

# BIODIV News

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Sharda Reservoir, Bifurcation,  
Puranpur, Pilibhit

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## Editorial

### Esteemed Readers,

The Sarus Crane is the State bird of Uttar Pradesh. The Wildlife wing of the U.P. Forest Department conducted account of Sarus Cranes in U.P. this year. Shri K.K. Jha, CCF, Eco-development in his article states that about 11,905 birds were counted and the highest numbers came from Mainpuri, Kanpur dehat and Shahjahanpur districts.

'Paniyala', *Flacourtia jangomas* is a fruit tree found in Gorakhpur district. Shri R.K. Dubey , ACF, visited a farmer who has a clonal orchard of this tree and has identified some interesting economic aspects of this tree.

The World Wildlife Week was celebrated by the Board in October and essay and poster competitions were organized. This issue includes the prize winning entries of the poster competition. The fourth board meeting was held on 29<sup>th</sup> November 2010.

The 10th Conference of Parties (COP) to the Convention on Biological Diversity (CBD) was held in Nagoya from 18th to 29th Oct. 2010. The Aichi targets were adopted at this meet, along with a resource mobilization strategy and the Nagoya Protocol was signed. This issue also includes what happened at the COP-10.

International press clippings include the findings of the decade long census on marine life and death of Paul, the Octopus. At the National level, the freshwater biodiversity of India is in the process of being assessed by the IUCN. The Defence Institute of Bio-energy has grown the world's costliest fungus in its lab. At the State level, the Central Institute of Sub-tropical Horticulture, Lucknow has developed a new kind of plywood from mango stone. The National Bureau of Soil Survey & Land Use Planning , has emphasized on the depletion of water table in Bundelkhand due to improper usage .How can we use natural resources in a way to leave a better future for our children? After all, water is essential to life!

– Editors

# Sarus Crane: State Bird of Uttar Pradesh

Kaushalendra Kumar Jha, CCF, Ecodevelopment ( U.P. Forest Department) and Pratibha Singh, DCF



**Biology:** Mated pairs engage in unison calling. The birds stand in a specific posture, heads thrown back and beak towards the sky during display. They breed primarily during rains. Females lay two eggs and incubation (done by both sexes) lasts 31-34 days. Chicks fledge (first flight) at 50-65 days. Fledging may go up to 85 days in certain cases. As per the qualitative assessment during a survey it was found out that average life span of this bird is 19 years and this starts breeding after three years. They produce two chicks per season approximately up to 12 years of age.

**Survival threat:** Major threat to the life of Sarus crane is loss and degradation of wetlands. Quality alteration of smaller wetlands is also important since they experience heavy human use caused by (a) high rates of sewage inflow, (b) agricultural runoff (c) pesticide residues. These conditions adversely affect Sarus survival. Population growth is also affected by collision with countryside high tension electrical wires causing un-natural mortality, egg stealing by human being and chick lifting by feral dogs.

## Conservation status:

IUCN has placed the Sarus crane in category VU (vulnerable). A taxon is vulnerable when it is not critically endangered or endangered but is facing a high risk of extinction in the wild in the medium-term future. (The 2010 IUCN Red List of threatened species).

In the CITES (Convention on International Trade in Endangered Species of Flora and Fauna) it is placed in Appendix II- (species that are not necessarily now threatened with extinction but may become so if trade is not strictly controlled).

The CMS (Convention on Migratory Species) has also placed this in Appendix- II Migratory species that need or would significantly benefit from international co-operation.

The Wildlife Protection Act, 1972 has placed Cranes in Schedule IV.

## Morphology:

The Indian Sarus Crane (*Grus antigone*) is about 6 feet tall. The body plumage is light grey. The crown is covered with smooth greenish skin. The rest of the head, throat and upper neck are covered with rough orange/red skin. White feathers form a collar between the bare reddish skin of the upper neck and the grey feathers of the lower neck. Legs and toes are a shade of red. Males and females are virtually indistinguishable but when in pairs, usually the females are smaller than the males. Juveniles have heads covered with cinnamon brown feathers. As the bird matures the plumages changes from brown to grey.

**Food:** They utilize a wide range of habitat depending on availability of food and cropping patterns. The optimal habitat includes flood plains, small seasonal marshes, wetlands, ponds, fallow and cultivated lands and rice fields. They are omnivorous and feed on tubers of sedges (*Eleocharis spp*), invertebrates, grains, small vertebrates and insects.



A sarus congregation. Photo Courtesy: Sarus Protection Society, UP, Lucknow

## Current status of Sarus population in Uttar Pradesh

Sarus census was conducted in 2010 in whole of the state of Uttar Pradesh under the auspices of Sarus Protection Society, UP.

## Background

Out of fifteen living species of cranes three are found in India, the Eurasian crane, Demoiselle crane and Sarus crane. One of the subspecies (*Grus antigone antigone*) has its stronghold in Uttar Pradesh. The habitats are so favourable that this part of the country is known as "Shangrila" of Indian sarus crane. However, status of the distribution and the population of ISC is considered to be on decline in the country and in turn in the world. Therefore, immediate assessment of the situation and possible conservation strategy is of utmost importance. The present census, 2010, was one of the efforts in this direction.

## Census methodology

Historically known potential sites for Sarus habitation were selected for head counting. Thus the canals, the rivers, the ponds, the lakes, the agriculture field and barren land with water stagnation were the target sites for counting. The forest officials, primarily the front line staff who had basic training were engaged for the job. The NGOs and nature lovers were also associated. A basic protocol was developed and data were collected in predesigned proforma. June 20, 2010 was fixed for

counting in whole of State of Uttar Pradesh. Early morning (06.00 h-07.30 h) and late afternoon (17.00h -19.30 h) was the counting period on this date. Highest number of Sarus, adult and juveniles both separately, during these periods were taken as the number of sarus at particular sites. These numbers were compiled to find out the number in the forest divisions and the revenue districts and finally the State.

## Results

The number of adult and juvenile Sarus is presented in Table 1. Perusal of the data shows that it had varied density in different districts. Therefore, they were categorized into absent, very low, low, high and very high density districts on the basis of artificial classification <1,1-50,51-100, 101-500 and >500, respectively. Density class wise district grouping and adult juvenile ratio are given in Table 2 and 3 followed by a Figure.

## Distribution of Sarus cranes by Agro-climatic zones

U.P. has 9 agro-climatic zones-The Terai, Western plain, Central western plain, South western semi arid plain, Central plain, Bundelkhand, North eastern plain, Eastern plain and Vindhyan plain (Map-1). Maximum number of Sarus cranes were counted in the Central plain agro climatic zone (4578) followed by the South western semi arid plain (4372) and North eastern plains (1158) (Map-2)

**Table 1. Sarus Population in different districts.***(New Districts not mentioned in the table are included in their respectively parent district)*

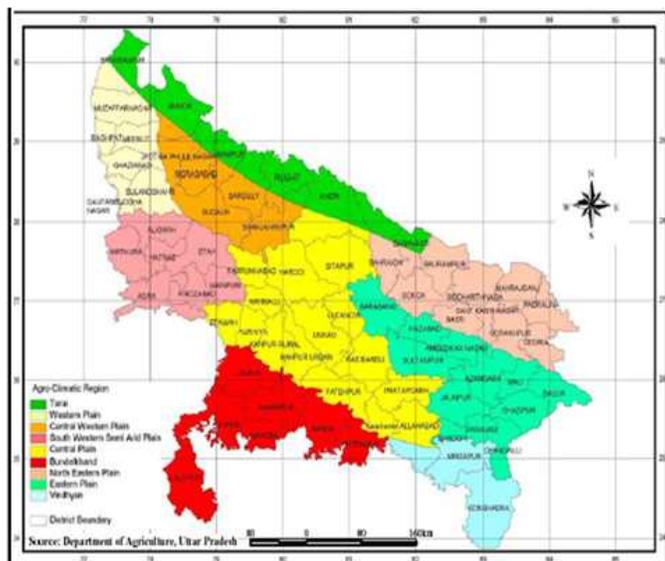
Sl. No.	District	Adult (A)	Juvenile (B)	Total (A+B)
1	Agra	48	1	49
2	Aligarh	243	54	297
3	Allahabad	0	0	0
4	Ambedkarnagar	0	0	0
5	Auraiya	585	67	652
6	Azamgarh	2	0	2
7	Badaun	25	5	30
8	Bagpat	0	0	0
9	Behraich	46	12	58
10	Ballia	83	0	83
11	Balrampur	56	0	56
12	Banda	71	0	71
13	Barabanki	202	12	214
14	Bareilly	66	42	108
15	Basti	96	11	107
16	Bhadohi	0	0	0
17	Bijnaur	46	3	49
18	Bulandshahr	178	2	180
19	Chandauli	0	0	0
20	Chitrakoot	40	10	50
21	Deoria	18	2	20
22	Etah	437	391	828
23	Etawah	1396	116	1512
24	Faizabad	6	0	6
25	Farrukhabad	108	0	108
26	Fatehpur	161	11	172
27	Firozabad	212	13	225
28	Gautambudhnagar	6	0	6
29	Ghaziabad	34	34	68
30	Gazipur	0	0	0
31	Gonda	25	1	26
32	Gorakhpur	94	14	108
33	Hamirpur	45	0	45
34	Hardoi	316	25	341
35	Jalaun	6	0	6

Sl. No.	District	Adult (A)	Juvenile (B)	Total (A+B)
36	Jaunpur	0	0	0
37	Jhansi	8	2	10
38	Jyotibaphulenagar	0	0	0
39	Kannauj	109	7	116
40	Kanpur	67	10	77
41	Kanpur Dehat	535	45	580
42	Kashiramnagar	116	216	332
43	Lakhimpur Kheri	219	18	237
44	Kushinagar	27	0	27
45	Lalitpur	4	0	4
46	Lucknow	8	0	8
47	Mahamayanagar	270	5	275
48	Mahrajganj	280	40	320
49	Mahoba	4	0	4
50	Mainpuri	2060	120	2180
51	Mathura	183	3	186
52	Mau	0	0	0
53	Meerut	15	0	15
54	Mirzapur	0	0	0
55	Muradabad	38	10	48
56	Muzaffarnagar	0	0	0
57	Pilibhit	210	14	224
58	Pratapgarh	31	0	31
59	Raibareli	251	5	256
60	Rampur	21	5	26
61	Saharanpur	0	0	0
62	Santkabirnagar	171	40	211
63	Shahjahanpur	436	46	482
64	Siddharthanagar	193	31	224
65	Sitapur	253	17	270
66	Sonbhadra	0	0	0
67	Sultanpur	44	3	47
68	Unnao	190	48	238
69	Varanasi	0	0	0
	<b>Total</b>	<b>10394</b>	<b>1511</b>	<b>11905</b>

