

BIODIV News

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Many colorful crusts on a rock

(Photo by Lary St. Clair)

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Editorial

Esteemed Readers,

Lichens are a group of interesting organisms. Lichens are important indicators of pollution because they readily absorb heavy metals into their tissues, mopping up elements like cadmium and lead from the atmosphere. Thus lichens are important as they help to diagnose the health of the planet. Out of about 20,000 species of lichens found in the world about 2368 lichens (11.8%) are found in India. Till recently only 42 species of lichens were reported and recorded from Uttar Pradesh.

With an intention of creating a base line data of lichen species in Uttar Pradesh a study was supported by the U.P. State Biodiversity Board. This study was done by Dr. Sanjeev Nayaka and Dr. D. K. Upreti of National Botanical Research Institute. This study has identified about 135 species of lichens from Uttar Pradesh. Thus today about 5.7% of the total lichen species found in India have been recorded from Uttar Pradesh. About 90 new additions of lichens species have been added to the already existing list of 42 species of lichens to which some deletions and additions have been made. An article on the study has been included in this issue.

In addition, the World Wetland Day, World Sparrow Day and International Day for Forests were celebrated in this quarter. We hope you find this issue interesting and welcome any suggestions and comments to improve the Bio div news. Wishing all of you a very happy 2013!

– Editor

1. Lichen growth on some monuments and historical buildings of Uttar Pradesh

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What are lichens?

Lichens are basically fungus, living together with algae or cyanobacteria in a symbiotic relationship. They appear as whitish grey, greenish grey, brown, dark brown patches on tree bark, rocks, monuments and old buildings.

Lichens as pioneers of succession

In the course of biological succession on any bare substratum the organisms that first appear are bacteria, algae, fungi and lichens. The lichens being more conspicuous of all are easily recognized. These pioneer plant communities creates conditions that are conducive to the establishment and growth of other plant groups such as bryophytes, ferns and higher plants. The vegetation cover then provides shelter to a variety of animal forms, like small arthropods, their larvae, nematodes, tiny earthworms and molluscs.

Lichens are hardy plants; they grow and thrive under conditions which other plants find unfavourable for their survival. Their slow rate of metabolism results in their sluggish growth. This phenomenon reduces their water and nutritional needs to the minimum, and as a consequence lichens are able to withstand xeric conditions for prolonged periods. They can also tolerate extreme range of temperature and light. These properties of lichen make them a successful organism to colonize on various substratums in varied climatic conditions and enjoy a world wide distribution. They occur on every conceivable natural habitat such as rock, bark, wood, soil and even on green leaves. Among the man made substrate bare, exposed monuments and building surfaces provide lichen an ideal, competition free situations for invasion and establishment as pioneers of the bio-succession.

Lichen activity on monuments

Growth of lichens on monuments and building are a common sight throughout the world and is variously interpreted. Some show greater emphasis to the protective role of lichens while others consider them as harmful agents. The multi-coloured mosaic of lichens on monument surface has an aesthetic appeal to the viewers and it also forms a protective cover against external weathering agents. Sometimes the lichen cover provides a protective plastering to the substrata. After removal of lichens, rock surface under lichen thallus may be more prone to abiotic and biotic factors such as wind, moisture and insects. The growth of lichens on monuments also acts as indicators of environmental conditions at that place; more the diversity and abundance healthier is the environment.

On the other hand lichens cause damage to the rock and monument surface on which they grow. Initially they stick, then penetrate, finally disintegrate and digest the substratum on which they grow and this process is called as **Biodetrification**. The fungal hyphae of the lichens and the rhizines penetrate in to the minute pore, crack and fissures present on the monument surface. The lichen thallus along with their hyphae and rhizines exerts pressure on the rock due to increase in biomass during growth as well as contraction and expansion mechanism. The lichens are poikilohydric (= can not actively regulate their water contents), but their thallus is highly hygroscopic and have an ability to absorb moisture from

the atmosphere. Their thallus expands when wet and contracts when water is lost. The contraction and expansion takes place several times or at least twice a day. In the morning and evening when moisture is available in the form of dew, mist or humidity lichen thallus swells and during the mid-day under the hot sun they loose water and shrink. The pressure thus exerted on the rock surface, crevices and pores results in the disintegration of rocks in to small particles of soil. Such a process of bioteriation is called as **‘Physical or Biogeophysical Weathering’**.

The lichens produce several secondary compounds during the metabolic activity and some of them have ability to corrode the rock surface. Even the carbon dioxide produced during their respiration gets transformed in to carbonic acid within the thallus which acts as a potent weathering agent. Such a weathering of monuments or rock is called **‘Chemical Weathering’** or **‘Chelation’**. The process of soil formation either physical or chemical method is called as **‘Pedogenesis’**. Among the three main kinds of lichens, the crustose forms are more harmful to the monuments as they are closely attached to the substratum by means of their medullary hyphae and are not easily separable from the substrate.

Review of biodeterioration study by lichens

The lichen growing on the monuments and historical building have drawn the attention of researcher world wide. Clair and Seaward (2004) discussed the progress and problem of biodeterioration study on rocky cultural heritages. Their edited book entitled **“Bioteriation of stone surfaces”** was contributed by several studies carried out throughout the world.

India is well known for its cultural diversity which in turn harbors rich cultural heritages. The palaces, forts, temples, mosque, churches and ancient historical buildings provide an additional habitat for the dwellings of lichens. The diversity and growth of the lichens is also dependent on the architectural pattern and construction material of the monument. Most of the north Indian monuments have tapering dome at the top while south Indian monuments have a flat top. In addition to the design, the sculptures and their orientations provide several micro niches for the growth of lichens. In India Gayathri (1990) was first to study the effect of lichens on granite statues of India. There after lichen growth over monuments were recorded few states of India. Singh and Dhawan (1991) studied the qualitative assessment of damage caused by three lichens species to a 16th century stone monument, Yognarsimha Swami temple, Baggavalli, Karnataka. Chatterjee *et al.* (1996) enumerated 18 genera and 40 species of lichens from some Indian monuments in Karnataka and Orissa. Upreti (2002) studied the lichen flora of Khajuraho group of temples and rocks of near by areas and listed the occurrence of 10 taxa of lichens. Singh and Sinha (1993) provided a detail account of the corrosion of natural and monument stones with special reference to lichens. They also listed kinds of rock damages and responsible lichen chemicals. Upreti *et al.* (2004) studied the lichen activity over rock shelters of Bhimbetka world heritage zone, Madhya Pradesh. A total of 14 species of lichens growing over rocks in different localities of the heritage zones were listed together with their thallus character and chemical compounds. Bajpai (2008) studied in the lichens growing over some monuments and rock in seven districts of Madhya Pradesh, which resulted in 95 species. Saxena *et al.* (2004) provided a detailed account of lichens growing on different artifacts in the Indian subcontinent. Some interesting distributional and ecological patterns of lichens growing on historical monuments and building were also presented.

Lichen growth on monuments and historical buildings of Uttar Pradesh

Uttar Pradesh has a wide variety of historical monuments and buildings. Some of the historical buildings in the region are looked after by the government agencies like Archaeological Survey of India (ASI). Singh and Upreti (1991) provided a detail account of lichens growing on different monuments of

the Lucknow City and listed the occurrence of eleven species. Although there are some lichens collected earlier from some monuments of Sitapur districts, but they are so far left unreported. Recently, one of us (A. Ayub) collected large number of lichens from 20 monuments from six districts (Agra, Allahabad, Faizabad, Kanpur, Lucknow, Varanasi) of the state.

Detailed study on the lichen specimens collected from monuments and historical buildings of Uttar Pradesh resulted in **13 species of lichens belonging to six genera** and six families (Table 2). Out of seven districts the monuments of Lucknow districts were extensively studied as they were easily accessible. The lichens from some of the monuments could not been collected as they were highly protected. In such cases lichens were collected from their surroundings from similar substrata. The construction material in almost all the monuments and buildings surveyed comprised of Lakhori bricks plastered with lime.

