sp.</i>
7.	<i>Smilax sp.</i>	7.	<i>Croton sparciflorus</i>	7.	<i>Paspalum Sp.</i>
8.	<i>Vitis sp.</i>	8.	<i>Curcuma longa (Haldi)</i>	8.	<i>Pennisetum Spp.</i>

**b) Avifauna:**

Avifauna are identified as per visitors observation and census:

Avi-fauna			
1	Barbet, Blue throated	28	Kingfisher, White - breast
2	Barbet (Coppersmith)	29	Kite, Black-winged
3	Barbet, Green	30	Lapwing, Red wattled
4	Babbler, Jungle	31	Magpie Robin
5	Babbler, Common,	32	Minivet, Small
6	Bulbul, Red vented	33	Myna, Common
7	Bulbul, Red whiskered	34	Myna, Grey-headed
8	Chloropsis, Gold fronted	35	Myna, Jungle
9	Cormorant, Little	36	Myna, Pied
10	Crow pheasant	37	Nightjar, Long-tailed
11	Cuckoo, Indian	38	Oriole, Black-headed
12	Dove, Emerald	39	Oriole, Golden
13	Dove, Ringed	40	Owlet, Spotted
14	Dove, Spotted	41	Parakeet, Red-breasted
15	Drongo, Bronze	42	Parakeet, Rose-ringed
16	Drongo, Black	43	Pigeon, Green
17	Egret, Large	44	Roller, Indian
18	Egret, Small	45	Serpent-eagle, Crested
19	Fantail, White browed	46	Sunbird, Purple
20	Flycatcher, Paradise	47	Sunbird, Purple rumped
21	Ground Thrush, Orange headed	48	Tailor Bird
22	Grebe, little (Dabchick)	49	Tit, Grey
23	Hawk Cuckoo	50	Tree-pie
24	Heron, Pond	51	Vulture, White-backed
25	Iora, Common	52	Witter hen, White-breasted
26	Kingfisher, Br.headed, stork billed	53	Woodpecker, Pied, Fulvous breasted,
27	Kingfisher, Pied.	54	Wood pecker, Lesser, golden backed

**C: Wild fauna:**

Mammals	(a)	Chital ( <i>Axis axis</i> )- flagship species here.
	(b)	Black napped hare ( <i>Lepus nigricolis</i> )
	(c)	Porcupine ( <i>Hystrix indica</i> )
	(d)	Jackel ( <i>Canis aureus</i> )
	(e)	Common mongoose ( <i>Herprestris edwardsi</i> )
	(f)	Palm civet ( <i>Paradoxorus hermaphrodites</i> )
	(g)	Jungle cat ( <i>Felis chaus</i> )
Arboreal mammals	(h)	Common langur ( <i>Presbytes entellus</i> )
Reptiles	(i)	Monitor lizard ( <i>Varanus bengalensis</i> )
	(j)	Python ( <i>Python molurus</i> ),
	(k)	Krait ( <i>Bangarus caeruleus</i> ),
	(l)	Cobra ( <i>Naja naja</i> )
	(m)	Species of amphibians like Frogs, soft shell turtle.
	(n)	Gharial ( <i>Gavialis gangeticus</i> )

**RESULTS AND DISCUSSION****a) Ex-situ conservation of wildlife:**

In the year 1969, a pair of Chital (one male and one female) and a fawn were introduced from the Alipore Zoological Garden and thereafter Barking deer, four Sambar deer and thirteen Chital were introduced on 27-03-1970 from the Nandan Kanan Zoological Park, Orissa. The Sambar and the Barking deer could not establish, perhaps due to their exacting habitat requirements and low breeding stock and the last one died in 1992. But Chital naturalized well and adapted to the external food supplements and proliferated. The current population stands around 200. The hamjam shrubs (*Polyalthia suberosa*) an exotic plants come with the chital during translocation from Nandankanon zoo, Orissa which now became 80% of the ground vegetation.