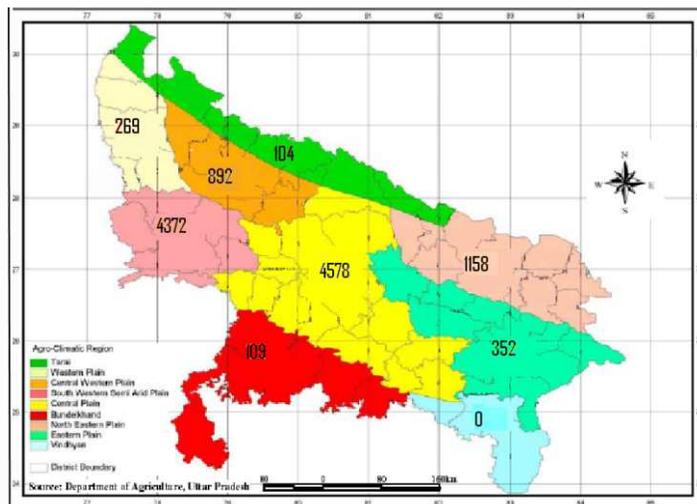
**Table 2: Adult: Juvenile ratio in different agro-climatic zones**

Sl. No	Agro-climatic zone of UP	Adult : Juvenile ratio	Total population
1	The Terai	13	104
2	Western plain	13	269
3	Central Western Plain	13	892
4	South Western Semi Arid Plain	18	4372

Sl. No	Agro-climatic zone of UP	Adult : Juvenile ratio	Total population
5	Central Plain	8	4578
6	Bundelkhand	6	190
7	North Eastern Plain	13	1148
8	Eastern Plain	4	352
9	Vindhyan	0	0



Map 1 : Agro-climatic Regions, Uttar Pradesh



Map 2 : Agro-climatic zones of UP showing distribution of Saras population

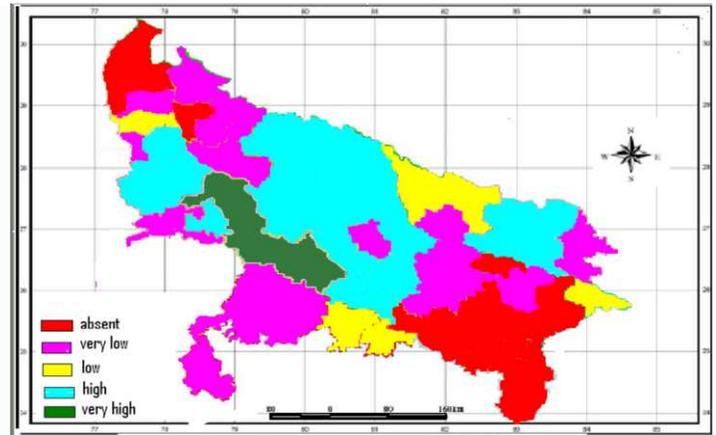
**Table 3. Density wise grouping of the districts and adult juvenile ratios in different districts**

Density Class	District	Total Sarus	A:J ratio
absent	Allahabad	0	0
absent	Ambedkarnagar	0	0
absent	Bagpat	0	0
absent	Bhadohi	0	0
absent	Chandauli	0	0
absent	Gazipur	0	0
absent	Jaunpur	0	0
absent	Jyotibaphulenagar	0	0
absent	Mau	0	0
absent	Muzaffarnagar	0	0
absent	Saharanpur	0	0
absent	Sonbhadra	0	0
absent	Varanasi	0	0
absent	Mirzapur	0	0
very low	Azamgarh	2	0
very low	Mahoba	4	0
very low	Lalitpur	4	0
very low	Faizabad	6	0
very low	Gautambudhnagar	6	0
very low	Jalaun	6	0
very low	Lucknow	8	0
very low	Jhansi	10	20
very low	Meerut	15	0
very low	Deoria	20	10
very low	Gonda	26	4
very low	Rampur	26	19
very low	Kushinagar	27	0
very low	Badaun	30	17
very low	Pratapgarh	31	0
very low	Hamirpur	45	0
very low	Sultanpur	47	6
very low	Muradabad	48	21
very low	Bijnaur	49	6
very low	Agra	49	2
very low	Chitrakoot	50	20

Density Class	District	Total Sarus	A:J ratio
low	Balrampur	56	0
low	Behraich	58	21
low	Ghaziabad	68	50
low	Banda	71	0
low	Kanpur	77	13
low	Ballia	83	0
high	Basti	107	10
high	Bareilly	108	39
high	Farrukhabad	108	0
high	Gorakhpur	108	13
high	Kannauj	116	6
high	Fatehpur	172	6
high	Bulandshahr	180	1
high	Mathura	186	2
high	Santkabirnagar	211	19
high	Barabanki	214	6
high	Siddharthanagar	224	14
high	Pilibhit	224	6
high	Firozabad	225	6
high	Lakhimpur Kheri	237	8
high	Unnao	238	20
high	Raibareli	256	2
high	Sitapur	270	6
high	Mahamayanagar	275	2
high	Aligarh	297	18
high	Maharajanj	320	13
high	Kashiramnagar	332	65
high	Hardoi	341	7
high	Shahjahanpur	482	10
very high	Kanpur Dehat	580	8
very high	Auraiya	652	10
very high	Etah	828	47
very high	Etawah	1512	8
very high	Mainpuri	2180	6
<b>Total</b>		<b>11905</b>	<b>13</b>

**Table 4: Summary of Densitywise grouping of Districts**

Density class	Number of birds	Number of districts
Absent	0	14
Very low	1-50	21
Low	51-100	6
High	101-500	23
Very high	>500	5



Map 3 : Distribution of Saras in the state by artificial class population

Perusal of adult juvenile ratio indicates that the state average is 13. This could be considered as a healthy indicator of growth in the state at overall scenario since one of the findings states that adult juvenile ration in Sarus between 10 and 15 is an indication of good growth rate. However, district wise fragmented picture needs a serious consideration since adult juvenile ratio varied from 1 to 65. There are certain districts which fall outside the lower range of this ratio.

### Management implications:

Although further data needs to be collected on temporal basis and robust conclusion needs to be drawn, there is some initial indication which should be looked into from the management point of view. The overall population in the state of Uttar Pradesh-

11905 seems to be a viable population of Sarus cranes. Conservation efforts are required nevertheless to bring an improvement in the recruitment rate.

Arresting the deterioration of the habitats of these cranes is of prime importance. Also needed is the immediate restoration of already deteriorated habitats. The districts which have lower than 10 adult juvenile ratio should be taken up on top priority basis for curative as well as preventive measures to increase in Sarus number, the districts which have this ratio between 10 and 15 should be taken up for preventive measures to stop decline in Sarus number and those having the ratio more than 15 lighter prevention measures should be taken up at least to maintain the number.

(We acknowledge the contribution of Sarus Protection Society, UP and PCCF, Wildlife UP for providing us the data of Sarus Crane, 2010)

## Cranes of the World

<u>Common Name</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Scientific Name</u>
1. Black-Crowned Crane	- <i>Blaearica pavonina</i>	9. Red Crowned Crane	- <i>Grus japonensis</i>
2. Black- Necked Crane	- <i>Grus nigricollis</i>	10. Sandhill Crane	- <i>Grus canadensis</i>
3. Blue Crane	- <i>Anthropoides paradisea</i>	11. Sarus Crane	- <i>Grus antigone</i>
4. Brolga	- <i>Grus rubicunda</i>	12. Siberian Crane	- <i>Grus leucogeranus</i>
5. Demoiselle Crane	- <i>Anthropoides virgo</i>	13. Wattled Crane	- <i>Buggeranus carunculatus</i>
6. Eurasian Crane	- <i>Grus grus</i>	14. White Naped Crane	- <i>Grus vipio</i>
7. Grey Crowned Crane	- <i>Balearica regulorum</i>	15. Whooping Crane	- <i>Grus Americana</i>
8. Hooded Crane	- <i>Grus monacha</i>		

# Conferences, Trainings and Tours

## 1. **Fourth International Conference (ICPEP-4) jointly organized by International Society of Environmental Botanists (ISEB) and National Botanical Research Institute (NBRI), Lucknow, India during December 8-11, 2010.**

Dr. Ram Jee Srivastava, Sr. Scientist, U.P. State Biodiversity Board participated in the Fourth International Conference (ICPEP-4) jointly organized by International Society of Environmental Botanists (ISEB) and NBRI, Lucknow, during December 8-11, 2010. This Conference aimed to provide an international forum for serious discussions and deliberations on the burning problem of environmental pollution and the role of plants in pollution indication and remediation and such related issues as biodiversity conservation, sustainable development, climate change and effects of pollution on agriculture, food productivity, forestry and human health. More than 600 delegates including eminent environmental scientists, academicians, young researchers, government officials, NGOs and managers of industry from India as well as 60 foreign delegates e.g. from U.S.A., Japan, Italy, Philippines, Chile, Iran, Israel, Australia, Denmark, Poland, Hungary, Botswana, Nigeria, Indonesia and Taiwan participated in this multi-disciplinary Conference.

Dr. Srivastava presented a paper in the session on Climate Change and Biodiversity. The topic of the presentation was "Climate Change, Urban Environmental Crisis and Biodiversity -An Overview".



## 2. **Indian Biodiversity Congress at Thiruvananthapuram 26-30 Dec, 2010: Shri Ashok Kashyap , Dy. Ranger Indian Biodiversity Congress organized by Kerala Biodiversity Board at Thiruvananthapuram .**



## 3. **Gorakhpur 14.10.2010 to 18.10.2010. Shri RK Dubey , He visited the biodiversity park at Gorakhpur along with Dr AK Srivastava (Head of Dept of Botany, MGPG college, Gkp), Dr. RPSingh (Associate professor, Botany Dept, SGPG college, Sohargarh) , Dr DS Mishra (Head, Botany Dept, Islamia PG college, GKP). Information on the economics of Paniala (*Flacourtia jungomas*) was collected by a visit to the village of Karmaha.**

# Flacourtia jangomas (Paniyala)



## Taxonomy

Kingdom	:	Plantae
Phylum	:	Tracheophyte
Class	:	Magnoliopsida
Order	:	Violales
Family	:	Salicaceae
Tribe	:	Flacourtieae
Genus	:	Flacourtia
Species	:	jangomas Syn. 7. cataphracta

## Local Name - Paniyala (Hindi)

*Flacourtia jangomas*, Indian plum, coffee plum, is a tree belonging to the Salicaceae or Willow Family. It is widely cultivated in Southeast and East Asia, and has escaped cultivation in a number of places. Its wild origin is unknown but is speculated to be tropical Asia, perhaps India. In Uttar Pradesh this tree is found mainly in Gorakhpur district.

**Distribution:** The Book of Indian medicinal plants (*Vol 3*) published by Orient Longman shows this tree to be distributed throughout India.

**Description:** The tree itself is small (upto 9m in height) often armed low down with stout sharp decomposed spines on trunk. Bark is smooth, pale brown.