Table 1. List of monuments and lichen species growing over them

Location/Monument	Species/Lichen	Substratum	Location/Monument	Species/Lichen	Substratum
Agra				<i>Peltula patellata</i>	Brick
Tomb of Etemad-ud-daula (1)	<i>Phylliscum indicum</i>	Lime plaster		<i>Phylliscum indicum</i>	Lime plaster
Turkish-Bath (2)	<i>Endocarpon rosettum</i>	Lime plaster	Old temple (Bithoor) (8, 10)	<i>Peltula patellata</i>	Lime plaster
(near Buland Darwaza)	<i>Endocarpon subrosettum</i>	Lime plaster		<i>Phylliscum indicum</i>	Lime plaster
	<i>Peltula euploca</i>	Lime plaster	Lucknow		
	<i>Peltula obscurans</i>	Lime plaster	Musa-Bagh	<i>Endocarpon nanum</i>	Lime stone
	<i>Phylliscum indicum</i>	Lime plaster		<i>Endocarpon pallidum</i>	Brick
Kaanch-Mahal (near Sikandara)	<i>Peltula obscurans</i>	Red Sand Stone		<i>Endocarpon pusillum</i>	Lime stone
	<i>Phylliscum indicum</i>	Red Sand Stone	Sikander-Bagh (13, 15)	<i>Phylliscum indicum</i>	Lime stone
				<i>Endocarpon pusillum</i>	Lime plaster
Allahabad				<i>Peltula euploca</i>	Lime plaster
Akbar's Fort (3)	<i>Endocarpon rosettum</i>	Stone		<i>Peltula obscurans</i>	Lime plaster
	<i>Phylliscum indicum</i>	Stone	Residency (10, 12)	<i>Endocarpon pallidum</i>	Lime plaster
Khusro-Bagh (4, 17)	<i>Endocarpon rosettum</i>	Lime plaster		<i>Endocarpon pusillum</i>	Lime plaster
	<i>Phylliscum indicum</i>	Lime plaster		<i>Endocarpon rosettum</i>	Lime plaster
Faizabad				<i>Endocarpon nanum</i>	Lime plaster
Gulab-Bari (6)	<i>Anisomeridium calcicolum</i>	Lime plaster	Dilkusha (9)	<i>Phylliscum indicum</i>	Lime plaster
	<i>Endocarpon rosettum</i>	Lime plaster		<i>Peltula patellata</i>	Lime plaster
	<i>Phylliscum indicum</i>	Lime plaster	Imambara (11)	<i>Phylliscum indicum</i>	Lime plaster
Bahu Begum Maqbara (5)	<i>Endocarpon rosettum</i>	Lime Plaster		<i>Endocarpon pusillum</i>	Lime plaster
	<i>Endocarpon subrosettum</i>	Lime Plaster		<i>Endocarpon nigrozonatum</i>	Lime plaster
	<i>Phylliscum indicum</i>	Lime Plaster	Sitapur		
	<i>Lecanora coriensis</i>	Lime Plaster	Raja Saheb's Qila	<i>Bacidia inundata</i>	Brick
Kanpur			Varanasi		
Fort of Nana Saheb (7) (Bithoor)	<i>Endocarpon rosettum</i>	Lime plaster, Brick	Banaras Hindu University plaster (14)	<i>Endocarpon rosettum</i>	Cement
			Ram Nagar Fort	<i>Endocarpon rosettum</i>	Lime plaster
				<i>Peltula patellata</i>	Lime plaster
				<i>Phylliscum indicum</i>	Lime plaster



1. A structure nearby Etemad-ud-daula Tomb at Agra with lichen growth



2. Turkish Bath dome near Buland Darwaza at Agra.



Akbar's Fort – on the bank of River Ganga Allahabad



4. Khusro Tomb (Allahabad) – tapering top dome with luxuriant lichen growth



5. Mausoleum of Bahu-Begum (Faizabad) – Dome and horizontal parapet with lichen growth



6. Gulab-Bari-Mausoleum (Faizabad) – Lichen growth on dome and roof



7. Bithoor – Nana Sahib Fort (Kanpur) – lichen growth on lime plaster carvings



8. Bithoor – Nana Sahib Fort (Kanpur) near Kanpur city



9. Asafi mosque (Imamabara, Lucknow) – Parapet showing lichen growth on vertical and horizontal face



10. Bithoor (Kanpur) – An old temple with luxuriant lichen growth on horizontal wall at base of dome



11. Residency ruins (Lucknow) – devoid of lime plaster



12. Residency ruins (Lucknow) – lichen growth on lime plaster



13. Sikandarbagh Gate (Lucknow) – Lichen growth on domes



14. Banaras Hindu University (Varanasi) – An old building with scarce growth of lichen on horizontal parapet



15. Sikandarbagh (Lucknow) – Moist horizontal parapet and dome



16. Ramnagar Fort Gate (Varanasi) – walls with lime plaster show luxuriant growth of lichen



17. Endocarpon, Phyllicium species growing on lime plaster wall of Khusro – Bagh (Allahabad)



18. Phyllicium indicum – a common lichen on vertical and horizontal face of wall in Bahu-Begum Maqbara (Faizabad)

The Gulab Bari monument at (6) Faizabad district exhibited the occurrence of two rare and exclusive lichen taxa on vertical lime plaster wall in quite moist habitat. One of them was a pyrenocarpous (*Perithecia* bearing) species which was described as new species *Anisomeridium calcicolum* Upreti & Nayaka (Upreti & Nayaka 2006). The other one is *Lecanora coriensis* (Hue.) J.R. Laundon, the only leprose (powdery form) lichen encountered in the whole study. The lichen flora on the monuments is dominated by squamulose lichens (minute leaf like) represented by 11 species, while *Anisomeridium calcicolum* and *Bacidia inundata* are crustose (crust forming), and *Lecanora coriensis* was the leprose lichen. *Endocarpon* was the dominant genus on the monuments with six species. The lichen species encountered in the study area are mostly common in occurrence while for *Anisomeridium calcicolum*, *Bacidia inundata* and *Lecanora coriensis* are less frequently encountered can be categorized as rare. The distributions of lichens on different monuments are given in table 1.

Among the monuments Residency at Lucknow and Turkish Bath near Buland Darwaza of Agra harbour maximum number of lichens represented by 5 each species. Bahu Begum Maqbara (Faizabad), Musa-Bagh, Sikander-Bagh (Lucknow) are other monuments with luxuriant growth of lichens. The deserted part of Nana Saheb Fort and an old temple at Kanpur hosted luxuriant growth of lichens due to their non-maintenance, however the diversity of the lichens were restricted to species *Endocarpon rosettum*, *Peltula patellata*, and *Phyllicium indicum*.

The architectural patterns of the Uttar Pradesh monuments provide diverse microhabitats for the growth of lichens. The plinth or platform forms the lowest strata, the middle strata is made of vertical walls while the horizontal parapet and roof make the third strata with topmost tapering domes. The lichen *Peltula patellata* prefers to grow in the middle strata on the horizontal parapets mostly on the slabs above windows or parapets of roof in moist places. *Phyllicium indicum* grows on cement, lime plaster and even on moist Lakhauri bricks both on horizontal as well as vertical face forming large matt or black patches. Mostly the *Phyllicium* colonies growing on vertical face, experience xeric condition

due to exposure to sun and wind are usually sterile while the ones which colonize in moist horizontal cornices develop fruiting bodies. *Phyllicum* is able to colonize in all the three strata of a monument either made up of brick (Lakhori), cement or of lime plaster. The *Endocarpon* species mostly prefers to grow on horizontal parapets both with lime plastered or having Lakhori bricks. Their squamules form thick matt like growth on the substratum. Mostly the *Peltula* species grows in association with *Endocarpon*.

Effect of lichen growth on monuments

Out of the 14 species of lichens only *Lecanora coriensis* produces lichen acids which have chelating property (chemical weathering), while all other lichens are highly responsible for physical weathering of monuments. The lichen acids present in *Lecanora coriensis* lichen are usnic acid and zeorin. Presence of the donor groups (-OH, -COOH, and -CHO) in usnic acid cause metal or cation complexing activity resulting in chemical weathering of rocks. *Lecanora coriensis* has a granular, leprose (powdery) thallus having thick medulla. As the thallus of the lichens directly lies over the rock surface, chances of chemical weathering by it is in many fold as compared to other species not producing chelating substances. The crustose lichens (*Anisomeridium calcicolum*, *Bacidia inundata*) are devoid of rhizinae hence they are attached closely to their substratum with the whole of the lower side forming a crust. Within the squamulose lichens the species of *Endocarpon* have mostly rhizinate growth for attachment on their underside while *Peltula* forms a peltate thallus attached to the substratum through a central mass of hyphae. In case of *Phyllicum* the rhizinae are absent and the same role is performed by hyphae present on the lower cortex of the thallus. Most of the squamulose lichen taxa reported from the monuments of Uttar Pradesh have thick medullary region which help in retain water for longer periods. The lime plaster, brick, red sand stone of the monument are usually calcareous and porous enabling the easy penetration of lichen hyphae and rhizines. As discussed earlier contraction and expansion of the lichen thallus, hyphae and rhizines due to loss and gain of moisture exerts pressure on the substratum, break them in to smaller particles. Chipping of minute monument fragments in and around the lichen thalli can be seen as evidence for biogeophysical weathering.

