Letter No: 344 / 4-11(28)

Date: 14-10-2015

Important Circular

U.P. State Biodiversity Board under Section 37 (Biological Diversity Act, 2002) intends to declare Gharial Rehabilitation Centre (GRC) Kukaril, Lucknow as Biodiversity Heritage Sites (BHS) Kukrail, Lucknow.

The summary of the proposal for declaration of GRC, Kukrail to be declared as Biodiversity Heritage Sites (BHS), Kukrail, Lucknow is mentioned below:

1. <u>BACKGROUND</u>:- Visit to the well-known Kukrail Picnic Spot developed in Kukrail Forest, Lucknow is incomplete without learning about gharials, crocodiles and turtles at Gharial Rehabilitation Centre, Kukrail. This centre was established in 1975 with the main objective of *ex situ* conservation of gharial (*Gavialis gangeticus*) the sole surviving member of the *Gavialldae*. It is believed that the gharials appeared on this planet about 95 billion years ago and alongwith 21 species of crocodile, are descendents of Dinosaurs which became extinct about 60 billion years back after their domination for around 120 billion years.

When this Centre was established, the population of gharials was estimated to be not more than 300 in nature. This much important species of our aquatic eco-system had become victim of the lust of humans for more and more earnings with



trade of skins of this beautiful animal of our rivers. Now it can be said that this species has reached a level which is safe for its survival. Contribution of Gharial Rehabilitation Centre, Kukrail shall always be remembered by the future generation in this context. The efforts of *ex situ* conservation of gharial at this Centre shall remain in form of legends for the centuries to come. This Centre, has also undertaken activities for conserving number of species of turtles. With total protection provided to the entire 10 hectare area of the Centre, conservation of native flora and fauna was automatically ensured.

- 2. <u>LOCATION</u>:- Gharial Rehabilitation Centre, Kukrail, Lucknow is located in the East Block of Kukrail Reserved Forest adjoining the Kukrail Picnic Spot. With increasing colonization, now it is very much near to Indira Nagar.
- **3.** <u>AREA</u>:- The area proposed for BHS is 10 hectare (the entire area of Gharial Rehabilitation Centre, Kukrail)
- 4. <u>APPROACH AND ACCESS</u>:- Lucknow is well connected with all major cities by air, rail and road. Gharial Rehabilitation Centre, Kukrail is about 28-30 km. from Amausi Airport. The city's main railway station, i.e., Charbagh is situated at a distance of around 12-15 km. from the Centre.
- 5. <u>CLIMATE</u>:- Climate of Lucknow is tropical. Winters are very cold and in summers, the situation is reverse. Temperature variation is from 2^o C to 48^o C. Dense fog, frost and cold winds



are the problems of winters whereas extreme hot winds, commonly known as *loo* blow during major part of the summers. During previous years lot of variation (from 410 mm to 1227 mm) has been observed in the mean annual rainfall. Humidity variations are also of extreme nature. During the last two decades, average temperature has increased and erratic distribution pattern of rains has been observed. Because of thick forest developed in and around Gharial Rehabilitation Centre, Kukrail, there is some local moderation in extremes of climatic factors.

6. <u>WATER</u>:- The terrain of the area is gently slopy towards Kukrail nala which is a tributary of Gomti river. Few decades back Kukrail nala was in form of a perennial rivulet fed with underground water coming out from natural springs and extra water released through escape canals of Irrigation Department. But now, it is a seasonal rivulet fed only with drained water during excessive rains. The course of this nala, lying onward to the Kukrail forest; flows filthy sewage. During excessive rains, there are cases of water-logging in breeding enclosure. All other enclosures and ponds are well connected with proper drainage system which leads to Kukrail nala. There are four tube-well borings with submersible pumps which are sufficient for the water requirements of the ponds, enclosures and human consumption.



7. <u>FLORA</u>:- The Centre is full of floral biodiversity in form of various types of trees, shrubs, herbs and grasses (including bamboos). The rich greenery gives respite to the tourists, particularly, in summers and drizzling on a rainy day. For the morning walkers and lovers of yoga, the site is most favourite.

The concise list of floral biodiversity present in the Gharial Rehabilitation Centre, Kukrail is annexed as <u>Annexure No.1.</u>

8. FAUNA:- The area has good biodiversity of fauna which include- Rhesus Monkey, Jackal, Fox, Common mongoose, Small Indian mongoose, Blue bull, Five striped squirrel, Common house rat, Indian mole rat, House mouse, Porcupine, Hare, Brown shrew, various snakes like- cobra, python, common Krait, Rat snake, Water Snake. Many species of fishes, *viz.*, Chilwa, Katla, Mirla, Mangur, Rohu & Girai are found in the nearby Kukrail nala.