**Leaves :** are simple, oblong or ovate, acuminate, glabrous, dark green.

**Flowers:** Small, glabrous racemes

**Fruit:** Ovoid, green turning brownish purple on ripening.

**Uses:** The bark leaves and fruits are used.

The bark and leaves are astringent, acrid, sour and are used as a diaphoretic infusion of bark is used as a gargle. In India, dried leaves of *Flacourtia jangomas* are used to treat asthma<sup>i</sup> and a decoction of the leaves of the same species are used to treat diarrhoea and dysentery in the Malay Peninsula<sup>ii</sup>. Two



limonoids, i.e. *limolin* and jangomolide were reported from the stem and bark of *F. jangomas*. Leaves and bark are slightly acid and acrid and reported to be useful in diarrhea, piles, weakness of limbs, bleeding gums and stomatitis<sup>iii</sup>. Leaves and stem also have antidiabetic property<sup>iv</sup>.

The fruit are sweet and are used as a digestive, stomachic, anti-inflammatory liver tonic. The fruits are suitable for jams, jellies, syrups and preserves. Fruits are used in treatment of liver related disorders<sup>v</sup>.

Roots are important remedy for relieving toothache.

U.P. is a state with large genetic diversity of plants with medicinal properties. Traditional medicine has identified medicinal values of many plants. Screening of plants for antimicrobial activities is important. Kramul Haque et.al<sup>vi</sup>, took *Flacourtia jangomas* for investigation of its antibacterial

property (chloroform fraction of the root) against some pathogenic bacteria like *Bacillus cereus*, *Bacillus megaterium*, *Escherichia coli* and *Shigella shiga*. *F. jangomas* showed good activity against all tested bacteria, E.coli being the most susceptible bacterium. The study of Haque, et al, 2011 shows that *Flacourtia jangomas* exhibits interesting antimicrobial properties though more investigation is needed to determine the chemical compound liable for this activity from the plant.

Shri R.K. Dubey, ACF, U.P. State Biodiversity Board in his field visit of Gorakhpur area identified some interesting economic aspects of this tree. A clonal orchard of *paniyala* developed by a farmer giving much more profit than normal agriculture, details of which are as follows:

**Name of Village :** Karmaha , Gram Sabha Karmahiya, Dist Gorakhpur (near FCI factory)

**Name of farmer:** Paras Nishad S/o Shi Gabbu Nishad

**Number of Trees:** 9 (the trees had originated from cuttings from a single tree)

**Average Rate of fruits:** in the market Rs 60-90 per kg in the month of October

**Total Income from trees:** Rs 30,000 *i.e.* 30,000/9 = Rs.3300 (approx) per tree/year.

- i. Ahmad J., Wizarat D., Shamsuddin K.M., Zaman A. and Connolly J.D. (1984). Jangomolide, a novel limonoid from *Flacourtia Jangomas*. *Phytochemistry*, 23:1269-1270.
- ii. Burkill I.H. (1966). A Dictionary of the Economic Plants of the Malay Peninsula, *Ministry of Agriculture and Cooperatives, Kuala Lumpur*, 2444.
- iii. Kirthikar K.R. and Basu B.D. (1993). Indian Medicinal Plants. 2nd Edition. *Dehradun, India*, 220
- iv. Singh A.K. and Singh J. (2011). Evaluation of anti-diabetic potential of leaves and stem of *Flavourtia jangomas* in streptozotocin –induced diabetic rats. *Indian Journal of Pharmacology*, 42(5): 301-305.
- v. Srivastava D., Prabhuji S.K. and Rao G.P. (2009). Taxonomic and Ethno-biological Status of *Flacourtia jangomas* (Lour.) Raeus. : *An Endemic Nutraceutical Plant of Eastern U.P. Medicinal Plants*, 1(1): 49-53
- vi. Haques Kramul, M.E, Sarkeri C. Gopal, Zahan Ronok, Alam M Badrul, Islam Saiful Md and Mosaddik M.A. Antibacterial activity of *Flacourtia jangomas* and *Flacourtia sepriaria*. *International Journal of Pharmacy and Life Sciences*.

# World Wildlife Week

1-7<sup>th</sup> October, 2010

To sensitize the students towards wildlife conservation and its significance, the World Wildlife Week was celebrated by the Board. Essay and Poster competitions were organized on the occasion.

Information regarding the essay, poster competitions were sent to 20 schools and 08 colleges of Lucknow city. Entries were invited till 04th October, 2010.

## Essay Competition (English) "The Importance of Biodiversity Conservation"

### No. of Participants

Class 5-8	34
Class 9-12	41
College Graduates	19

## Essay Competition (Hindi) "जैव विविधता संरक्षण का महत्व"

### No. of Participants

Class 5-8	12
Class 9-12	09
College Graduates	08

## Poster Competition Our Diverse Wildlife

### No. of Participants

Class 9-12	30
College graduates	14

The topic for English Essay was "The Importance of Biodiversity Conservation" for all the categories of students (Class VI to VIII, Class IX to XII and graduate students) whereas the topic for Hindi Essay was "जैव विविधता संरक्षण का महत्व" for all the categories. The poster design competition was open for students of Class IX to XII as well as graduate students. The topic for the contest was "Our Diverse Wildlife" or "हमारे विविध वन्य जीव". A total of 167 students participated in the wildlife week celebrations (126 students from schools and 41 from colleges).

## Prize Winners

### Essay Competition (in Hindi)

Topic: जैव विविधता संरक्षण का महत्व

Category	Sl. No.	Name of the Student	Class	Name of the Institution/College	Place
JUNIOR (Class VI to VIII)	1	Sumit Dhariwal	VIII-A	Modern Academy Inter College, Gomti Nagar, Lko	Ist
	2	(Ms.)Sudeshna Bhowmik	VIII A	" "	IIInd
	3	(Ms.) Akansha Verma	VII-B	T.D. Girls Inter College, Gomti Nagar, Lucknow	IIIrd
	4	(Ms.) Swati Patwa	VII-B	" "	Conso-lation
SENIOR (Class IX to XIII)	1	(Ms.) Shweta Patel	IX-A	Rani Laxmi Bai Memorial Senior Secondary School, Indira Nagar, Lucknow	IIIrd
	2	(Ms.) Preeti Prajapati	IX-(H/M)	" "	Ist
	3	(Ms.) Shweta	IXA(E/M)	" "	IIInd
	4	(Ms.) Avantika Kaushal	XII	Awadh Academy Inter College, Lucknow	Conso-lation
Graduate	1	(Ms) Nidhi Singh	B.A. II	Pt. Deen Dayal Upadhyaya Girls P.G. College, Lucknow	IIIrd
	2	(Ms) Manjari Gupta	B.A. II	" "	IIInd
	3	Upendra Bhai Patel	M.A. Geog.	National P.G. College, Lucknow	Ist
	4	Rishubh Mishra	M.A. Geog.	" "	Conso-lation

### Essay Competition (in English)

Topic : "The Importance of Biodiversity Conservation"

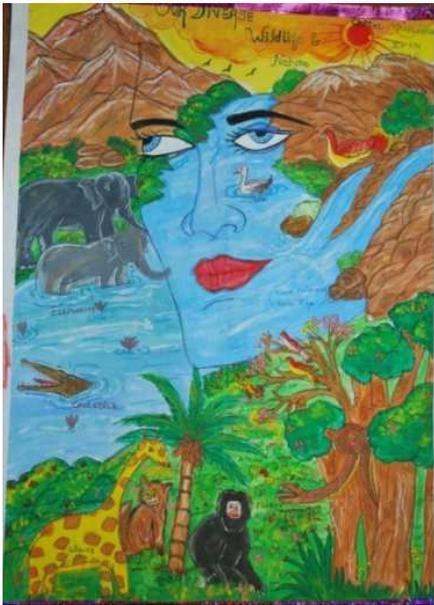
Junior (Class VI to VIII)	1	Ruchi Mishra	VIII	Scholar's Home, Lucknow	Ist
	2	Shivendra Pratap Singh	VII-A	Rani Laxmi Bai Memorial Senior Secondary School, Indira Nagar, Lucknow	IIInd
	3	Divya Tripathi	VI-C	" "	IIIrd
	4	Swarnima Singh	VIII-E	H.A.L. School, Lucknow	IIIrd
	5	Pragati Srivastava	VII-A	Modern Academy, Lucknow	Conso-lation
Senior (Class IX to XII)	1	Vanshika	X-A	Scholar's Home, Lucknow	Ist
	2	Purnima Singh	X-D	H.A.L. School, Lucknow	IIInd
	3	Artika Srivastava	X-A	Scholar's Home, Lucknow	IIInd
	4	Aishwarya Singh	IX-E	H.A.L. School, Lucknow	IIIrd
	5	Viplav Singh	XI-B	Modern Academy, Lucknow	Conso-lation
Graduate	1	Shipra Dixit	B.Sc. II Year	D.D.V. Govt. Girls P.G. College, Lucknow	Ist
	2	Akansha Singh	M.Sc. Bot. IIIrd Sem.	Lucknow University, Lucknow	Ist
	3	Tapti Nigam	M.Sc. IIIrd Sem.	Shia P. G.College, Lucknow	IIInd
	4	Ankur Kamle	M.Sc. Ist (Zoology)	" "	IIIrd
	5	Samar Ahmad	B.Tech Biotech.	Integral University, Kursi Road, IIIrd year Lucknow	IIIrd
	6	Akansha Srivastava	B.Sc. IIInd year	D.D.V. Govt. Girls P.G. College, Lucknow	Conso-lation
	7	Karuna Tripathi	M.Sc. IIrd Sem.	Lucknow University, Lucknow	Conso-lation