Environmental pollution plays important role in eliminating large number of lichen species in an area, as they cannot tolerate the acidic gases being very sensitive to them. Thus in areas with high acidic gases the lichen has no chance to invade monuments. A few pollution resistant species that perhaps, could not compete with other lichens in earlier unpolluted atmospheric condition find a competition free field to thrive in polluted area. Most of the species of *Phyllicum*, *Endocarpon* and *Peltula* are calcicolous (lime loving), grow on alkaline substrate and have an inbuilt tolerance to grow in an environment with acidic gases.

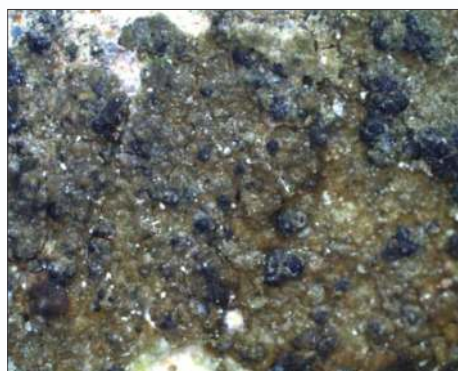
Eradication of lichens from monuments

The lichen growth on monuments of Uttar Pradesh apart from enhancing the biodeterioration possibilities they also give a shabby look. Except for *Lecanora coriensis* all the other lichens encountered are brown, dark-brown or black in colour. The lichens also encourages growth of other micro-organisms along with them forming thick biofilm. Such a biofilm do not give any aesthetic appeal to the monuments and hence are frequently removed from the monuments and building. To protect the monuments from different biodeteriogens the conventional methods utilizing liquid ammonia for soaking purpose and sodium pentachlorophenate or zinc silicofluoride for spray still seems to be the best practice. Nonetheless, there lies scope for finding out equally good or even better alternatives in light of large number of pesticides available in the market. Even in country like India, easily

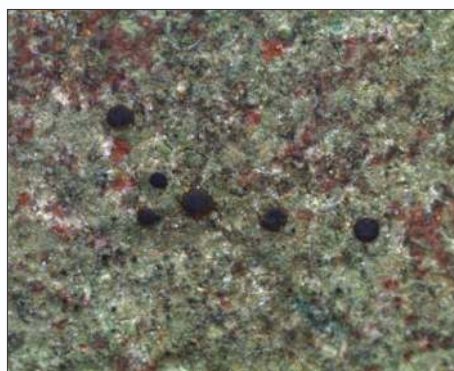
biodegradable plant products may be given a chance on this regard.

Table 1. List of species of Lichens collected from monuments of Uttar Pradesh

1.	<i>Anisomeridium calcicolum</i> Upreti & Nayaka (19)	Crustose	Monoblastiaceae	Rare
2.	<i>Bacidia inundata</i> (Fr.) Körber (20)	Crustose	Ramalinaceae	Rare
3.	<i>Endocarpon nanum</i> A. Singh & Upreti (21)	Squamulose	Verrucariaceae	Common
4.	<i>E. nigrozonatum</i> A. Singh & Upreti (22)	Squamulose	Verrucariaceae	Common
5.	<i>E. pallidum</i> Ach. (23)	Squamulose	Verrucariaceae	Common
6.	<i>E. pusillum</i> Hedw. (24)	Squamulose	Verrucariaceae	Common
7.	<i>E. rosettum</i> A. Singh & Upreti (25)	Squamulose	Verrucariaceae	Common
8.	<i>E. subrosettum</i> A. Singh & Upreti (26)	Squamulose	Verrucariaceae	Common
9.	<i>Lecanora coriensis</i> (Hue.) J.R. Laundon (27)	Leprose	Lecanoraceae	Rare
10.	<i>Peltula euploca</i> (Ach.) Poelt ex Pisut (28)	Squamulose	Peltulaceae	Common
11.	<i>P. obscurans</i> (Nyl.) Gyelink (29)	Squamulose	Peltulaceae	Rare
12.	<i>P. patellata</i> (Bagl.) A. Singh & Upreti (30)	Squamulose	Peltulaceae	Common
13.	<i>Phylliscum indicum</i> Upreti (31)	Squamulose	Lichinaceae	Common



19. *Anisomeridium calcicolum* Upreti & Nayaka



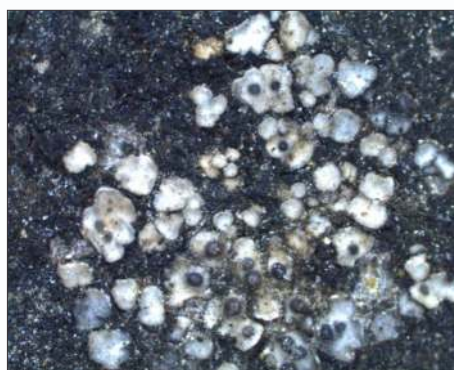
20. *Bacidia inundata* (Fr.) Körber



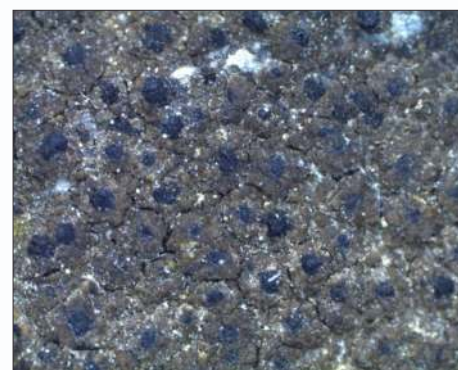
21. *Endocarpon nanum* A. Singh & Upreti



22. *Endocarpon nigrozonatum*
A. Singh & Upreti



23. *Endocarpon pallidum* Ach.



24. *Endocarpon pusillum* Hedw.



25. *Endocapron rosettum* A. Singh & Upreti



26. *Endocarpon subrosettum* A. Singh & Upreti



27. *Lecanora coriensis* (Hue.) J.R. Laundon



28. *Peltula euploca* (Ach.) Poelt ex Pisut



29. *Peltula obscurans* (Nyl.) Gyelink



30. *Peltula patellata* (Bagl.) A. Singh & Upreti



31. *Phyliscum indicum* Upreti

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2- Biodiversity Management Committee (BMC) & People's Biodiversity Register (PBR)

1- Biodiversity Management Committee (BMC):

The following two Biodiversity Management Committees (BMCs) have been constituted by the UPSBB during this period (January- March 2013):

S. No.	Agro Climatic Zone	Name of District	Name of Block	Name of Village	Date of BMC formation
i)	Central Plain	Sitapur	Khairabad	Naipalapur	16-01-2013
ii)	North Eastern Plain	Gorakhpur	Chargawan	Harsewakpur No. 2	26-02-2013

2- People's Biodiversity Register (PBR):

During this period the following two People's Biodiversity Registers (PBRs) have been made:

i) Gram Sabha: Baihar, Distt. - Chitrakoot:

The Biodiversity Management Committee (BMC) of this village was formed on 19-01-2011. Extensive survey was done during formation of the People's Biodiversity Register (PBR) of this village. PBR of the village was validated on 23-01-2013 by the BMC. Overall **295 species** were recorded in this village; details of the same are given below in the table:

Biodiversity of Baihar Village, Chitrakoot

Crop Plants	42
Pests of Crops	08
Ornamental Plants	10
Wild Aquatic Plant Species of Importance	00
Aquatic Biodiversity	00
Other Plants in the Wild	23
Wild Animals (Mammals, Birds, Reptiles, Amphibian, Insects, others)	68
Trees, Shrubs, Herbs, Tubers, Grasses, Climbers	45
Medicinal Plants	06
Weeds	22
Timber Plants	09
Wild Plant Species of Importance	12
Wild relatives of Crops	01
Fodder Crop	01
Fumigate / Chewing Plants	01
Domesticated Animals	07
Culture Fisheries	00
Wild Plants of Medicinal Importance	25
Fruit Plants	13

People's Biodiversity Register जन जैवविविधता रजिस्टर

Gram Sabha: Baihar, Distt. - Chitrakoot (U.P.)
ग्राम सभा : बैहार, जनपद-चित्रकूट (उ०प्र०)