The list of birds reported from Kukrail Centre is annexed as <u>Annexure No.2.</u>

Besides the natural fauna, the Gharial Rehabilitation Centre, Kukrail is now well-known for conserving (*Gavialis gangeticus*) the sole surviving member of the *Gavialldae*. This Centre has also contributed in conserving many species of turtle. The list of such species of turtle is annexed as <u>Annexure No.3</u>.



- 9. <u>SUITABILITY FOR SELECTION AS BIODIVERSITY</u> <u>HERITAGE SITE</u>:- Gharial Rehabilitation Centre, Kukrail is very much suitable for selection as Biodiversity Heritage Site as per the guidelines because of following peculiarities, amongst others:
 - (A) The Centre has contributed immensely for survival of gharial which was almost to extinct and thus will be known for this great achievement as a heritage site even after centuries to follow.
 - (B) This has also contributed in conservation of turtles.
 - (C) Creation of awareness for survival of gharials, turtles and other wildlife is a major achievement of this center which shall be remembered by posteriority.
 - (D) Providing total protection to the area has resulted in significant enrichment of native flora and fauna. As a consequence, the area has developed as a favourite habitat fot aquatic, terrestrial and seasonal migrant species. The resultant effect is that an ecosystem is visible in vicinity of developing jungle of concrete.
 - (E) The spot has become a great attraction for tourists and wildlife lovers.
 - (F) It has provided ecological security in a city with meteoric increase of colonization and expansion which has resulted in human welfare.
 - (G) The area represents a positive interface between nature, culture, society; and technologies.



- (H) The area is so close to urban habitation that it is always at risk, on the other hand it is also an asset in environmental terms and that is why it needs special attention.
- (I) The area does not suffer from any legal dispute.

10. <u>FULFILLMENT OF CRITERIA LAID DOWN FOR</u> <u>BHS</u>:-

Following are the criteria for proposing the area as Biodiversity Heritage Site-

- (A) It contains a mosaic of nature, semi-natural, and manmade habitats which together contain a significant diversity of life forms.
- (B) It is in form of a small urban green that offer refuge for threatened and endemic fauna and flora.
- (C) The area is fully under control of Government of U.P. through U.P. Forest Department.
- (D) The site is not covered under Protected Area network under the Wildlife Protection Act, 1972 (as amended).
- (E) It also provides habitat for seasonal migrant species of some birds.

From the above, it is clear that the area proposed fulfills at least five criteria among nine laid down for identification of BHS in the Guidelines. It is worth mentioning that as per the Guidelines, an area having any of the nine characteristics may qualify for inclusion as Biodiversity Heritage Site. **Uttar Pradesh State Biodiversity Board**



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- 11. <u>ADVANTAGES FORESEEN WITH NOTIFICATION</u> <u>AS BIODIVERSITY HERITAGE SITE</u>:-
 - (A) If the area is notified as a BHS, it will be a matter of pride for the urban population and rural folk as well of the capital of U.P. and lot of employment opportunities will generate for the locals.
 - (B) Scope of creation of awareness for protection and conservation of our floral and faunal biodiversity among the masses will increase beyond expatiations.
 - (C) The conservation measures to be adopted after notification as BHS will enhance the quality of life of the local communities.
 - (D)It will help in protecting the depleting environment of Lucknow

12. <u>PROPOSED MANAGEMENT OF BHS</u>:-

- (A) Since the area proposed is Government Forest area (Reserved Forest), the management structure and utilization of resources for BHS will be determined by the U.P. Forest Department.
- (B) The BHS will be managed by the Endangered Project, U.P., Lucknow.
- (C) A management plan shall be prepared after detailed studies with specific activities in given time frame, execution of such plan shall also be ensured.
- (D) Necessary guidance will always be sought from SVB, NBA and other biodiversity experts.