# World Wildlife Week

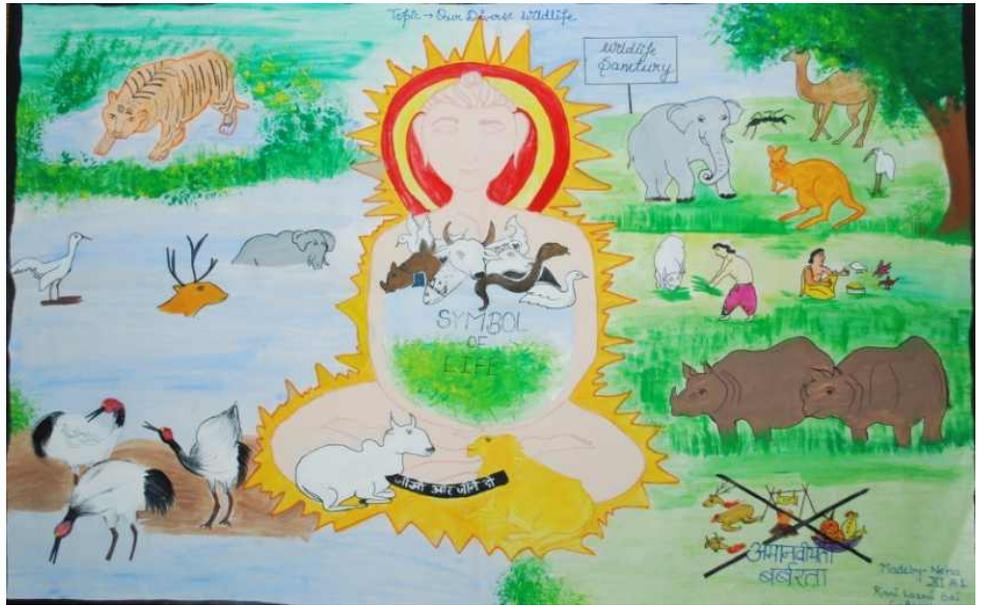
1-7<sup>th</sup> October, 2010

## Poster Design Competition

Topic: Our Diverse Wildlife



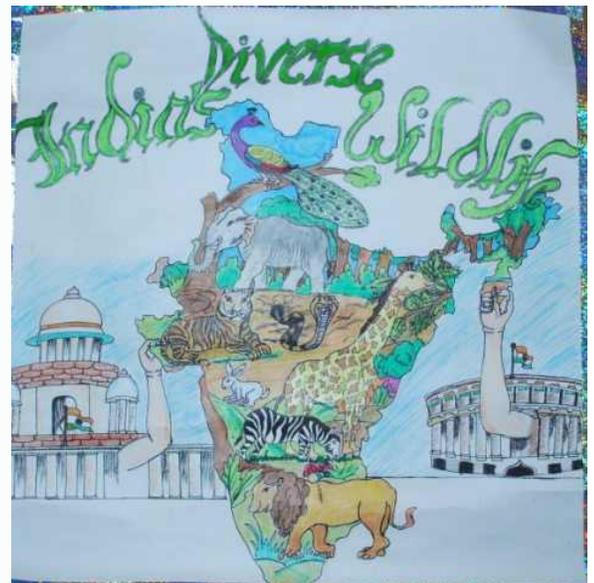
1st Prize, **Chitra Vishwakarma**,  
Rani Laxmi Bai Memorial School,  
Lucknow



1st Prize, **Neha**,  
Rani Laxmi Bai Memorial School,  
Lucknow



11nd Prize, **Shweta Patel**,  
Rani Laxmi Bai Memorial School,  
Lucknow



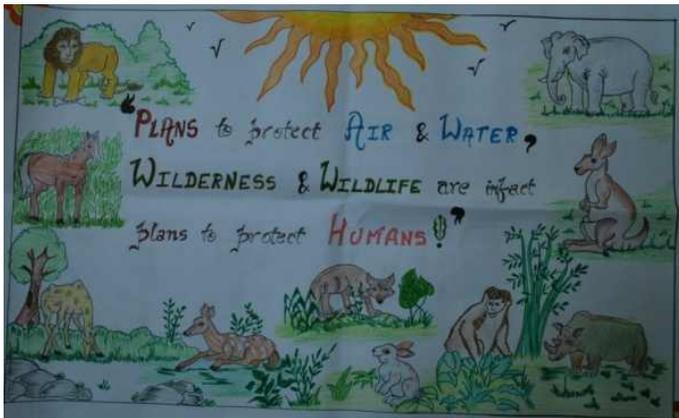
111rd Prize, **Sakshi Shukla**,  
Modern Academy, Gomti Nagar, Lucknow

# World Wildlife Week

1-7<sup>th</sup> October, 2010

## Poster Design Competition

Topic: Our Diverse Wildlife



Consolation Prize, **Meghna**,  
Rani Laxmi Bai Memorial School, Lucknow



Ist Prize, **Shreya Mishra**,  
Deptt. of Botany,  
University of Lucknow



IInd Prize, **Farhan Ateek**,  
Plant Sciences, University of Lucknow



IIIrd Prize, **Shikha Gupta**,  
Deptt. of Botany, University of Lucknow



Consolation Prize,  
**Saurabh Mishra**,  
Deptt. of Botany,  
University of Lucknow

# CBD COP -10 at Nagoya

18 Oct to 29 Oct 2010



**Nailed it: Environment Minister Ryu Matsumoto** raises the hammer to end the COP10 conference in Nagoya. (Source: KYODO PHOTO, Japan Times Sunday, Oct. 31, 2010)



**COP President Ryu Matsumoto** waving to the plenary after the adoption of the Nagoya Protocol.

Ahmed Djoghlaif, Executive Secretary of the Convention said "If Kyoto entered history as the city where the climate accord was born, Nagoya will be remembered as the city where the biodiversity accord was born." The 10<sup>th</sup> meeting of the **Conference of the Parties (COP 10)** was held in Nagoya, Aichi Prefecture, Japan, from 18 to 29 October 2010. Some 18,000 participants representing the 193 Parties to the Convention on Biological Diversity (CBD) and their partners closed the Nagoya Biodiversity Summit by adopting historic decisions that will permit the community of nations to meet the unprecedented challenges of the continued loss of biodiversity compounded by climate change. COP 10 included a high-level ministerial segment organized by the host country. The high level segment took place from 27 to 29 October 2010. The high-level segment of the Nagoya Summit was held with the participation of 122 ministers and five Heads of State and Government, including the President of Gabon, the President of Guinea-Bissau, the Prime Minister of Yemen representing the Group of 77 and China, as well as Prince Albert of Monaco. This meeting took place during the International Year for Biodiversity (IYB) as declared by the United Nations General Assembly.

The meeting achieved its three inter-linked goals:

1. Adoption of a new ten year Strategic Plan (Aichi targets) to guide international and national efforts to save biodiversity through enhanced action to meet the objectives of the Convention on Biological Diversity,

2. A resource mobilization strategy that provides the way forward to a substantial increase to current levels of official development assistance in support of biodiversity; and
3. A new international protocol (Nagoya Protocol on Access and Benefit-sharing) on access to and sharing of the benefits from the use of the genetic resources of the planet.

The Strategic Plan of the Convention on Biological Diversity or the "Aichi Target", adopted by the meeting includes 20 headline targets, organized under five strategic goals that address the underlying causes of biodiversity loss, reduce the pressures on biodiversity, safeguard biodiversity at all levels, enhance the benefits provided by biodiversity, and provide for capacity-building. Among the targets, it is important to note that Parties:

- Agreed to at least halve and where feasible bring close to zero the rate of loss of natural habitats including forests;
- Established a target of 17 per cent of terrestrial and inland water areas and 10 per cent of marine and coastal areas;
- Through conservation and restoration, Governments will restore at least 15 percent of degraded areas; and
- Will make special efforts to reduce the pressures faced by coral reefs.

COP-11, the next meeting of the Conference of the Parties, will take place in 2012 in India.

# Nagoya Protocol

## What is the Nagoya Protocol and what is its objective?

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity is a supplementary agreement to the Convention on Biological Diversity. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources.

The Nagoya Protocol on ABS was adopted on 29 October 2010 in Nagoya, Japan and will enter into force 90 days after the fiftieth instrument of ratification. Its objective is the fair and equitable sharing of benefits arising from the utilization of genetic resources, thereby contributing to the conservation and sustainable use of biodiversity.

## Why is the Nagoya Protocol important?

The Nagoya Protocol will create greater legal certainty and transparency for both providers and users of genetic resources by:

- Establishing more predictable conditions for access to genetic resources.
- Helping to ensure benefit-sharing when genetic resources leave the contracting party providing the genetic resources.

By helping to ensure benefit-sharing, the Nagoya Protocol creates incentives to conserve and sustainably use genetic resources, and therefore enhances the contribution of biodiversity to development and human well-being.

## What does the Nagoya Protocol cover?

The Nagoya Protocol applies to genetic resources that are covered by the CBD, and to the benefits arising from their utilization. The Nagoya Protocol also covers traditional knowledge (TK) associated with genetic resources that are covered by the CBD and the benefits arising from its utilization.

What are the core obligations of the Nagoya Protocol with respect to genetic resources?

The Nagoya Protocol sets out core obligations for its contracting Parties to take measures in relation to access to genetic resources, benefit-sharing and compliance.

## Access obligations

Domestic-level access measures are to:

- Create legal certainty, clarity and transparency
- Provide fair and non-arbitrary rules and procedures
- Establish clear rules and procedures for prior informed consent and mutually agreed terms
- Provide for issuance of a permit or equivalent when access is granted
- Create conditions to promote and encourage research contributing to biodiversity conservation and sustainable use
- Pay due regard to cases of present or imminent emergencies that threaten human, animal or plant health
- Consider the importance of genetic resources for food and agriculture for food security

## Benefit-sharing obligations

Domestic-level benefit-sharing measures are to provide for the fair and equitable sharing of benefits arising from the utilization of genetic resources with the contracting party providing genetic resources. Utilization includes research and development on the genetic or biochemical composition of genetic resources, as well as subsequent applications and commercialization. Sharing is subject to mutually agreed terms. Benefits may be monetary or non-monetary such as royalties and the sharing of research results.

## Compliance obligations

Specific obligations to support compliance with the domestic legislation or regulatory requirements of the contracting party providing genetic resources, and contractual obligations reflected in mutually agreed terms, are a significant innovation of the Nagoya Protocol. Contracting Parties are to:

- Take measures providing that genetic resources utilized within their jurisdiction have been accessed in accordance with prior informed consent, and that mutually agreed terms have been established, as required by another contracting party
- Cooperate in cases of alleged violation of another contracting party's requirements
- Encourage contractual provisions on dispute resolution in mutually agreed terms
- Ensure an opportunity is available to seek recourse under their legal systems when disputes arise from mutually agreed terms
- Take measures regarding access to justice
- Take measures to monitor the utilization of genetic resources after they leave a country including by designating effective checkpoints at any stage of the value-chain: research, development, innovation, pre-commercialization or commercialization

## How does the Nagoya Protocol address traditional knowledge associated with genetic resources and genetic resources held by indigenous and local communities?

- The Nagoya Protocol addresses traditional knowledge associated with genetic resources with provisions on access, benefit-sharing and compliance. It also addresses genetic resources where indigenous and local communities have the

established right to grant access to them. Contracting Parties are to take measures to ensure these communities' prior informed consent, and fair and equitable benefit-sharing, keeping in mind community laws and procedures as well as customary use and exchange.

## Tools and mechanisms to assist implementation

The Nagoya Protocol's success will require effective implementation at the domestic level. A range of tools and mechanisms provided by the Nagoya Protocol will assist contracting Parties including:

- Establishing national focal points (NFPs) and competent national authorities (CNAs) to serve as contact points for information, grant access or cooperate on issues of compliance
- An Access and Benefit-sharing Clearing-House to share information, such as domestic regulatory ABS requirements or information on NFPs and CNAs
- Capacity-building to support key aspects of implementation. Based on a country's self-assessment of national needs and priorities, this can include capacity to
  - Develop domestic ABS legislation to implement the Nagoya Protocol
  - Negotiate MAT
  - Develop in-country research capability and institutions
- Awareness-raising
- Technology Transfer

Targeted financial support for capacity-building and development initiatives through the Nagoya Protocol's financial mechanism, the Global Environment Facility (GEF).

**We should preserve every scrap of biodiversity as priceless while we learn to use it and to understand what it means to humanity.**

*– E.O. Wilson*

# Aichi Biodiversity Targets

The Strategic Plan for Biodiversity 2011-2020 - A ten-year framework for action by all countries and stakeholders to save biodiversity and enhance its benefits for people.