U.P. State Biodiversity Board

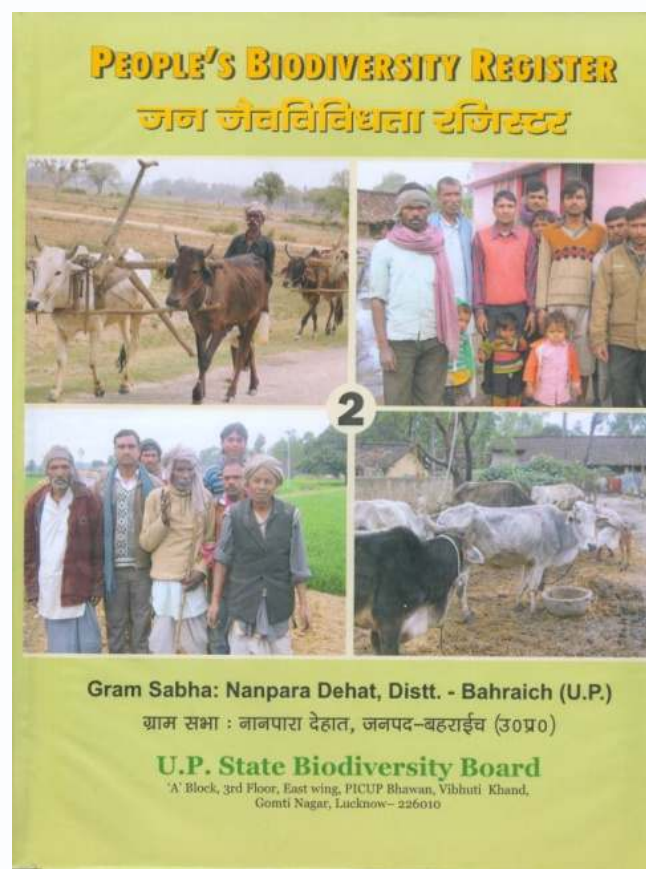
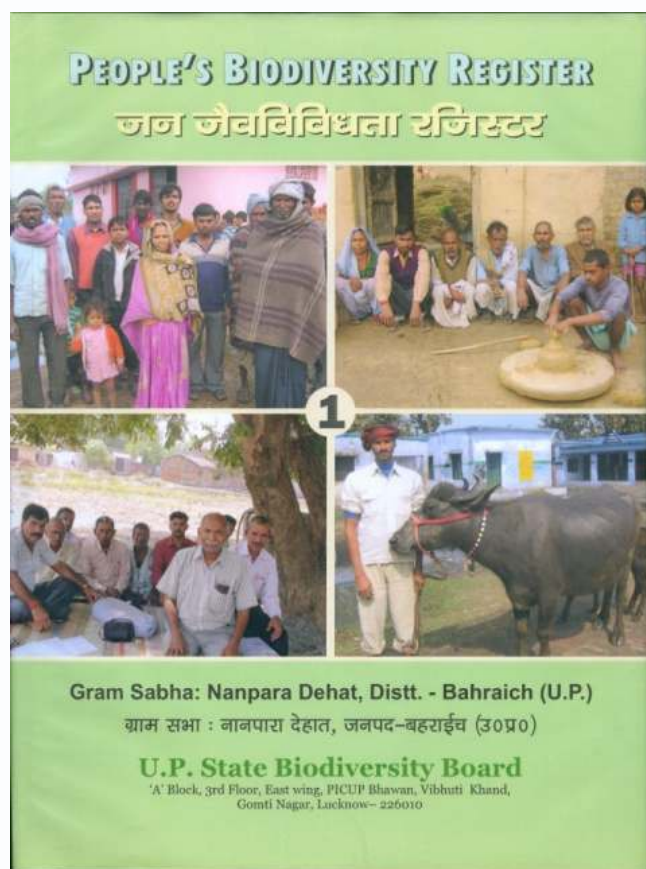
*A' Block, 3rd Floor, East wing, PICUP Bhawan, Vibhuti Khand,
Gomti Nagar, Lucknow- 226010

ii) Gram Sabha: Nanpara Dehat, Distt. - Bahraich:

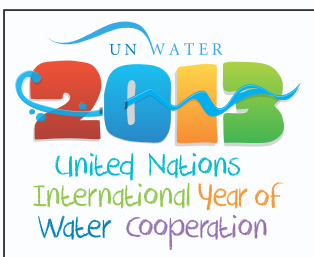
The Biodiversity Management Committee (BMC) of this village was constituted on 07-12-2010. Interactions/meetings with the local peoples, survey of the village and several visits was organized during formation of the People's Biodiversity Register (PBR) of this village. The PBR of Nanpara Dehat is available in two volumes (Vol. - 1 & Vol.-2). The BMC of the village validated the PBR on 12-03-2013. Altogether **343 species** were recorded in this village; details of the same are given below in the table:

Biodiversity of Nanpara Dehat, Bahraich

Crop Plants	47	Wild Plant Species of Importance	15
Pests of Crops	17	Wild relatives of Crops	06
Ornamental Plants	18	Fodder Crop	03
Wild Aquatic Plant Species of Importance	04	Fumigate / Chewing Plants	00
Aquatic Biodiversity	08	Domesticated Animals	13
Other Plants in the Wild	19	Culture Fisheries	16
Wild Animals (Mammals, Birds, Reptiles, Amphibian, Insects, others)	69	Wild Plants of Medicinal Importance	28
Medicinal Plants	13	Fruit Plants	24
Timber Plants	15	Weeds	28



3. World Wetlands Day, 2013



Pamphlet



Brochure

The World Wetland Day was celebrated on 2nd February, 2013 by U.P. State Biodiversity Board along with active participation from Department of Zoology, University of Lucknow and Department of Applied Animal Sciences, B.B.Ambedkar University.

India is a signatory to the Convention on Wetlands signed on 2nd February 1971. So far 164 countries have signed the convention and the total numbers of wetlands of International importance identified so far are 2083. The objective of celebrating the wetlands day was to undertake action aimed at raising public awareness of wetland values and benefits in general.



Rangoli made by students of World Wetland Day



The programme started with a flagging off surveying teams by Pratibha Singh (IFS), Deputy Conservator of Forests, U.P. State Biodiversity Board Lucknow from the campus of University of Lucknow.

The awareness teams visited the following areas in and around Lucknow district:

Teams for field studies of Wetland Areas

Gp	Name of the Area	Wetlands Visited	Team Leaders & Members	Affiliation
A	Nawabganj Bird Sanctuary, Unnao	<ul style="list-style-type: none"> Near Amausi airport in front of Sainik School Nawabganj Bird Sanctuary, Unnao Purain in Bichhiya block, Unnao (unconserved). Dahi Pond in Bichhiya block, Unnao (unconserved) Bhadosa Lake in Bichhiya block, Unnao (Unconserved). Rain in Bichhiya block, Unnao (unconserved) 	Dr. Amita Kanaujia Sachin Chaudhary Akhilesh Kumar Shivangi Mishra Savita Pandey Sourabh Chakraverty	University of Lucknow Harita Tech Service Ltd (TVS) Group University of Lucknow University of Lucknow University of Lucknow NIIT Lucknow
B	S.G.P.G.I.		Pallavi Gupta Shail Tiwari	Shahjahanpur, U.P. Lucknow
C	Mohanlalganj	<ul style="list-style-type: none"> Unnamed in Telibagh-man made Behind Deen Dayal Park-man made Mohanlal Ganj-man made Parewa-Natural Nardahi Gunhari-Natural 	Sonika Kushwaha Riddhi Pandey Charu Kaushik Nafees Alam	University of Lucknow University of Lucknow University of Lucknow Lucknow
D	Gomti Nagar	<ul style="list-style-type: none"> Wetland Behind Ambedkar Park, Gominagar. Katotha Jheel, Near Amity International School, Gominagar. 	Vishwajeet Kanaujia Akshay Tripathi Amber Rastogi	Vishwakarma Maritime Institute, Pune. Vishwakarma Maritime Institute, Pune. National P.G. College, Lucknow
E	Bakshi Ka Talab	<ul style="list-style-type: none"> Behda pond, Nagar chongwa Chandnapur, Mahona Unai Village ,Haldarpur Teekarhaar, Barabanki 	Adesh Kumar Aditya Tiwari Dayanidhi Gupta Satwik Singh	University of Lucknow Horner School, Lucknow Lucknow Seth M. R. Jaipuria School, Lucknow

Interaction with the villagers and school children during the visit



Discussion amongst the villagers



Team interacting with the villagers



Awareness amongst the students



Awareness in Village (distributing pamphlets)



Awareness programme in School



Interaction with students

Followed by the field visits, a power point presentation was also held on 07-02-2012 at U P State Biodiversity Board's Conference Hall. Teams that visited the field shared their experiences. Certificates of participation were awarded to the participants by Pratibha Singh (IFS), Deputy Conservator of Forests, U.P. State Biodiversity Board, Lucknow.