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<u>Annexure No.1</u> <u>List of Vegetation at the Proposed Site</u> (A) <u>Tree Species</u>

Sl. No.	Local/common Name	Botanical Name
110.	FRUIT BEARING TREES:-	
1	Bael	Aegle marmelos
2	Shahtoot (Mulbery)	Morus alba
3	Ber	Zizyphus mauritiana
4	Amrood (Guava)	Psidium guyaya
5	Aam (Mango)	Mangifera indica
6	Jamun	Syzygium cumini
7	Barhal	Artocarpus lakoocha
8	Papita (Papaya)	Carica papaya
9	Imli	Tamarindus indica
10	Amla	Emblica officinalis
	ORNAMENTAL TRE	<u>CES</u> :-
1	Kasod	Cassia siamia
2	Jacaranda	Jacaranda ovalifolia
3	Peltoforum	Peltoforum feruginium
4	Gul Mohar	Delonix regia
5	Amaltas	Cassia fistula
6	Jarul	Lagerstroemiaflos-reginae
7	Silver Oak	Grevillea robusta
8	Casuarina	Casuarina equisetifolia
9	Bottle Brush	Callistemon lanceolatus
10	Ashok	Polyalthia longifolia
11	Ashok Pendula	Polyalthia pendula
12	Akashmoni	Acacia auriculiformis

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13	Kachnar	Bauhinia variegata
14	Harshringar	Nyctanthes arbor-tristis
15	Indian Rubber Tree	Ficus elastica
	TIMBER/SHADE/MI	EDICINAL/FODDER
	TREES:-	
1	Pakar	Ficus infectoria
2	Banyan (Bargad)	Ficus bengalensis
3	Gular	Ficus glomerata
4	Pipal	Ficus religiosa
5	Phaldu	Mitragyna parvifolia
6	Neem (Margosa Tree)	Azadirachta indica
7	Eucalyptus	Eucalyptus hybrid
8	Shisham	Dalbergia sissoo
9	Kala Siris	Albizzia lebbek
10	Arjun	Terminalia arjuna
11	Kadamb	Anthocephalus cadamba
12	Kanji	Pongamia pinnata
13	Lasora	Cordia dichotoma
14	Bakain	Melia azedarach
15	Babool	Acacia nilotica
16	Kusum	Schleichera trijuga
17	Jangal jalebi	Pithecolobium dulce
18	Maulshri	Mimusops elengi
19	Vilayti Babool	Prosopis juliflora
20	Arru	Ailanthus excels
21	Balam Kheera	Kigelia pinnata

Shrubs and Herbs (B)

Sl.	Local/common	Botanical Name
No.	Name	
1	Asedh/Juhir	Solanum verbascifolium
2	Aak/Madar	Calotropis procera
3	Tarhar	Cajanus Cajanus
4	Arusa/Kansa	Adhatoda vasica
5	Inni	Clerodendron
		phlomoidis
6	Uat Katar/Gokharu	Echinops echinatus
7	Kataiya	Flacourtia indica
8	Karaunda	Carissa spinarum
9	Kairi	Dichrostachys cinerea
10	Kuri	Lantana camara
11	Kathmar	Ficus cunea
12	Kankohar/Manpal	Randia dumetorum
13	Kakad	Abutilon indicum
14	Kharbair/Kanta bair	Zizyphus nummularia
15	Khadiyar/Piluva	salvadora persica
16	Gandhela/Kathneem	Murraya hirsute
17	Gudhsakari	Grewia hirsute
18	Chakunda	Cassia occidentalis
19	Chakoda/Panwar	Cassia tora
20	Gurgava	Grewia flavescens
21	Jharberry	Zizyphus mauritiana
22	Dhauta/Dhavai	Woodfordia fruiticosa
23	Patera	Typha elephantina
24	Bhang	Cannabis sativa

25	Bhat	Clerodendron viscosum
26	Bhatakataichua	Solnum xanthocarpum
27	Rambans	Agave americana
28	Sarfounk	Tephrosia purpurea
29	Hingot	Balanites aegyptica
30	Heens	Capparis zeylanica

Climbers/Creepers (C)

SI.	Local/common Name	Botanical Name
No.		
1	Amar Bel	Cuscutta reflexa
2	Odi/Kakrora	Capparis sepiaria
3	Indrayan	Trichosanthes
		bracteata
4	Kali Vet	Combretum
		decandrum
5	Kyohi/Hariya/Vauri	Ventilago calyculata
6	Kuvi/Aila	Acacia pinnata
7	Kundru	Coccinea indica
8	Kounch	Mucuna prurita
9	Gauj	Milletia auriculata
10	Guruch	Trinospora malabarica
11	Charendi	Cocculus hirsutus
12	Darhari Bail/Tameran	Maerua arenaria
13	Duddhi/Dudhiya	Ichnocarpus frutescens
14	Duddhi	Cryptolepsis
		buchanani
15	Duddhi Bail	Vallaris solanacea
16	Pani Bail	Vitis repanda