## THE VISION:

**"By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."**

## THE MISSION :

"Take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020

ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication. To ensure this, pressures on biodiversity are reduced, ecosystems are restored, biological resources are sustainably used and benefits arising out of utilization of genetic resources are shared in a fair and equitable manner; adequate financial resources are provided, capacities are enhanced, biodiversity issues and values mainstreamed, appropriate policies are effectively implemented, and decision-making is based on sound science and the precautionary approach."

- Strategic Goal A** : Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
- Strategic Goal B** : Reduce the direct pressures on biodiversity and promote sustainable use
- Strategic Goal C** : To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
- Strategic Goal D** : Enhance the benefits to all from biodiversity and ecosystem services
- Strategic Goal E** : Enhance implementation through participatory planning, knowledge management and capacity building

**Strategic Goal A : Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society**

### Target 1

By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

### Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

### Target 3

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into

account national socio economic conditions.

### Target 4

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

**Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use**

### Target 5

By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

### Target 6

By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and

vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

#### **Target 7**

By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

#### **Target 8**

By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

#### **Target 9**

By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

#### **Target 10**

By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

### **Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity**

#### **Target 11**

By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

#### **Target 12**

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

#### **Target 13**

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

### **Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services**

#### **Target 14**

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

#### **Target 15**

By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

#### **Target 16**

By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

### **Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building**

#### **Target 17**

By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

#### **Target 18**

By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

#### **Target 19**

By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

#### **Target 20**

By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

# 4<sup>th</sup> Board Meeting

29<sup>th</sup> November, 2010

U.P. State Biodiversity Board's fourth Board meeting was held on 29-11-10 in PICUP Bhawan, Lucknow. The confirmation of the minutes of the previous meeting was done first, followed by discussions on the progress and follow up actions on the directions given in the previous meetings. In addition, a review on the progress of various activities of the board was presented by the Member Secretary, Shri Pawan Kumar.

The major decisions taken during the Board meetings of the period under report are as follows:

## 4<sup>th</sup> Board Meeting on 29-11-2010

1. Approval given for fixation of pay of Shri K.K. Tiwari, Dy. Manager (Systems) as per the 6th Pay Commission recommendations.
2. Audited report of 2009-10 presented before the board. Approval of budget and expenditure for the year 2009-10 by the Board.
3. Approval for revised budget of 2010-11 and proposed budget of 2011-12.
4. Approval of office space for the board.
5. Projects were presented before the Board. The Board advised to:
  - (i) Make a Project Appraisal Committee to examine all projects before putting up to Board.
  - (ii) To prepare detailed project guidelines for approval of projects by the Board.
  - (iii) All projects to be put up to board after examination and with recommendation of Project Appraisal Committee.
  - (iv) All projects to be finally approved by the Chairman. U.P. State Biodiversity Board.
6. Approval of honoraria to be given to members of Project Appraisal Committee.
7. Approval of honoraria to be paid to Legal Advisor to the board.

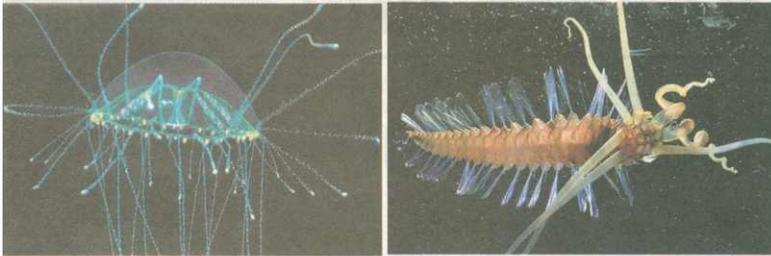


Participants at the Board meeting

# Newspaper Clippings

## (i) International News

DELHI  
THE HINDU • TUESDAY, OCTOBER 5, 2010



A spectacular jelly fish inhabiting the Great Barrier Reef off the Lizard Island. At right, the "squid worm" discovered from the Celebes Sea in Southeast Asia. — PHOTOS: GARY CRANITCH, LAURENCE MAUDIN

## Over 1 million marine species living

Decade-long census reveals more than 6,200 of them

Staff Reporter

**KOLLAM:** The marine species living on earth may number between 1 million and 1.4 million, excluding microbes, according to a decade-long Census of Marine Life, the largest global research programme on marine biodiversity. The findings of the 2000-10 census were released on Monday.

The census resulted in the discovery and description of more than 1,200 marine species and the collection of more than 5,000 new species, excluding microbes, which are yet to be described.

These will be in addition to the 250,000 species formally described so far in science literature.

Among the new species discovered and described is a crab so unusual that it warranted a new family designation "Kiwidae." It is named after the mythological "Ki-

of shellfish. The species was found south of Easter Island.

Other species discovered include a blind lobster, a new species of shrimp designated *Hippolyte catagrapha*, a finned octopod which flaps a large pair of ear-like fins to swim, a "squid worm" from the Celebes Sea in South East Asia and a vent snail inhabiting deep sea hydrothermal vents and harbouring chemoautotrophic symbionts in its gills which provide the snail with all the nutrients it needs.

Interestingly, the snail found near a vent off Tokyo is the only one discovered to date. The census has also estimated up to 1 billion marine microbes.

More than 80 per cent of the species discovered from the Australian region, 70 per cent from Japan, 75 per cent from Mediterranean deep sea, 58 per cent from the Antarctica, 38 per cent from southern Africa and 10 per

cent were described.

The census has also mapped marine highways and rest stops. Scientists traced blue-finned tuna migrating from western United States and Japan three times in a single year and one grey-headed albatross flew around the world in just 46 days.

### Biodiversity richer

One of the largest scientific collaborations ever conducted, more than 2,700 scientists from over 80 countries with 640 participating institutions, spent 9,000 days at sea on more than 540 expeditions, more than expected".

The census called for a global investment of \$ 650 million and another \$75 million from the Alfred P. Sloan Foundation.

While most of what mankind knows about the ocean is

depths of approximately 1,000 feet, the scientists even explored the 10,000-metre-deep Marianas Trench south east of Japan. The census reveals what, where and how many species live and hide in global oceans.

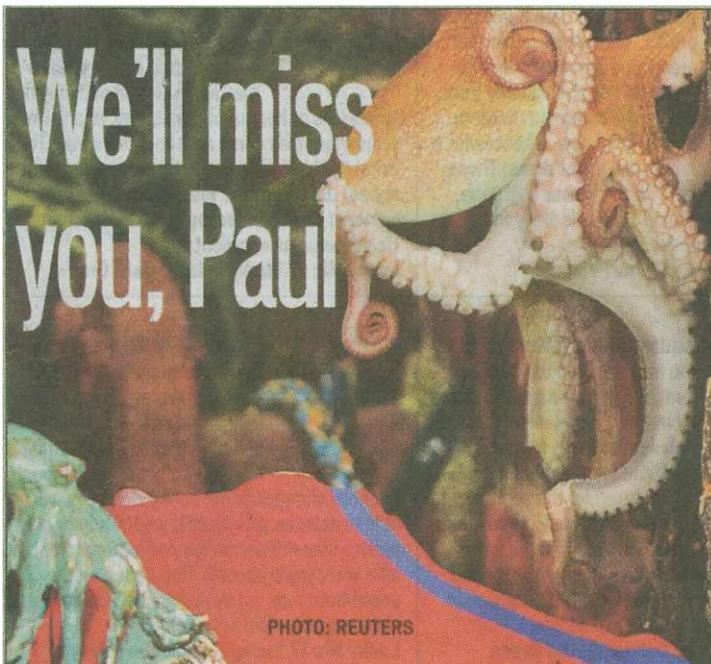
Ian Piner, chairman of the census steering committee said, "this cooperative international 21st century voyage has systematically defined for the first time both the known and the vast unknown, unexplored ocean. The beauty, wonder and importance of marine life are hard to overstate."

He added that all surface life depends on life inside and beneath the oceans. Sea provides half our oxygen, a lot of our food and regulates the climate. "We are all citizens of the sea."

The census has enabled mankind to be better acquainted with our fellow travellers of the sea and their vast

**Oct 5, 2010:** Findings of the decade long (2000-2010) census on Marine life were released- resulting in discovery and description of 1200 marine species and collection of another 5000 new species. This is in addition to 2, 50,000 species formally described so far. About 2700 scientists from 80 countries spent 9000 days at sea for this study.

**Oct 28th, 2010:** The Mollusk turned sage , Paul the Octopus, expired on Oct 26 , 2010 in his aquarium in the western German city of Oberhausen. Two and a half years old at the time of his death he became a media sensation in Germany and around the world this summer with his talent for World Cup predictions. He tipped winners by choosing between two mussel-filled containers adorned with the flags of each team.



Some loved him, some -shated him. A single prediction by him was capable of dividing the world. No wonder, then, that many are mourning the death of Paul, the 'psychic octopus', who correctly predicted all the match results during the FIFA World Cup earlier this year.

Since Paul passed away in his tank in the Oberhausen Sea Life Centre in Germany early Tuesday morning, several theories are doing the rounds. Jiang Xiao, the director of a forthcoming thriller titled Who Killed Paul the Octopus? was quoted as saying, "The creature had really been dead for the last three months. Paul had died

in July and been secretly replaced by his keepers."

The news of his death was a hot topic of discussion online, too. "Jab tak World Cup football rahega, Paul the Octopus tera naam rahega!," wrote a fan on Facebook. "How the hell am I supposed to bet on the winning teams now (sic)," wrote Bhaskar on the website. While some mourned, others saw the lighter side, choosing to crack jokes instead. "We can finally fry him and have a good meal," tweeted Shilpa Goel, a BPO employee. Other tweets included: "Paul the psychic octopus has died. Be he didn't see that coming.,"

AAKRITI SAWHNE

## Cowherds discovering that ticks are for the birds

Eric Naki

South African cowherds are discovering that when it comes to debugging their cattle, nature knows best.

Generations of cattle owners who dipped their livestock in pesticides ended up killing not only the ticks that feast on them, but also the red-billed oxpeckers that eat the ticks. Now environmentalists want to cut out the pesticides, hand the job back to the birds, and in the process save them from extinction.

"We are repairing the damage done 100 years ago and (putting) nature the way it should be," says Arnaud Le Roux, whose Endangered Wildlife Trust is overseeing Operation Ox-

pecker. The birds are being collected at a research facility in the north of the country and will be distributed to cattle farmers and private game park owners nationwide.

The Mpongo Game Park in south-eastern South Africa has received 20 birds.

The bird is famous for its bright red bill, yellow-ringed eyes and voracious appetite for ticks.

An oxpecker can eat 13,000 of them in a day, and the meals are everywhere — on antelope, horses, cattle, buffalo, rhino, lion, elephant and leopard.