Students presenting power point presentations

A power point presentation competition on "Biodiversity in Wetlands "was organized at Department of Applied Animal Sciences, B.B. Ambedkar University. About 150 participants from the Department of Environmental Biology/ Applied Plant Sciences/ Environmental Sciences/ Biotechnology/ Mass communication and Journalism/ Applied Physics/ Applied Chemistry/ Human Development and Families Studies and MBA students took part in the competition.

A total of 256 students, research scholars and faculty members took part in the World Wetland Day Celebration. Smt. Pratibha Singh (DCF, UPSBB) delivered a lecture on "Wetlands and their importance in Biodiversity Conservation".

Dr. V. Elangovan (Coordinator, DAAS) talked about aquatic biodiversity and Dr. Ram Jee Srivastava (Senior Scientists, UPSBB) were the judges for the competition. Prizes along with certificates were distributed to the winners and participants. Mr. Amar Jyoti Das, Department of Environmental Microbiology, Ms. Sneha Verma, Department of Applied Animal Sciences and Ms. Dilpreet Kaur, Department of Applied Animal Sciences won the first, second and third prizes, respectively. Mr. Smriti Mehrotra, Department of Environmental Sciences and Ms. Harshita Pandey, Department of Applied Animal Sciences won the consolation prize.



Amar Jyoti, 1st Prize



Sneha Verma, 2nd Prize



Dilpreet Kaur, 3rd Prize



Smriti Mehrotra, Consolation Prize

4. World Sparrow Day, 2013

The diminutive House Sparrow (*Passer domesticus*) is perhaps one of the earliest birds you can remember from your childhood. Unfortunately, the house sparrow is now a disappearing species. But like all other plants and animals which were once abundant and are now facing an uncertain future, their numbers are also declining across their natural range. **The World Sparrow Day (WSD)** was celebrated on 20th March, 2013 at the Regional Science City and programme was jointly organized by the U.P. State Biodiversity Board, Zoology Department, Lucknow University.



Rise for the Sparrow is aimed at empowering and inspiring citizens, corporate and educational institution to actively get involved in sparrow conservation, monitoring and creating awareness with regard to the conservation of house sparrow and other common birds. We aim to reach out to people across the world to empower them with simple solutions which will not involve a lot of time and resources but at the same time will have a significant impact on sparrow conservation.

The aim of the programme was to raise awareness regarding Sparrow Conservation among the students through various competitions.

About 120 students participated in poster contest on "Design and Paint a House for your Sparrow" and 80 students participated in the quiz competition. In all 200 students participated enthusiastically in the events. Hand-bills and pamphlets on conservation of house sparrow were distributed among the students and teachers.

Besides, a request was also made through news papers to common public to count the sparrows and report the same at the board's email: upstatebiodiversityboard@gmail.com. The response regarding the sparrow count from the common public was encouraging.

The list of prize winners of the competition are as follows :

1- List of prize winners of the competition

Poster Making Contest

Category: Class VI-VIII

Prize	Name of Students	Class	School
First	Harshi Lal	VII	Seth. M.R. Jaipuria School, Gomti Nagar, Lucknow
Second	Anjali Abdi	VIII	La Martiniere Girls College, Lucknow
Third	Aviral Chharia	VIII-B	Seth. M.R. Jaipuria School, Gomti Nagar, Lucknow
Consolation	Sonam Agarwal	VII	Seth. M.R. Jaipuria School, Gomti Nagar, Lucknow



1st prize, Harshi Lal



2nd prize, Anjali Abdi



3rd prize, Aviral Chharia



Consolation prize, Sonam Agarwal

Poster Making Contest

Category: Class IX- XII

First	Nihit Verma	XI-B	Seth. M.R. Jaipuria School, Gomti Nagar, Lucknow
Second	Palak Poddar	XI-B	Seth. M.R. Jaipuria School, Gomti Nagar, Lucknow
Consolation	Jillian Elizabeth	XII- E	Seth. M.R. Jaipuria School, Gomti Nagar, Lucknow



1st prize, Nihit Verma



1st prize, Monalisha Gupta



2nd prize, Palak Poddar



3rd prize, Eram Khan



Consolation prize, Jillian Elizabeth



Consolation prize, Aarushi Singh

2. Details of response received from the citizens : About 1500 sparrows were counted by citizens and reported to Board. Following are the picture of sparrows received from citizens :

S. No. Name, Address, Photo (if any)

1.



Email:er_kkpandey@yahoo.com

2



Email: bksaxena0522@gmail.com

3



Email: shilpika271084@gmail.com

4



5



Email: eiravalves@gmail.com, lucknow@lko.jagran.com Email: avi.coer@gmail.com

6



Email: wildlifeconservation.lko@gmail.com

7



Email: ghantakarn@gmail.com

8



Email: srai_75@rediffmail.com

9



Email: Pktiware <pktiwareips@gmail.com

10



Email: bishtns2@yahoo.in

11



Email: aksaxena193@gmail.com

12

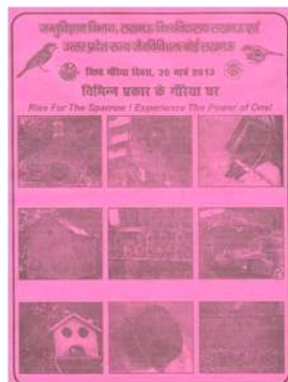


Email: dr.vineettiware@rediffmail.com

Awareness materials published and distributed on World Sparrow Day-2013



Poster



Handbills



Handbills

Area	Count	Count	Count	Count	Count	Count
Area 1						
Area 2						
Area 3						
Area 4						
Area 5						
Area 6						
Area 7						
Area 8						
Area 9						
Area 10						

Sparrow count form

Glimpses of World Sparrow Day -2013 Celebration



4. International Day of Forests, 22 March, 2013



The Uttar Pradesh State Biodiversity Board, Lucknow celebrated “**World Forestry Day**” on 21st March, 2013. On this occasion, with a view to spread awareness among the students, a poster competition on “**Importance of Forests**” was organized in the districts of Unnao and Lucknow.

A total of 155 students participated in the competition. Out of which, 80 students (upto class VIII) and 12 students (class IX) of Church School Nawabganj, Unnao and 25 students (class Vth to Xth) of Kendriya Vidhalaya, Unnao took part in the poster competition whereas 29 students of Awadh Academy, Lucknow and 09 students of T. D. Girls Inter College, Lucknow participated in the competition. The winners were awarded prizes accordingly.

The list of prize winners of the competition is mentioned below:

Result of Drawing Competitions

Name of the School: Church School, Nawabganj, Unnao

Category: Vth - VIIIth

S. No	Name	Class	Result
1	Mantasa Khatoon	VIII	First
2	Mansi Diwakar	VII	Second
3.	Mansi Singh	VII	Consolation



1st Prize, Mantasa Khatoon



2nd Prize, Mansi Diwakar

Category: IXth - XIIth

S. No	Name	Class	Result
1	Robin Vimal	IX	First
2	Manali Pandey	IX	Second
3.	Aviral Rathore	IX	Consolation



Consolation Prize, Mansi Singh



1st Prize, Robin Vimal



2nd Prize, Manali Pandey



Consolation Prize, Aviral Rathore

Name of the School: Kendriya Vidhalaya, Unnao

Category: Vth – Xth

Sl No.	Name of Student	Class	Rank
1	Nidhi Shukla	X- A	Ist
2	Rupanjali Yadav	VIII-B	IIInd
3	Prachi Singh	VI- B	IIIrd
4	Akanksha Yadav	VIII-A	Consolation



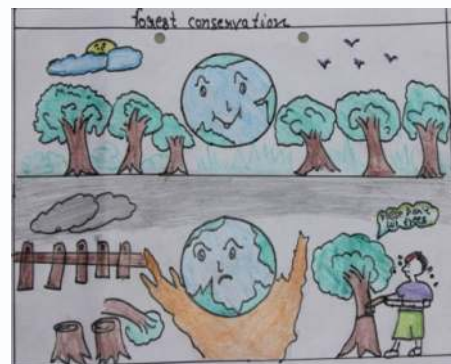
1st Prize, Nidhi Shukla



2nd Prize, Rupanjali Yadav



3rd Prize, Prachi Singh



Consolation Prize, Akanksha Yadav



Consolation Prize,
Vanshika Mishra

Result of Drawing Competitions

S. No	Name	School/College	Class	Result
1	Anchal Kumari	T D Girls Inter College	III-A	First
2	Vandana Vishwakarma	Awadh Academy	VIII	Second
3.	Sneha Prajapati	T D Girls Inter College	VIII-A	Consolation



1st Prize, Anchal Kumari



2nd Prize, Vandana Vishwakarma



Consolation Prize, Sneha Prajapati

Glimpses of Poster Competition



25

Newspaper Clippings

THE HINDU • THURSDAY, FEBRUARY 7, 2013

Women coconut pollinators scale new heights

It takes 5-10 minutes for them to complete the work on a single tree

M.J. PRABU

The coconut pollination (technically referred to as hybridisation) sector, once a men's monopoly in Kerala, is today being conquered successfully by women also. Seed-nuts of hybrid coconut palms are produced through artificial pollination. In Kasaragod district, the friends of coconut trees programme (FoCT) for training women in coconut pollination organised by the Central Plantation Crops Research Institute (CPCRI), evoked good response from enterprising women.