**b) Fodder Production:**

This has to done within a permanent enclosure. Total area under the enclosure is 2.3Ha.(5.67 acres).The fodder cultivated in these area has to be periodically cut and chopped to feed deer. Major portion of the roughage is obtained from these plots only. Intensive cultivation is to be taken up in this area to produce maximum green fodder. Following is the cropping schedule:

Summer	:	Maize, Fodder Sorghum (gama variety), Kalai.
Autumn	:	Kalai, Radish, Cauliflower.
Winter	:	Oats, Cauliflower, Cabbage, Mustard etc.

In addition to that, grasses such as Napier, Para Grass, Sehima, Dinanath grass etc. are to be grown on permanent plots. Also, preferred tree species like Amloki etc. are planted such that it can be lopped often.

**c) Supplementary Feeding to the Deer :**

Main thrust is to gradually reduce the external supply of concentrates. This can be achieved by increasing the quantity of green fodder, supplied both from the rotational grazing plot as well as from the permanent plots. The supplementary feeding are provided once daily at around 07:00 hrs in the morning

Wheat bran	:	200gm /day/deer
	:	156gm/day/fawn
Mustard oil-cake	:	48 gm/ day/deer
	:	26 gm/day/fawn
Gram	:	60 gm/ day/deer
	:	31gm/day/fawn
Cane Molasses	:	48 gm/ day/deer
	:	26gm/day/fawn
Rock salt	:	7 gm/ day/deer
	:	2gm/day/fawn

**d) Animal Health Cover:**

The following schedule is practiced, A tentative schedule is given. This activity will be carried out by the Veterinary Surgeon and his supervision.

Sl	Vaccine	Animal	Schedule of time	Remarks
1	FMD	Domesticated Cattle of periphery of sanctuary	4 months of age	1 <sup>st</sup> dose
			2-4 wks after	2 <sup>nd</sup> dose
			Twice in a year	Booster
2	De-worming	Deer	Through diet as directed by Veterinary Surgeon	Mebendazole, Flubendazole and Fenbendazole
		Bird		
3	Ranikhet Disease	Fowl and bird	At the age of 5-7 days,	F1 strain
			At the age 5-8wks and 16-20wks	RB strain
4	Psittacosis	Parrot & etc	Antibiotic in drinking water	Doxycycline, Tetracycline

#### e)Wetland development:

As the sanctuary is devoid of any perinneeal source of river, so for the supply of drinking water 4nos of pond has been excavated for the purpose.

#### f)Translocation:

It has enough population to supply deer to other sanctuary or deer parks. The translocation has been done successfully in this sanctuary on several occasions and is enlisted below:

Sl no	year	Nos	Place where the deer were sent
1	1992	18	Released to Buxa Tiger Reserve, Rajabhatkhwa, Jalpaiguri
2	1995	9	Released to Buxa Tiger Reserve, Rajabhatkhwa, Jalpaiguri
3	1996	16	Joypur and Ranibandh, Bankura
4	1998	26	Released to Gorumara NP, Jalpaiguri
5	Jan/2012	23	Released to Buxa Tiger Reserve, Jalpaiguri
6	Jan/2012	23	Released to Buxa Tiger Reserve, Jalpaiguri

#### g)Wild life Rescue Centre or rehabilitation center:

Here wild animals brought from outside (mainly by seizure) were kept and treated for a reasonable period and released back to the wild or transferred to other sanctuaries or deer parks. It has aviaries of circular type has a larger space where birds can move freely and a small shed for small mammals. The Turtle pond is also a part of the Rescue Centre, meant for turtles.

Sl no.	Species	Numbers
1.	Peafowl	14 ( 10male + 4female)
2.	Gharial	08
3.	Pheasant	02 =silver pheasant 08=golden pheasant
4.	Painted stork	01
5.	Parakeet	24
6.	Blue bull	01