The ticks carry a host of illnesses including red water disease, a common killer of cattle, but are harmless to oxpeckers. — AP



**Nov 2, 2010:** The Red billed Oxpecker, *Buphagus erythrorhynchus*, is a member of the starling and myna family Sturnidae. It is native to the Savannah of sub-Saharan Africa, from the Central African Republic east to Sudan and south to northern and eastern South Africa. It is an insect eater, but gets its name from its habit of feeding on ticks and other insects living on the hides of large animals.

It is claimed that it can eat up to 100 engorged ticks a day, this is often secondary as its favourite food is blood. They also feed on wounds of animals keeping them open to more parasites. Is it good?

With the increase in more intensive cattle farming dipping of cattle to manage the tick load is practiced widely. Poisonous dips, often arsenic based, were widely used and poisoned the oxpeckers, may die within 48 hours of eating arsenic coated ticks. Reintroduction of oxpeckers is gaining momentum. In areas where they are being distributed, farmers are encouraged to stop using pesticide dips — or at least the more toxic varieties — and let the birds do the job.

HINDUSTAN TIMES, LUCKNOW  
THURSDAY, DECEMBER 02, 2010

LOOK YOUNG FOR LONG

## 'Eat walnuts everyday and delay ageing'

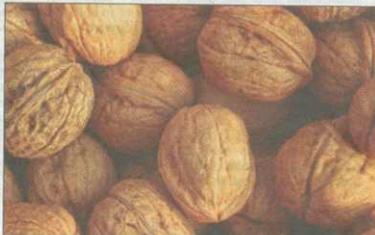
HT Correspondent  
hvarnas@hindustantimes.com

**VARANASI:** If you consume walnuts everyday, you can delay ageing.

Research conducted on rats at a New York-based institution has established that walnuts can significantly improve all critical parameters of ageing and even delay it. Critical ageing parameters on which improvement was registered during the research were memory, learning, anxiety and motor coordination.

A group led by Dr Abha Chauhan, Head of Developmental Neuroscience Lab, conducted the research on rats at the New York State Institute for Basic Research Development Disabilities, Staten Island, USA.

Talking to Hindustan Times on Wednesday, Chauhan said three categories of rats, genetically susceptible to Alzheimer's Disease, were tested, including the first category which was not fed with



THIS PIC IS FOR ILLUSTRATIVE PURPOSE ONLY.

walnuts, while the second and third category was fed with walnut in varying proportions.

Behavioural tests were later conducted to assess outcome of the research, which showed marked improvement on all four cognitive parameters.

"Findings of the research showed that walnuts can significantly influence all cognitive parameters, particularly motor coordination which controls the ability of aged lot

to maintain their body balance and grip," Chauhan maintained. Rats fed with walnuts showed remarkable improvement in learning, memory and anxiety levels than those on non-walnut diet.

Further, the rats were put on rotating rod revolving with speed. While those fed with non-walnut diet could not hold long at speedily rotating rod, both groups fed with walnut showed remarkable ability to hold long to the same speed-

ing rod, exhibiting that their motor coordination improved significantly.

Detailing about health benefits of walnuts, Chauhan said walnuts contain anti-inflammatory and anti-oxidant compounds, like Omega 3, which help bust oxidative stress among humans.

Oxidative stress generates excess of free radicals which cannot be neutralized and hence lead to cell damage causing diseases like cancer and ageing and accelerate process of ageing and associated physiological and cognitive changes. "The anti-oxidants and anti-inflammatory compounds help to deal with free radicals and thereby combat ageing and related problems like AD," Chauhan added.

Even the Food and Drug Authority in US has recommended intake of Walnuts to keep heart disease at bay, but this research becomes even more seminal in era of growing aged population.

**Dec 2, 2010:** Walnuts can significantly improve all critical parameters of ageing and even delay it, says research at Institute for Basic research Development Disabilities, Staten Island, USA

# Newspaper Clippings

## (ii) National News

### The Hindu, Delhi

# IUCN in the process of assessing freshwater biodiversity of India

The last such assessment was held in 1997

K.S. Sudhi

**KOCHI:** The freshwater biodiversity of the country is being assessed by the International Union for Conservation of Nature (IUCN). It is after a gap of 13 years that the freshwater biodiversity of the country, including fish, molluscs, insects and plants, is being assessed using the IUCN Red List Categories and Criteria. The last such assessment was held in 1997.

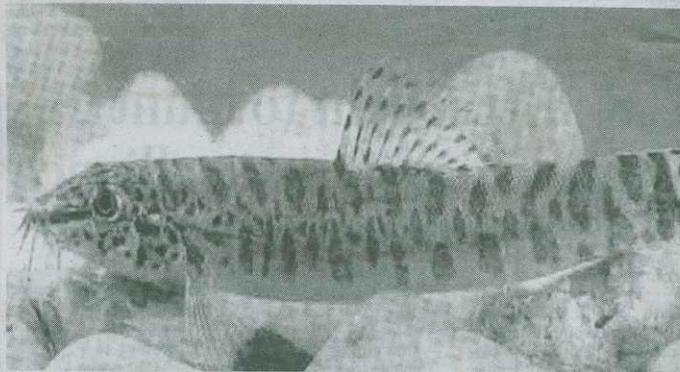
The assessment of the biodiversity of freshwater bodies in north India has been completed and the results updated in the Red List of the agency.

The list is considered a comprehensive inventory of the global conservation status of plant and animal species.

It has nine classifications namely extinct, extinct in the wild, critically endangered, endangered, vulnerable, near threatened, least concern, data deficient and not evaluated. The classification of species threatened with extinction – vulnerable, endangered and critically endangered – is carried out after assessing the biological factors related to extinction risk like the rate of decline of the population, population size, the area of geographic distribution, degree of population and distribution fragmentation.

It is estimated that only 13 of the 807 species of freshwater fish found in India have been assessed using the Red list criteria. Regarding the other species, only four insects, two species freshwater molluscs and one species of freshwater plant have so far been assessed.

The preliminary assessment of the freshwater biodiversity of the Western Ghats has been completed and the



*Nemacheilus botia*, a loach fish species, endemic to the Western Ghats. – PHOTO: SPECIAL ARRANGEMENT

list is being peer-reviewed by international experts, said Sanjay Molur, executive director, Zoo Outreach Organisation, Coimbatore, which partnered with the IUCN for the assessment.

The list will be released at a function in Thiruvananthapuram later this month, he said.

During the evaluation held at Coimbatore recently, the status of around 250 fish were assessed. Around 100 others species were left out as they were also found in the waterbodies in north India, said a fisheries expert who took part in the process.

According to initial reports, around 30 fish species

have been included in the endangered and 15 in critically endangered lists from the region. It was also reported that there was no reports on one fish species from the Tamil Nadu region of the Ghats for the last 20 years.

The Ghats region is facing increased threats due to economic development in the form of deforestation, construction of dams, sand mining, pollution and over-harvesting.

It is also estimated that systems in the region have lost more than 30 species over the last 60 years as a result of these activities, according to a document circulated among the experts.

The assessment also aims at determining the conservation status of key freshwater species within the hotspot and the associated river basins in southern India.

Information on threats to ecosystems and livelihood information was also part of the evaluation process.

The data will provide a vital resource for freshwater conservation and development planning within the region, said B. Madhusoodana Kurup, director, School of Industrial Fisheries, Cochin University of Science and Technology, who participated in the Coimbatore deliberations.

**Dec 6, 2010:** The freshwater biodiversity of India is being assessed by IUCN. This assessment includes fish, mollusks, insects and plants.

**Dec 13, 2010:** The CWLW in Himachal Pradesh has been authorized to allow hunting of simians along with wild boars and blue bulls to contain the simian menace in the state.

### The Hindu, Delhi

# Himachal farmers kill monkeys to save crop

**SHIMLA:** Ignoring criticism by animal lovers, farmers in Himachal Pradesh have killed over 50 monkeys in the past two days to save their crops, a member of a peasants' group said on Sunday.

The Kheti Bachao Sangharsh Samiti (KBSS), a farmers' outfit that took the initiative to motivate farmers take up guns against wild animals, said that "Operation Monkey" would continue despite criticism from animal protection groups.

"Since the start of drive on December 10 against the

menace of wild animals, especially the monkeys, we have reports that the farmers across the State have shot dead more than 50 monkeys," KBSS State convener Kuldeep Singh Tanwar said.

He said the monkeys were mainly killed in Shimla, Sirmaur and Hamirpur districts.

Contrary to Tanwar's claims, State Chief Wildlife Warden A.K. Gulati said: "We have reports that only one or two monkeys have been shot dead in the past few days."

"It's a routine killing as the government authorised the

farmers to selectively kill monkeys, wild boars and blue bulls in case they are destroying their crops," he said.

He said any farmer in the State could get the permission from the wildlife department to kill animals threatening the crop.

He said the farmers under the banner of KBSS have procured about 300 permits to kill animals.

"Permission has only been given to shoot animals in fields. Our range officers are monitoring the killings. There would be selective kill-

ing. The aim is to shoo away the animals from fields," Mr. Gulati added.

KBSS state secretary J.N. Sharma said the drive against the wild animal menace would continue till December 23.

Chief Minister Prem Kumar Dhumal informed the State Assembly last week that the monkey menace had reached alarming proportions and that the government had authorised the chief wildlife warden to allow the hunting of simians along with wild boars and blue bulls. - PTI

# Boom in harmful algal blooms

Study shows 15 per cent increase in toxic blooms over the last 12 years in Indian seas

Special Correspondent

**KOCHI:** Harmful algal blooms (HAB), lethal for human beings and marine ecosystems alike, are steadily increasing in intensity in the Indian waters. Researchers have found out that the toxic blooms had increased by around 15 per cent over the last 12 years in Indian seas.

There were 80 harmful blooms between 1998 and 2010 in the Indian seas against the 38 that took place between 1958 and 1997. The number of such blooms was just 12 between 1917 and 1957, according to scientists.

These findings form part of the research data that was generated by a team of marine life experts, including K.B. Padmakumar and V. N. Sanjeevan of the Centre for Marine Living Resources and Ecology, Kochi and N.R. Menon of the Cochin University of Science and Technology, as part of a national programme of the Centre.

### Monitoring

The researchers had monitored the harmful blooms and tried to identify the factors causing the bloom, dynamics of bloom formation, spread and its ecological consequences on marine ecosystems. The potentially toxic micro algae recorded from the Indian waters included Alexandrium, Gymnodinium, Dinophysis, Coolia monotis, Prorocentrum lima and



A *Noctiluca* algae bloom that was observed in the sea off Kochi during the 2008 monsoon. - PHOTO: SPECIAL ARRANGEMENT

*Pseudo-nitzschia*. Toxic blooms have been reported from over 30 countries, including India. The first recorded observation on algal blooms in India was in 1908.