Thirty-four ladies, mostly house-wives, underwent training in coconut pollination techniques, an area all along dominated by men. In addition, 207 unemployed rural youth were also trained in the techniques.

Considered a tough job

Earlier women were not much interested in climbing the trees it was always considered a tough job and a male bachelors. But today they want to prove they are also capable and on par with men in farm work.

Feedback studies show that the training programme in artificial pollination done by women in a big hit among rural women in the region as it helps in their financial empowerment. Among the five groups functioning in the district now, two groups comprise only women.

"From the usual women dominated leaf plating, broom making, and copra drying for instance, women started climbing the trees, harvesting nuts, cleaning the crown, carrying out plant protection methods, and today they are happy that our in-

NEW PROSPECTS: A woman climber bagging the receptive flower. - PHOTO: SPECIAL ARRANGEMENT

stitute has played a major role in making them pollinators," says Dr. V. George, Director,

FARMER'S NOTEBOOK

CPCRI. The programme is funded by the Coconut Development Board (CDB). Coconut pollination technique is a highly skilled activity which has to be done on newly opened inflorescence located on the crown of the tree. It takes only 5-10 minutes to pollinate a bunch on the tree.

Different steps
The different steps in this technique are pollen collection and processing, removal of male flowers from the inflorescence, tying a bag on the inflorescence, dusting of pollen, confirming the receptive state of female flowers, repeating the same procedures till the last flower comes to receptivity, and removal of the cloth bag after ensuring that the last button is also pollinated.

These laborious steps demand expertise, sound knowledge on floral biology of coconut trees, and good skill. Climbing the tree and sitting on top of the crown to pollinate is a difficult job since the trees keep swaying during heavy winds. Also the height of the tree creates a scare in some climbers.

Number of times
The pollinator needs to climb a tree at least 5-6 times to pollinate a bunch. On the first day he/she has to remove the male flowers from the opened inflorescence and cover the bunch with a bag. From the second day onwards (some times alternative days) they need to pollinate according to the receptive stage of the female flower.

There are two lab scientists keep the pollen (processed male flowers ready) and the women climbers take it with them to be sprayed on matured female flowers in the crown. At present a private contractor selected through the institute pays Rs.600 a day

for each woman climber who pollinates 20-22 trees in a day. "Though the main objective of the programme was to address the problem of labour shortage, it has changed the social status of coconut climbers as they are known today, as skilled professionals in the sector."

"Their services are highly valued by the coconut farmers of the locality and nearby panchayats because of their dedication and sincerity towards their profession," says Dr. George.

Daily labourers

Before attending this training programme the women worked as daily labourers, able to earn hardly Rs.100 per day. But after attending the training and doing it as a full time work their income has improved.

"The women are doing an excellent job in a professional manner. Unlike some male coconut climbers, women are not addicted to alcohol and do not absent themselves from work."

"Once they commit they are on the job. It is heartening to see them comfortably sitting on top of the coconut tree carrying out with ease the different operations," says Chethan, a coconut garden owner, who has made use of the women training skills in his farm.

It takes only 5-10 minutes for these women to do the pollination work for a tree. The process needs to be repeated 4-5 times for ensuring good yield and the workers are engaged on a contract.

For details readers can contact Dr. George V. Thomas, Director, CPCRI, Kasaragod: 671-124, email: georgethomas@yaho.com, directorcpr@gmail.com, phone: 04994-232332.

PERISCOPE

A lifeline under siege

S. Ravi Kumar

The World Wetland Days (WWD) was celebrated in Kerala on February 2-3, 2013. The event was organised by the Kerala State Wetland Conservation Society (KSWS) in association with the Central Plantation Crops Research Institute (CPCRI), Kasaragod.

Wetlands under siege

Though they play a vital role in sustaining the eco-system, the country's natural wetlands are falling prey to rising pollution and urbanisation.

The country's wetlands are under a severe threat. The loss of wetlands is a global concern. In India, the loss of wetlands is a major concern. The Government of India has taken several steps to protect wetlands. The Wetland Conservation Act, 1992, was enacted to provide a legal framework for the conservation and management of wetlands. The Ministry of Environment and Forests has also taken several steps to protect wetlands.

The World Wetland Days (WWD) is an international event celebrated every two years. It is a platform for the exchange of information and experiences among wetland managers and scientists. The WWD is also a platform for the promotion of wetland conservation and management.

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Health & Environment

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10 Feb., 2013 : The World Wetland Days was celebrated on 02nd Feb, 2013. Over the years, wetlands are degrading very rapidly with booming population and burgeoning urbanization. Wetlands need conservation as natural assets.

07 Feb., 2013 : The Coconut Development Board (CDB) has funded a program to train women in artificial pollination in coconut trees. It takes 5-10 minutes to pollinate a tree. The pollinator needs to climb a tree at least 5-6 times to pollinate a bunch. The male flowers are removed on day one and the open inflorescence is covered with a cloth bag. There after women climbers take selected male flowers to be sprayed on mature female flowers. Earlier women earned Rs 100/day, the Central Plantation Crops Research Institute (CPCRI) pays them Rs 600/day. On an average a climber does 20-22 tree a day!

16 NATIONAL

The vultures are back from the brink

Chander Suta Dogra

CHANDIGARH: The good news is that the fall of vulture in South Asia, particularly India, has stopped and is even reversing in the case of some species such as the white-backed vulture.

A research paper in *Journal of Science*, titled "Pollution, politics and vultures," says the 2006 ban on manufacture, import and sale of pain-killers, diclofenac, for veterinary use, a cause for vulture mortality, and the timely response of the government in India have helped.

But the increase in the number of birds has been misleading, after almost 90 per cent of them in the wild dying. The situation remains precarious, and vulture conservationists say the increase is too little to mean much.

As against a population of 40 million vultures of different species in the 1980s, a rough estimate by the Bombay Natural History Society (BNHS) in 2011 put the count at fewer than a lakh in India. This is up from the 40,000 in 2007, as documented by it in 2007.



PRECARIOUSLY PERCHED: One of the endangered white-backed vultures. PHOTO: MOHAMMED YOUSUF

Dr. Balakrishna says, "The vulture collapse is an immense problem - in its sheer extent as well as in its significance for people. As news that the decline are beginning to slow and even reverse, it is extremely welcome and a

to 30 ml, and enough for one cattle dose. The other problem is that other veterinary drugs like acyclofenac and ketoprofen, which are also fatal for vultures, are still in use." Since even the 2006 ban on diclofenac took about three years to be effective, he reckons that it will take another five years or an before significant numbers of this scavenger bird can be seen in the wild. The alternate pain killer, meloxicam, is expensive and not as effective, which is why veterinarians sometimes use the ones meant for humans. Just 0.05 per cent of diclofenac in a carcass is enough to kill a vulture, which dies of kidney failure, within days of ingesting the contaminated meat.

The lack of vulture safes, where diclofenac does not linger in the food chain, in the country is also the reason why the BNHS is unable to release its captive bred vultures into the wild as yet. Some 300 birds, including 46 chicks, have been bred in three BNHS breeding centres, Pijor in Haryana, Rani in Assam and in West Bengal. The BNHS has set 2016 as

the target year to begin releasing its captive vultures subject to the availability of vulture safe zones till then.

Some States like Punjab, Maharashtra and West Bengal also set up vulture restaurants in the last few years, to provide diclofenac free carcasses but the experiment has not been very successful. Says Dr. Prakash, "This concept does not work in India because here there is no death of food for vultures. It will work only if the authorities can ensure that for at least a 100 kilometre radius no carcass is available, so that the vultures eat only at the 'restaurant'. Only 3 per cent of the Indian cattle bear traces of the drug, but even this has proved enough to decimate the vulture population."