#### h)Eco-tourism facilities:

- There are two nature trails namely Brandis trail and Salim Ali trails throughout the sanctuary where visitors can go for walk.
- Tourist can stroll around during day time amidst the chirping and cooing of birds and grazing chital.
- A Nature Interpretative Centre (Shri Dijendralal Roy Nature Interpretation Centre) orients and sensitizes towards forest & wildlife to the tourists before setting off for a walk around sanctuary.
- The sanctuary is attractive to the tourists as they get a feel of the forest without the innate fear of danger from major carnivores which is attached to other forests.
- Proper signages are fixed throughout the visitors path for their guidance.
- The sanctuary has boating facilities also for visitors.
- Moreover, places of religious interest like Nabadwip, Mayapur (ISKCON), Santipur etc are closely. Historic places like battlefield of Plassey is only 25Kms, and Murshidabad palace is only 40Km from here.
- For staying in the sanctuary for couple of days visitors can avail Bethuadahari cottage and Beduinn Yatri Niwas. Both of them having two double bedded room facilities. The rate of the room is Rs. 1000.00/room/day at Beduinn Yatri Niwas and Rs. 500.00/room/day at Cottage. The necessary booking is done from the office of the Divisional Forest Officer, Nadia-Murshidabad Division first come first serve basis. Only Bedu-inn Yatri Niwas has catering facilities.

#### i)Eco-development committee:

The sanctuary has one EDC for participatory management of sanctuary. Most of the laborers and casual day workers for any development activities come from this village only. The villagers are engaged as local guide for the visitors, which also reduce the dependency on forest produces for the local villagers.

**j) Tourism pressure:**

Due to easy accessible location many tourist or day visitors including students visit the sanctuary regularly. The following data are meant for tourist visit:

Sl no	Financial year	Nos of Visitors	Revenue generated (Rs.)
01	2015-16	63,305	6,33,050.00
02	2014-15	69,340	6,93,436.00
03	2013-14	69,322	7,14,018.00
04	2012-13	67,176	5,61,664.00

**k) Day to day management of sanctuary:**

The following activities may be taken to improve the wildlife habitat and decrease the dependency of the local people upon forest in the eco sensitive area.

1. Awareness generation among the people on conservation issues through EDC.
2. Sanitation & hygiene of the fringe people for lessening pollution.
3. Alternate livelihood programme in the fringe area like eco-tourism activities, employment of local people on daily wages basis.
4. Prohibition on use of horn or any kind of sound box inside the sanctuary.
5. Socio economic development for lessen the biotic pressure on the sanctuary.
6. Tourist are advised not to litter the sanctuary. Tape recorder and radio are not allowed inside.
7. There is a proposal for declaring an eco sensitive zone around the sanctuary.
8. If any violence of par rules as well as illegal activities occurred, strict action has been taken as per the Indian Forest Act,1927 & the Wild life Protection Act,1972 against the violators.

**l) Significances of the sanctuary:**

- a. This sanctuary represents the lower Gangetic plains of West Bengal comprising of Murshidabad Nadia , Hooghly and parts of 24 –Parganas (N) and Burdwan corresponding to the Bio geographical zone :7B (cf: WII, Dehradun) where a few protected areas exists.
- b. Its rescue centre acts as a rehabilitation area for the wild animals and birds seized from illicit traders before releasing it to the wild .It is the only sanctuary available in the districts of Nadia and Murshidabad that covers an area of about 10,000 sq km.
- c. The excess Chital population helps in re-stocking of the prey base in the wild life areas.
- d. It is one of the most accessible and nearest educative & awareness centre, catering to the educative and conservative need of wildlife, environment & forest to the Nadia and Murshidabad District.
- e. Tourist can stroll around during day time amidst the chirping and cooing of birds and grazing chital.
- f. A picnic spot outside the sanctuary where tourist are allowed to cook their meal.
- g. The sanctuary is attractive to the tourists as they get a feel of the forest without the innate fear of danger from major carnivores which is attached to all forests.
- h. It is easily accessible, connected by road and rail both with Kolkata.
- i. A popular spot for day out for the urban citizens.



Fig1: Bethuadahari wild life sanctuary

## CONCLUSION

- a. This will cater eco-tourism aspects of the area.
- b. It will create huge job opportunity for the local EDC youth members.
- c. It will help in generation of income among locals.
- d. It will earn handsome amount for as revenue.
- e. Visitors will be able to understand the local tradition by staying in the ethnic cottage.
- f. It will encourage the local artisans.
- g. It will create market potentiality of local arts & crafts.

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