### Lethal

The blooms turn lethal for human beings when they consume marine organisms that feed on such algae. Incidents of paralytic shell fish poisoning, following an algal bloom, was reported in 1981 from Tamil Nadu, Karnataka and Maharashtra. Three persons

lost their lives and 85 were hospitalised in Tamil Nadu. In a similar incident at Vizinjam in Kerala in 1997, seven persons died and around 500 were hospitalised. These people had consumed a mussel, which had fed on toxic algae. Another bloom that hit Kerala in 2004 resulted in nauseating smell emanating from the coastal waters extending from Kollam to Vizinjam. More than 200 persons suffered from nausea and breathlessness for short duration due to the foul smell. The bloom also result-

ed in massive death in the region, scientists said. Scientists had collected algal samples from 1,880 stations during the last 12 years as part of the study. They had also recorded the presence of 422 species of micro algae, including 35 harmful ones. *Noctiluca scintillans* was the dominant and frequently occurring algae during summer monsoon. While *Cochlodinium*, *Gymnodinium*, *Gonyaulax* and *Ceratium* bloomed frequently, blooming was an annual affair for *Trichodesmium*. However, the *Noctilu-*

- The first recorded observation on algal blooms in India was in 1908

- Arabian Sea experienced most number of blooms

ca bloomed at intervals.

It was the Arabian Sea that experienced the most number of blooms over the decades. The Bay of Bengal recorded blooms by and large during the northeast monsoon when cyclonic storms occurred in the region. Global warming and the resultant storminess could also influence the frequency of bloom formation in the Indian seas, scientists said.

### Causative factors

Upwelling, formation of mud banks, nutrient discharges from estuaries and run-off from the land during southwest and northeast monsoons cause some algae blooms in coastal waters.

The changing patterns of nutrient ratio of the coastal and the open ocean waters due to anthropogenic activities, increased aquaculture operations leading to enrichment of coastal waters, dispersal of toxic species through currents, storms, ship ballast waters and shell fish seeding activities were some of the factors triggering the blooms, they said.

Dec 20, 2010:

The Center for Marine Living Resources and Ecology, Kochi has found that HAB (Harmful Algal Blooms) have increased by 15% in the last 12 years in the Indian seas. The potentially toxic microalgae recorded include Alexandrium, gymnodinium, Dinophysis, Coolia monotis, Prorocentrum lima and Pseudo-nitzschia. The blooms turn lethal for humans when they consume marine organisms that feed on such algae.

## BREAKTHROUGH

# Defence lab grows world's costliest fungus

Samar Halarnkar

samar@hindustantimes.com

**NEW DELHI:** A rare, strange fungus — pushed across Asia as an anti-ageing elixir — that eats its hosts from the inside and is sometimes costlier than gold has been grown in a petri dish by defence scientists.

The first Indian breakthrough in artificially creating what is regarded as the world's costliest fungi was made at a Himalayan field station of the Defence Institute of Bio-Energy Research. The finest variety of the fungus will set you back



■ The finest variety of the fungus costs ₹27,000 in China. DANIEL WINKLER

₹27,000 for 10 gm in China, against ₹19,830 for a similar quantity of gold in India at today's prices.

Known in India as Yarsha

## FUNGUS COMPOUNDS HAVE BEEN FOUND BENEFICIAL FOR RHEUMATOID ARTHRITIS, IMPOTENCE AND CIRRHOSIS

Gamboo (Yursta gunbu in Tibet), the precious, parasitic fungus is an "important" anti-ageing medicine, said a paper in the latest issue of the journal *Current Science*, where the scientists reported their breakthrough.

The fungus' compounds have been found beneficial

for a range of ailments that include rheumatoid arthritis, impotence and cirrhosis. Traditional healers use the caterpillar fungus to treat chronic bronchitis, insomnia, pneumonia, tuberculosis, among other ailments.

The bio-energy institute's parent body is the country's largest scientific organisation, the Defence Research and Development Organisation, which has filed a patent for the artificial version of the killer fungus and transferred the technology to an unnamed private firm for commercial production. "This has opened new vis-

tas for pharmaceutical industries in India who (sic) used to import the raw material from China," Dr Ranjit Singh, lead researcher of the team that grew the fungus, said.

Known for growing inside its caterpillar host and eating it alive, *Ophiocordyceps sinensis*, to use its scientific name, is found in the frigid and arid alpine reaches of the Himalayas and the Tibetan plateau.

Though the Indian breakthrough is significant, no one has yet got the fruiting part of the fungus, the stromata, to grow in a laboratory.

Oct 22, 2010: The Defense Institute of Bio-Energy Research has grown the worlds costliest fungus Yarsha Gamboo (*Ophiocordyceps sinensis*) successfully in its lab. Costs about Rs. 19,000- 27,000 for 10 gms.

# Newspaper Clippings

## (iii) State News

Hindustan Times, Lucknow

# Bundelkhand may turn into a desert

**CAUSES** Improper use of land and water resources, sustained inflow of sand-laden winds from the Thar

HT Correspondent  
hvaranas@hindustantimes.com

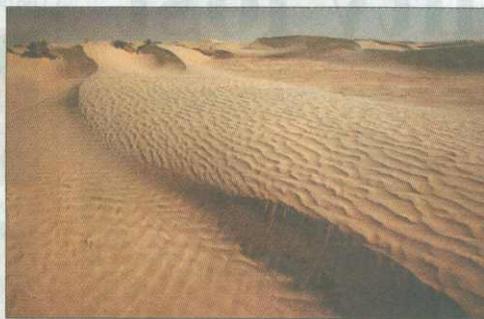
**VARANASI:** Alarm bells are ringing for the people of Bundelkhand region of Madhya Pradesh and UP, besides Rohilkhand region of UP, which could turn into deserts in times to come.

"Improper use of land and water resources, besides sustained inflow of sand-laden winds from Thar Desert in Rajasthan, could lead to desertification of Bundelkhand region of both MP and UP, besides Rohilkhand region of UP," head of regional centre (Kolkata) of National Bureau of Soil Survey & Land Use Planning, Dr SK Singh said on Tuesday.

"The water table in these regions is depleting fast due to improper usage. Besides, uneven rainfall has further worsened the situation," Singh said while talking to HT. Singh was in Varanasi to address the 43rd annual convention of Indian Society of Agricultural Chemists and National Conference on Soil Management, which concluded at the Institute of Agricultural Sciences, BHU on Tuesday.

Singh also showed GIS, GPS and remote sensing images to support his point. He further said, Agra and Tonk areas too were facing similar threats and needed urgent change in patterns of land and water usage.

"Only solution to this future threat is to cultivate crops, which



THIS PICTURE IS FOR ILLUSTRATIVE PURPOSE ONLY.

**The only solution to this future threat is to cultivate crops, which require less water so that ground water table is maintained**

DR SK SINGH

require less water so that ground water table is maintained. A green canopy in the concerned regions of MP and UP needs to be maintained. Animal-based land use plan is the best preventive solution to the threat, as cultivating plants that offer year long fodder to animals, will not only save water, but also ensure greenery in these region," Singh added.

He further said increasing

intensity of sand dunes in Rajasthan was another cause of concern for the neighbouring states.

Calling for greater and coherent use of GIS, GPS and remote sensing mechanism to mitigate the effects of climate change on agriculture, Singh said during 2010 average temperatures in India have risen between 0.1 to 0.3 degrees in summers and 0.3 degrees to 0.7 degrees in the winters. He said, "If the climate change continues like this, the average temperature in summer is likely to grow from 0.4 to 2.0 degrees and from 1.1 degrees to 4.5 degrees by 2070."

"During the last 53 years, global warming has led to extreme weather conditions and will lead to shifting of agricultural and climatic zones in times ahead," he added.

## FARMERS OF THE REGION TO GET POWER DISCOUNT

**LUCKNOW:** Farmers of Bundelkhand will get special discount on the cost to be incurred on a power connection for private tube wells, under the Bundelkhand Development Fund.

A farmer will have to pay nothing for construction of an electricity line up to 600 mt for a tube well. The UPPCL will bear all the expenses on poles, wires, transformers etc. The corporation will later be reimbursed the amount from the BDF. At present, farmers in Bundelkhand and elsewhere get subsidy for a tube well only on a line up to 300 mt.

"The topographical situation in eight districts of Bundelkhand often requires us to make a longer electricity line for a tube well," said a senior UPPCL official. The UPPCL, like many other departments, will be able to do work in 29 districts of Poorvanchal and Bundelkhand under the Poorvanchal and the Bundelkhand Development Funds. The PWD, the nodal body, is expected to release the work package based on the works to be done by various departments for 2010-11. Under both the funds, the departments will carry out work on proposals to be given by MLAs, projects being divided into two categories - those up to Rs 10 lakh and Rs 50 lakh. Packages for areas dominated by SC/ST population will be prepared separately. **HTC**

Nov 03, 2010: Dr. SK Singh of The National Bureau of Soil Survey & Land Use Planning emphasized on the depletion of water table in Bundelkhand and has attributed this to improper usage.

# Wandering elephant may be heading home

TIMES NEWS NETWORK

**Lucknow:** The wandering elephant from Chhattisgarh is on its way back. The jumbo reached the Kaimur wildlife sanctuary on Tuesday. Its current location has been traced near Kurhul ranges in Kaimur. This has given rise to speculations that the jumbo's three month sojourn in UP is drawing to a close. "It is tracing back the route which it had taken to enter UP," said divisional forest officer, Kaimur, Ashok Dixit. The foresters and WTI experts who are monitoring the movements of the elephant said the animal has diverted only 500 metres (+/-) from its original route. "The accuracy with which it is following its original route is surprising," said Dixit.

The elephant was first tracked in Renukoot division of UP. Since then it wandered through Sonbhadra, Kaimur, Mirzapur, Bhadohi and the

route along the Ganga. It, however, took a back turn from there and reached Kaimur. "It is a peaceful animal in search of a better habitat," said head of conflict management, WTI, Anil Kumar Singh. The experts have so far monitored the movements of the animal as a precautionary move. The elephant has not ravaged any property or hurt humans while moving through human-dominated areas. At some places though it destroyed some old hutments and ate away the crops.



"It is a cool animal and we never wanted to disturb it," said Singh. The elephant, whose age has been assessed to be about 30 years, has never got agitated due to human presence around it. Its behaviour has not called for any intervention like tranquilisation to tame it.

► **Nov 10, 2010:** An elephant that has wandered from Chattisgarh has wandered through Sonbhadra, Kaimur, Mirzapur, Bhadohi districts of UP and is now on its way back.

► **Nov 14, 2010:** During the past three decades, the country's explosive population growth, industrialization and rapid urbanization have put unyielding pressure on the river Ganges. While the level of coliform present in water should be below 50 MPN/100 ml for drinking purposes, less than 500 for bathing and below 5000 for agricultural use-the present level of coliform in Ganga at Garmukteshwar, Kannauj, Bithoor, Kanpur, Allahabad, Varanasi and Ghazipur has reached 6251, 5742, 3650, 74,080, 10,200, 1,14,000 and 29,455. Escherichia coli is a rod-shaped bacteria that lives in the lower intestines of warm-blooded mammals. It is necessary for the proper digestion of food but its presence in surface water indicates fecal contamination. E.coli belongs to a group of bacteria (some of which are harmful) known as fecal coliform bacteria. These bacteria may cause everything from mild gastrointestinal distress to prolonged problems including fever, vomiting, weight loss, typhoid and more. BOD (Biological Oxygen Demand), DO (Dissolved Oxygen) and other such physical characters are important but even more important is monitoring E.coli levels at least bimonthly.