The SAVE (Save Asia's Vultures from Extinction) consortium for efforts across borders was set up in 2011 and subsequently a new Regional Steering Committee was set up by the International Union for Conservation of Nature (IUCN) and the Indian government. The thrust is on vulture breeding, advocacy and carcass sampling.

19 Feb., 2013 : As per the rough estimate put by BNHS in 2011, the count of vulture in India is about a lakh. This is up from 40,000 in 2007. In 1980's about 40 million vultures were estimated which declined due to use of Diclofenac. Diclofenac is fatal for vultures as Cyanide is for humans-one meal of a contaminated carcass is enough. The other veterinary drugs like acyclofenac and ketoprofen are still in use through.

Newspaper Clippings

TIMES NATION

THE TIMES OF INDIA, LUCKNOW | THURSDAY, MARCH 21, 2013

Big leopard numbers in human habitats: Study 'Maha Tehsil Beats Rajaji Park In Density'

Amit Bhattacharya | TNN

New Delhi: Most people think of leopards as predators that live in forests except for a few that occasionally stray into human settlements. Breaking that myth, a new study has found that a large number of these big cats may be residing in human habitats, quietly sharing space with people in villages, farmlands and even on the edge of towns.

The study was conducted in a densely populated valley in Akole tehsil of Ahmednagar district in western Maharashtra, where researchers set up camera traps in 40 locations for a month to gather evidence of wildlife in this prosperous sugarcane belt.

The results were startling. A total of 81 leopard images were captured across a sampled area of 179 sq km, in which five distinct adult males and six adult females were identified.

Two females were clicked with cubs and a third gave birth six months later—all in an area with a population density of 357 people per square km.

Using a GIS-based software, the researchers estimated animal density at five leopards (4.8) per 100 sq km. That's not all. As many striped hyaenas (5.03/100 sq km) were found in the area, taking the number of large predators in the landscape to 10 per 100 sq km. The findings were published on March 6 in the Public Library of Science journal.

"Nowhere in the world have such large number of big predators been reported in such densely populated human landscape," said Vidya Athreya, a wildlife biologist with Wildlife Conservation Society, India, who is the lead author of the study carried out in collaboration with the Maharashtra forest department.

OUR WILD BACKYARD

Photo: Project Waghoba

Animals clicked in villages of Maharashtra's Akole tehsil where human density is 357/sq km



NO. OF PHOTOS*	
Leopard	81
Striped hyaena	65
Jungle cat	20
Rusty spotted cat	10
Indian civet	5
Jackal	3
India fox	1

* 37 camera traps used for 1 month

Remarkably, no human deaths were reported from the study area. Athreya believes this is so because the leopard population in the area is more or less settled.

The big cat's density in Akole tehsil was found to be higher than some national parks. In Rajaji, for instance, distribution of leopards is reported to be just 2.07/100 sq km following an increase in tiger numbers. Overall, leopard density in India's protected forests is 15/100 sq km.

Athreya said with the nearest protected forest some 18 km away, there was little doubt that the big cats were living in 'human areas', mainly in sugarcane fields. "The leopards were marking their territories on roads and on bunds in sugarcane fields. This was as much their land as it was of the people," she said.

During daytime, the felines would sit very still in the fields, often just a few hundred metres from houses. "However, the night made the leopard king. They even went close to houses to kill dogs, cats and goats," Athreya reported.

Akole tehsil is by no means an isolated exam-

ple. Athreya said leopards can be found across the sugarcane belts of western Maharashtra, Gujarat and western UP, as well as the tea-growing areas of Bengal, Assam and south India.

Remarkably, no human deaths were reported from the study area. Athreya believes this is so because the leopard population in the area is more or less settled. "Leopards instinctively shun humans. That's particularly true of an animal that has grown up in the same area. We found one of our radio-collared leopards visited a particular house every few days without ever disturbing its residents, who sleep in the open," she said.

In contrast, serious leopard attacks were reported from neighbouring forested areas which happen to be close to administrative borders. Athreya believes most of these attacks were because big cats trapped in human habitats were often released in these areas. "A relocated leopard is disoriented and unpredictable," she added.

The study calls for a shift in the concept of conservation, which is focused solely on protected areas. "The presence of big predators in human landscapes throws up challenges which conservationists haven't yet begun to understand," Athreya said.

21 Mar., 2013 : Researchers set up camera traps in 40 locations in Akole tehsil of Ahmednagar district in western Maharashtra to gather evidence of wildlife. The total area of (79 sq km) captured 81 leopard images- 5 district males and 6 adults females were identified. The animal density is 4.8 per 100 sq km. Even stripe hyenas were recorded, talking the count of large predators to 10 per 100 sq km. The human population density is 357 people per sq km. Remarkably, no human deaths have been reported from this area.

Poachers train sights on smaller animals

Chetan Chauhan

chetan@hindustantimes.com

NEW DELHI: Deep inside Indian forests small and big creatures are facing threat from poachers as never seen before. Their vulnerability to wildlife syndicates is on the rise with the government data showing increasing threat not only to tigers and rhinos but to other animals such as pangolins, butterflies and crocodiles.

India is home about 6.5%

sunday special

of the wildlife species in the world even though it accounts for less than two percent of the planet's green cover. Sparse forests having rich flora and fauna and poor protection is a perfect invitation to global wildlife syndicates to kill.

In 2012, detection of endangered species by Customs department across India

SHIFTING TRENDS

Poachers are not only widening their net in terms of animals preyed upon but also luring the locals

MAJOR HAULS IN 2012

■ Caiman crocodiles
1110 pieces



■ Scales of pangolin 37 kg: a pangolin weighs about 200 grams



■ Yellow anaconda 231 pieces



■ Tokay Gecko: Over 100 seized: Chinese believe Gecko laced medicine can treat HIV.



almost doubled as compared to 2011. Around 3,380 crocodiles, thousands of butterflies and some pangolins were also seized in 2012.

The data shared with Parliament this month also indicated that there has been no abatement to poaching in first two months of 2013 with around 266 crocodiles and 11 yellow anaconda seized by the customs department.

"The data is just indicative of wildlife poaching in India

as all killings for money are not detected," a senior environment ministry official said. In addition, the data does not include seizures made by police of big animals such as tigers, elephants, rhinos and leopards.

The first three months of 2013 has witnessed poaching of 15 tigers, 39 leopards and 16 rhinos, says Wildlife Protection Society of India (WPSI).

CONTINUED ON PAGE 11

Poachers train sights on smaller...

CONTINUED FROM PAGE 1

Last year around 200 of them were poached, highest in a decade. Many of the poaching incidents have been reported from forests close to international border areas indicating its intended destination.

Dipankar Ghose, director special and landscapes with WWF-India, said emergence of South East Asia as a big illegal wildlife trade market has resulted in rise in poaching. "This year poachers armed with AK-47 and automatic rifles killed rhinos in Kaziranga," he said.

Elsewhere, the poachers have lured local villagers to kill animals. The National Tiger Conservation Authority (NTCA) had also issued an advisory to state government fearing use of snares to trap and kills tigers. Hundreds of iron traps were found in forests in Maharashtra and Uttarakhand.

While huge jump in prices of wildlife body parts in the international market is a reason for increase in demand, the skewed utilization of the government money for wildlife protection has helped poachers.

Around 80 % of the money meant for wildlife in the 11th five year plan (2007-12) was spent on 41 tiger reserves contributing to less than 10% of the total notified wildlife areas in the country. "As a result there was not adequate money for protection other endangered species such as elephants and rhinos," a former environment ministry official admitted. In coming years, the situation is unlikely to change as money for wildlife has not been increased as compared to other social sectors.

▶ **31 Mar., 2013 :** It not only Tigers and Rhinos that are facing threat from poachers but today even the smaller animals like Pangolins, butterflies and crocodiles are threatened. The first 3 months of 2013, witnessed poaching of 15 tigers, 39 leopards and 16 rhinos says WPSI.

Newspaper Clippings

(iii) State News

ALLAHABAD
THE HINDU • SUNDAY, JANUARY 20, 2013

Wetland in search of a 'Salim Ali'

Alwara Taal in Uttar Pradesh's Kaushambi district is in urgent need for official attention to save it from poaching activities and pollution

Manoj Misra

It first caught our attention on a Google Earth image as a markedly unusual geographical feature, located along a pronounced meander in the river Yamuna. Later, a reference to the road map of Uttar Pradesh confirmed that it is a major riparian wetland called the Alwara Taal in the district of Kaushambi, some 90 km west of Allahabad.

Impressed by its aquatic expanse, we assumed that it must be a notified bird sanctuary teeming with birds of all kinds. And we were not really disappointed with its bird life when we could find time on December 19 to visit and briefly survey it. More than 1,200 birds of 55 species, including 57 sarus cranes, could be counted during mid-day over a period of some four hours. A number of birds flying in formation and out of counting distance certified to the wetland's richness.