17	Praval	Trichosanthes dioica
18	Puraina/Harjuri	Cissampelos pareira
19	Badhasin	Butea superb
20	Vanda	Dendrophthoe falcate
21	Maurarain	Bauhinia vahlii
22	Makoh	Zixyphus oenoplia
23	Klakangani	Celastrus panicolatus
24	Shramdatun	Smilax prolifera
25	Satawar	Asparagus racemosus

(D) Bamboos

Sl. No.	Local/common Name	Botanical Name
1	Bans	Dendrocalamus strictus
2	Kathbans	Bambusa arundinacea

(E) Grasses

Sl.	Local/common	Botanical Name
No.	Name	
1	Dasari	Sporobolus marginatus
2	Kans	Saccharum spontaneum
3	Kus	Chrysopogan contortus
4	Kala Lappa	Heteropogan contortus
5	Khas/Gadur	Vetivsria zizanioides
6	Gangeruva	Andropogon pumilus
7	Guner/Ganer	Themeda quadrivalvis
8	Chakwa/Guriya	Chrysopogon montanus

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9	Choti	Bothricoloa pertusa
	Jargi/Fuleriya	
10	Jarga/Jeneva	Dichanthium annulatum
11	Chhab	Desmostachya bipinnata
12	Doob	Cynodon dactylon
13	Naldura/Narsal	Arundo donax
14	Bhanjuri/Fuleca	Apluda mutica
15	Моој	Saccharum munja
16	Murjhaina	Eremopogan fovilatus
17	Musail	Iseilema laxum
18	Saider	Cymbopogan martini
19	Safed Lappa	Aristida cylindrical
20	Siru	Imperata cylindrical

Annexure No.2

List of Birds Reported from the Proposed Site

Sl.No.	Name	Scientific Name
Fami	ly ARDEIDAE	
1	GREY HERON (सिलेटी अंजन)	Ardea cinerea
2	INDIAN POND HERON	Ardeola grayii
	(चामा अंजन)	
3	CATTLE EGRET (बादामी बगुला)	Bubulcus ibis
4	LITTLE EGRET (छोटा बगुला)	Egretta garzetta
5	BLACK-CROWNED	Nycticorax nycticorax
	SPARROW HAWK (रात्रि अंजन)	
Fami	ly ACCIPITRIDAE	
6	SHIKRA (शिकरा)	Accipiter triviragatus
7	NORTHERN SPARROW	Accipiter nisus
	HAWK (बाशा)	



Family PHASIANIDAE			
8	INDIAN PEAFOWL (मोर)	Pavo cristatus	
9	WHITE-BREASTED	Amaurornis	
	WATERHEN (दौक)	phoenicurus	
Fami	ly CHARADRIIDAE	1	
10	RED-WATTLED LAPWING	Canellus indicus	
	(टिटहरी)		
Fami	ly COLUBIDAE		
11	YELLOW-FOOTED GREEN	Treron phoenicoptera	
	PIGEON (हरियल)		
12	ROCK PIGEON (नीला कबूतर)	Columba livia	
13	INDIAN RING DOVE (ढोर	Streptopelia decaocto	
	फाख्ता)		
14	SPOTTED DOVE (चित्तीदार	Streptopelia chinensis	
	फाख्ता)		
Fami	ly PSITTACIDAE		
15	ALEXANDRINE	Psittacula eupatria	
	PARAKEET (हीरामन तोता)		
Fami	ly CUCULIDAE		
16	PIED CUCKOO (कुहुक)	Clamator jacobinus	
17	ASIAN KOEL (कोयल)	Eudynamys scolopacea	
18	GREATER COUCAL	Centropus sinensis	
	(बड़ा महोक)		
Fami	ly STRIGIDAE		
19	JUNGLE OWLET (जंगली चोगद)	Glaucidium radiatum	
20	SPOTTED OWLET	Alhene brama	
	(धब्बेदार चोगद)		
Fami	ly APODIATE		
21	HOUSE SWIFT (टवाबील)	Apus affinis	

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Fam	ily ALCEDINIDAE	
22	WHITE-THROATED	Halcyon smyrnensis
	KINGFISHER	
	(सफेद गर्दन किलकिला)	
Fam	ily MEROPIDAE	
23	GREEN BEE-EATER	Merops orientalis
	(हरा पतरिंगा)	•
Fam	ily CORACIIDAE	
24	INDIAN ROLLER (Blue Jay)	Coracias benghalensis
	(नीलकंठ)	
Fam	ily UPUPIDAE	
25	COMMON HOPPOE (हुदहुद)	Upupa epops
Fam	ily BUCEROTIDAE	
26	INDIAN GREY HORNBILL	Tockus birostris
	(सिलेटी धनेश)	
Fam	ily CAPITONIDAE	
27	BROWN HEADED BARBET	Mogalaima zovlanica