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## राष्ट्रीय जागरण

# प्रदूषण से घुट रही है मोक्षदायिनी

रुमा सिन्हा

लखनऊ, 13 नवंबर : गंगा सफाई योजना के विफल होने का प्रमुख कारण यह है कि जिम्मेदार महकमों ने नदी की जल धारा में मौजूद खतरनाक जीवाणुओं को कभी महत्व ही नहीं दिया। स्थिति यह है कि गढ़मुक्तेश्वर से चारणसी तक गंगा की जलधारा में हानिकारक व मलजलित जीवाणु भारी संख्या में अनवरत बह रहे हैं।

जीवनदायिनी गंगा के बारे में यह पहलू उजागर किया है प्रदूषण नियंत्रण बोर्ड की ताजा रिपोर्ट ने। रिपोर्ट के अनुसार गढ़मुक्तेश्वर, कन्नौज, बिदूर, कानपुर, इलाहाबाद, वाराणसी व गाजीपुर सभी जगह नदी की जल धारा में कॉलीफॉर्म जीवाणुओं की संख्या लाखों में पाई गई है। भारतीय विधि विज्ञान अनुसंधान संस्थान के डॉ.के.पी.सिंह के अनुसार पानी में कॉलीफॉर्म जीवाणुओं की मौजूदगी इस बात का संकेत है कि जल में पैथोजेन अर्थात इटर्कोलाई' व 'इशिया कोलाई' जैसे रोग पैदा करने वाले घातक जीवाणु मौजूद हैं। वायव्य दिशा में बहने वाली गंगा प्रदूषण नियंत्रण योजना में जब भी जल गुणवत्ता का मूल्यांकन किया जाता है, तो बात रिपोर्ट 'बायोकेमिकल ऑक्सीजन डिमांड' (बीओडी), 'डिऑक्सीजन (डीओ), 'रंग व अन्य रासायनिक तत्वों' जैसे पर्यावरणीय मानकों की ही होती है और जीवाणुओं को महत्व नहीं दिया जाता है। जल विभाग के संयोजक अशुभालि शर्मा कहते हैं कि नदी प्रदूषण के लिए सीवेज उपचार सबसे अधिक जिम्मेदार है। वायव्य दिशा में बहने वाली गंगा प्रदूषण नियंत्रण योजना में जब भी जल गुणवत्ता का मूल्यांकन किया जाता है, तो बात रिपोर्ट 'बायोकेमिकल ऑक्सीजन डिमांड' (बीओडी), 'डिऑक्सीजन (डीओ), 'रंग व अन्य रासायनिक तत्वों' जैसे पर्यावरणीय मानकों की ही होती है और जीवाणुओं को महत्व नहीं दिया जाता है। जल विभाग के संयोजक अशुभालि शर्मा कहते हैं कि नदी प्रदूषण के लिए सीवेज उपचार सबसे अधिक जिम्मेदार है। वायव्य दिशा में बहने वाली गंगा प्रदूषण नियंत्रण योजना में जब भी जल गुणवत्ता का मूल्यांकन किया जाता है, तो बात रिपोर्ट 'बायोकेमिकल ऑक्सीजन डिमांड' (बीओडी), 'डिऑक्सीजन (डीओ), 'रंग व अन्य रासायनिक तत्वों' जैसे पर्यावरणीय मानकों की ही होती है और जीवाणुओं को महत्व नहीं दिया जाता है।

### गंगा में जीवाणुओं की भरमार

दावे खोखले

स्थल	कॉलीफॉर्म बैक्टीरिया (एच पी एम/100 मिली लीटर)	अन्य
गढ़मुक्तेश्वर	6251	3517
कन्नौज	5742	3650
बिदूर	3650	3900
कानपुर	74080	6300
इलाहाबाद	10200	13700
वाराणसी	114000	29455
गाजीपुर	29455	

अपने स्टीम पर 1 लाख 14 हजार के भयानक खर्च में मिले। साफ है कि प्रदूषण नियंत्रण बोर्ड के रिपोर्ट के अनुसार गंगा में जीवाणुओं की संख्या लाखों में पाई गई है।

नहीं हुई कोशिश

केन्द्रीय प्रदूषण नियंत्रण बोर्ड, राष्ट्रीय नदी संरक्षण निदेशालय व जल विभाग द्वारा शहरी से नदी में घुटने वाले सीवेज को ताला स्थिति जामने की कोशिश ही नहीं की गई। सीवेज शोधन को योजनाएं अनुमान पर ही बसा दी गईं। वर्ष 2001 की गंगाधारा के अनुसार गंगा व साहायक नदियों तथा निचले इलाकों में निरालसि होने वाला शहरी सीवेज 176 करोड़ लीटर प्रतिदिन आका गया है। सीवेज गंगा में 65 करोड़ लीटर तथा साहायक नदियों में 88 करोड़ लीटर सीवेज हर रोज पहुंचता है।

जीवाणुओं पर दवाएं बेअसर

भारतीय विधि विज्ञान अनुसंधान संस्थान

# Pulp, juice, jam & now – mangoply

## CISH SCIENTISTS develop sturdy plywood from mango stone

Rajeev Mullick

■ rajeev.mullick@hindustantimes.com

**LUCKNOW:** With a little thought and some effort, waste can yield astonishing eco-friendly options. This has been amply demonstrated by scientists of the Central Institute for Subtropical Horticulture (CISH), who have developed a new kind of plywood using mango stone (kernel) after extracting fibres from it to give it a smooth finish and smart look.

Since many trees have to be axed to meet wood requirements, it was felt that this plywood could be an alternative source of wood and green trees could be saved.

Since mango stone is very hard, the plywood too is sturdy. In fact, scientists claim it is acid, water and fire resistant, more durable than ordinary plywood.

This plywood can be used for making boxes for packaging fruits and vegetables because it is harder as com-



■ A multi-purpose box of mango stone plywood. HT PHOTO

pared to cardboard or hard-boxes used for packaging till now. In fact, it can be used for many purposes.

To begin with, the CISH scientists have fashioned ornament boxes out of the mango stone plywood, which caught the fancy of several dignitaries.

How did this idea of making plywood from mango stone evolve? H Ravishankar, director, CISH told HT: "Andhra Pradesh has many mango processing plants. Tonnes of mango waste got us into the job of using it for some other purpose. After much deliberation, our scientists thought of making plywood." **CONTD ON P12**

**Nov 20, 2010:** Scientists of CISH, Central Institute for Subtropical Horticulture have developed a new kind of plywood using mango stone after extracting fibers from it.

# Book a ticket to underwater paradise!

HT Correspondent

lkoreportersdesk@hindustantimes.com

**LUCKNOW:** There's good news for all aquarium fish lovers in the city. Now, you can not only see rare species, but also buy them.

These include expensive ornamental fish like Lohan, which costs Rs 70,000 per piece. Other varieties like Allegator Gar, Sting, Piranhas, Feng Shui, Large Pacu, Catla, Mahseer, Gold Fish, Ghost Fish, Fire Mouth, Malawi Cichlids, Malayan angels are also available at the Ganga Aquarium in Telibagh.

One of the finest aquariums in Asia, it was inaugurated on Friday by Dr S Ayappan, secretary, department of agricultural research and education



■ (Left) Fish at Ganga Aquarium and (right) Dr S Ayappan, secretary, department of agricultural research and education (DARE) inaugurated the aquarium at the NBFGR on Friday. AZAM HUSSAIN/HT PHOTOS

(DARE) at the National Bureau of Fish Genetic Resources (NBFGR) premises.

NBFGR director Dr JK Jena claimed that the aquarium is the biggest ornamental fish aquarium in the country. Built

on 2,500 square feet area, it houses 42 aquaria, out of which four are marine aquaria, where the ornamental sea fish are kept.

He said, "The entry to the aquarium would be through tickets, which would be costing

Rs 20 for adults and Rs 10 for children below 12 years of age."

In his address Dr Ayappan said, "The new aquarium would increase public awareness for fish diversity among the students."

He added, "Ornamental fish keeping is one of the most popular hobbies around the world. Popularity of aquarium fishes has resulted in aquarium fish trade going up globally. The trade, with a turnover of US\$ 5 Billion with annual growth rate of 8%, offers a lot of scope for development in this part of the world too."

Lucknow has a market of between Rs 80 lakh and 1 crore annually. There are around 60 shops selling ornamental fish in various parts of the city.

In India there are around 600 species of ornamental fish and around 150 of them can be seen in this aquarium.

We will increase number of species in the days to come, he added.

**Nov 20, 2010:** An aquarium was inaugurated at NBFGR, National Bureau of Fish Genetic Resources. It houses 42 aquaria, 4 of which are marine aquaria with ornamental sea fish

# Bird watchers look forward to a good time

ht FOLLOW-UP

HT Correspondent

lkoreportersdesk@hindustantimes.com

**LUCKNOW:** Noted ornithologists of the city have appreciated the first-ever dawn-to-dusk bird-watching event, organised by the Wild Bird Protection Society. In this, the bird watchers will spend entire day spotting and identifying birds in an effort to record as many species as possible.

Neeraj Srivastava, the man organising the event and district convenor of Bombay Natural History Society, says, "We have received tremendous response from bird-watchers and ornithologists, not only from Lucknow, but from the entire state. It is the first of its kind event organised for them."

He said, "Noted bird watchers like Sunjoy Monga, Amit Mishra, Dr A Rastogi, Dr Rajiv Chauhan, Sanjay Kumar (DM Sitapur)

have already confirmed their participation."

Noted ornithologist and wildlife lover Kaushalendra Singh welcomed such an event in the city. He said, "This event will help us in discovering the presence of some rare species which are not seen inside the city due to rapid urbanisation and loss of habitat for birds."

He said, "Birds like Indian Roller (

## WHERE WILL THE EVENT BE ORGANISED?

■ Thirteen spots have been identified where bird watchers would gather.

■ These include the NBRI, Zoo, Sharda Canal, ITRC and several farmhouses on Sitapur and Kanpur road.

Neelkanth), Hoopoe (Hud Hud), mynah, gauraiyya and now even crows, are almost non-existent inside city limits. We can bring these birds back to cities because they balance our envi-

ronment."

Another ornithologist Suresh Chaudhury said, "Yes, this is a good step towards protection of useful species of birds and the preparation of bird data, which is currently not up to the mark."



**Dec 02, 2010:** Lucknow city organized its first ever dawn to dusk bird watching event.



Ongoing projects were reviewed on 09.10.10. The Principal investigators (Dr. D.C.Saini and Dr. Neelam Pathak) along with Co-investigator.

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Phone : 0522-2306491, 4006746  
Email: upstatebiodiversityboard@gmail.com  
Url: <http://www.upsbdb.org>

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