BROWN-HEADED BARBET | Megalaima zeylanica 27 (भूरेसिर का खोटुर)

Family ORIOLIDAE			
28	INDIAN ORIOLE (सुनहरा पीलक)	Oriolus oriolus	
Family DICRURIDAE			
29	BLACK DRONGO (काला भुजंगा)	Dicrurus adsimilis	
Family STURNIDAE			
30	CHESTNUT-TAILED	Sturnus malabaricus	
	STARLING (भूरीपूंछ स्टारलिंग)		
31	INDIAN MYNA (देसी मैना)	Acridotheres tristis	
32	BANK MYNA (बैंक मैना)	Acridotheres	
		ginginianus	
33	JUNGLE MYNA (जंगली मैना)	Acridotheres fuscus	

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Family CORVADAE				
34	· · · · · · · · · · · · · · · · · · ·	Dendrocitta vagabunda		
	कोकीया)	8		
35	HOUSE CROW (देसी कौवा)	Corvus splendens		
36	LARGE-BILLED CROW (जंगली	Corvus macrorhynchos		
	कौवा)			
Family PYCNONOTIDAE				
37	RED-EHISKERED BULBUL	Pycnonotus jocosus		
	(लालगाल बुलबुल)			
38	RED-VENTED BULBUL (लाल	Pycnonotus cafer		
	पूंछ बुलबुल)			
Fa	mily MUSCICAPIDAE, Sub fami	ily TIMALINAE		
39	COMMON BABBLER (सामान्य	Turdoides caudatus		
	पनदोआ)			
Sub family TURDINAE				
40	INDIAN ROBBIN (कलचुरी)	Saxicoloides fulicata		
Family MOTACILLIDAE				
41	WHITE WAGTALL (सफेद धोबन)	Motacilla alba		
42	YELLOW WAGTALL (सफेद भौं	Motacilla		
	धोबन)	maderaspatensis		
Family NECTARINIIDAE				
43	PURPLE SUNBIRD (काला	Nectarinia asiatica		
	भाकरखोरा)			
Family ZOSTEROPIDAE				
44	ORIENTAL WHITE-EYE (बबूना)	Zosterops palpebrosa		
Family PLOCEIDAE, Sub family PASSERINAE				
45	HOUSE SPARROW (गौरेया)	Passer domesticus		
Sub family ESTRILDINAE				
46	RED AVADAVAT (लाल मुनिया)	Amandava amandava		

Annexure No.3

List of Turtles

Sl.No.	Name	Scientific Name
1	Indian Narrow-Headed Turtle (स्योतर)	Chitra indica
2	Indian Softshell Turtle (कटहवा)	Nilssonia gangetica
3	Indian Peacock Softshell Turtle (मोरपंखी)	Nilssonia hurum
4	Indian Flapshell Turtle (सुन्दरी)	Lissemys punctata
5	Brown-Roofed Turtle (ब्राह्मणी)	Pangshura smithii
6	Crown-Roofed Turtle (काली ढोढ़)	Hardella thurjii
7	Indian-Roofed Turtle (पचेड़ा)	Pangshura tecta
8	Indian-Tent Turtle (कोरी पचेड़ा)	Pangshura tentoria
9	Red-Crowned Roofed Turtle (साल)	Batagur kachuga
10	Spotted Pond Turtle (भूतकाथा)	Geoclemys hamiltonii
11	Three-Striped Roof Turtle (ढोढ़)	Batagur dhongoka
12	Tricarinate Hill Turtle (पहाड़ी त्रिकुटकी)	Melanochelys tricarinta
13	Indian Black Turtle (भारतीय काला कछुआ)	Melanochelys trijuga
14	Indian Star Tortoise (तारा कछुआ)	Geochlone elegans (Star)



In order to fulfill the requirement of the Biological Diversity Act, 2002 and Guidelines of Biodiversity Heritage Sites (BHS), the U.P. State Biodiversity Board invites suggestions from all stakeholders for declaration of Biodiversity Heritage Sites (BHS) of aforesaid site.

The suggestions may be sent to U.P. State Biodiversity Board at email: <u>upstatebiodiversityboard@gmail.com</u> by 31st October, 2015.

Pawan Kumar, Secretary, U.P. State Biodiversity Board East Wing, 'A' Block, IIIrd Floor, PICUP Bhawan, Vibhuti Khand, Gomti Nagar, Lucknow