But we were certainly disappointed by the fact that the wetland, despite its size, had not yet received the kind of official or non-official attention and patronage that it rightly deserves. This is all the more disconcerting in the light of a recent TEEB (The Economics and Ecosystems and Biodiversity) report which states that the world has lost almost half of its wetlands in the last 100 years.

Surrounded by around 10 villages and a rural ring road, the Alwara Taal — named after the bordering village of Alwara — is a natural but shallow depression lying within the meander of



AVIAN RICHNESS: Could become a protected site for bird watching.

the river; it gets filled with rain water each monsoon. With a recorded spread of some 3,000 bighas (700 hectares) and a maximum depth of about five metres, its watery spread fluctuates with season, over the year. We were informed by the locals that the high floods in the Yamuna in 1978 had flooded the entire expanse of the natural depression right up till the raised ring road.

As we tried to approach, in a small country boat, the ramshackle bamboo lookout located approximately at the centre of the wetland, we came across not only the wetland's aquatic richness, but many alarming signs of its possible destruction, if requisite protective steps are not taken with a sense of urgency.

There were signs of rampant poaching of birds, coots in particular, and alarming spread of weeds like water hyacinth (besharam) and acacia (babool) plants. High input (chemical fertiliser and pesti-

cides) farming on its fringe must be in form of run-off adding to the pollution load of the wetland.

But there were many signs of hope as well. We met a number of local people who were not only knowledgeable about the history and richness of the wetland but very keen to see it developed as a protected site for bird watching. Another encouraging fact is that the Alwara Taal lies in a suitable location from a tourist's point of view with places like Chitrakut, Rajapur, Kaushambi and Allahabad falling in an easy circuit.

We believe that Alwara Taal is a good candidate for consideration and declaration as a Community Reserve (CR) under the amended Wildlife (Protection) Act. But the process of its designation as a protected area must be fully participatory and transparent and based on good science. For example, many birds which are sighted here are because there is a vibrant

farming of crops like gram in place on its periphery that provides them their requisite feed. Thus, while traditional farming and fishing practices by local people may not be halted as a result of its declaration as a protected area, they must be encouraged to keep away from intensive and chemical based agriculture and exploitative fishery practices.

But above everything, we believe that the Alwara Taal needs a person or a group to first appreciate its richness as well as its fragility and then to champion its cause with a missionary zeal. After all how many water bodies in central India can claim to host such a large number of sarus cranes, the state bird of Uttar Pradesh, at one place. And with the universities at Allahabad and Kanpur being not far away, it is our hope that a Salim Ali for Alwara should not be too difficult to find.

(The writer is the Convener of Yamuna Jiye Abhiyaan)

20 Jan., 2013 : The author believed that Alwara taal in Kaushambi district of Uttar Pradesh is a good candidate for consideration and declaration as community reserve (CR) under the Wildlife Protection Act. Through the catch is that its designation as a protected area must be fully participatory and transparent based on good science.

Newspaper Clippings

ALLAHABAD
HINDU • WEDNESDAY, JANUARY 23, 2013

Fruit of labour

Omar Rashid

One of the most common myths surrounding the guava is that it triggers cold. That is why some people avoid it during winter. But that's that for the hypochondriacs. The guava has a much more nuanced liaison with cold weather.

As a matter of fact, one of the finest selection of the fruit — the Allahabadi guavas — actually blossom under the chill, though the sandy loam soil also has a big role to play. The cold climate not only neutralises the threat of disease and pests, it also enriches its popular variety — Surkha, commonly known as the red guava due to its apple-red exterior and light pink flesh. The demand for the Surkha shoots up during winter.

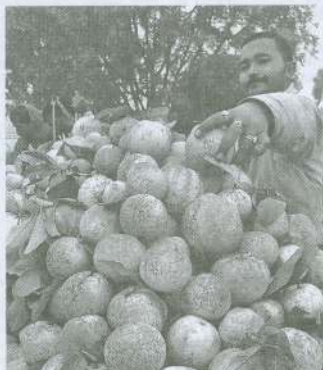
For the record, the guava plant usually has three flushes: monsoons, winter and spring. "During monsoons," explains Anil Dube, a district horticulture department official, "the guavas are susceptible to insects and usually have hard seeds. The rapid fluctuation in temperature provides suitable conditions for the growth of fungi." On the other hand, a warm climate ripens the fruit much before its time, leaving behind a spread of premature, soft guavas. Naturally, the market for such fruits is scarce.

For the farmers, this is where the winter comes in. However, despite the chill, the amount and period of rainfall during the monsoons does have a bearing on the produce in winter. According to the farmers, the heavy showers this time delayed

Faced with the vagaries of nature, low yield and inconsistent quality, a section of guava farmers in Allahabad are shifting to banana cultivation



FINEST SELECTION: Guava plants usually have three flushes. PHOTOS: BRIJESH JAISWAL



SURKHA: Its demand shoots up in winter.

their plantations, with some like 65-year-old Ram Tripathi claiming that he could only manage a single flush. He is definitely not too happy. "It's [the good produce] almost half this year. I have been selling off the bulk at a lesser rate to avoid wastage. Fruits worth 30 days of sale are

ready much before, in half the time. There is no option but to dispose them."

Another element that hampers quality produce, despite the cold, is fog — a common feature in much of north India. It hinders photosynthesis and backed by other factors, also causes the guava

to fall prematurely. Due to this, the Surkha becomes less attractive in the market, simply because the redder they are the quicker they sell. The other varieties, such as the Safeda and Patta, might not suffer as much. The farmers also have to contend with the crop-destroying Nilgai or blue antelope.

According to vendors and farmers at Mundera Mandi, a large market on the eastern fringes of the city, while the quantity of the produce has been less affected this year, the quality has been inconsistent.

Ram das, 50, a farmer, has been compelled to sell off in bulk a portion of his quality produce. "The fruits fall before time or soften fast. They rot if we do not dispose them. Normally, I sell a bucket for Rs. 150. But the low quality ones do not fetch more than Rs. 80-100."

Over the years, due to these factors, banana cultivation has replaced guavas in some areas. "Their lack of knowledge about the threats to guava, such as drying of the plant, white worms (jurai) or black ants and the relatively

better produce of bananas might be the reason," reckons Mr. Dube. "One bigha of banana cultivation fetches up to Rs. one lakh of profit, while guavas only about Rs. 35,000-60,000. We regularly recommend them to spray urea in the summer itself and also list out other precautions."

But the farmers are already hurting by the high cost of fertilisers and increased labour wage. Nevertheless, to ensure that quality and quantity of produce are improved, the department has initiated the technique of 'dense planting'. This means that 1,111 plants can now be grown over an area of five hectares against the previous figure of 277. Though this means that individual canopies will be smaller and per-plant production less, the overall production shoots up. The shorter plants ensure that quality fruits are picked while also saving labour power.

"This technique has entered its third year. Only at the end of it we can judge how successful it has been. But going by what we see, it looks good," says Mr. Dube.

23 Jan., 2013 : The sandy loam soil of Allahabad is good for guavas "Surkha"- the red guava with an apple red exterior is found in Allahabad Guava has three seasons — monsoons, winter and spring the other varieties are "Safeda" and "Patta".

Over the years banana cultivation is replacing the guavas. One bigha of bananas fetch Rs. One lakh profit whereas guavas fetch only Rs 35,000-60,000. The horticulture department is now promoting a new technique to grown 1111 plants per ha. as against 277 earlier. Is success remains to be seen

दैनिक जागरण लखनऊ 19 मार्च 2013

अब राजधानी में होगा पान की प्रजातियों का संरक्षण

नितेश कुमार उपस्थान, लखनऊ

खुराखबरी

पान किसानों के लिए अच्छी खबर है। राष्ट्रीय वनस्पति अनुसंधान संस्थान (एनबीआई) ने केदार पान किसानों को प्रोत्साहन देते हैं और पान की कुछ दो रही प्रजातियों का संरक्षण भी कोष। यही नहीं बल्कि पान की कई प्रजातियों के नियंत्रण भी करने की वेगो कर रहा है। तबकि पान का संरक्षण भी बच रहे और पान का पता स्पष्ट कराया भी व हो और देश-विदेश के बाजार पर पानि पान में कोई कमी न निकले। महोबा में एनबीआई का पान कोष है। पान राज्य सरकार से केन्द्र न मिलने से बच रहे इस कोष को शुरू करने के लिए पान किसानों ने कई बार धरना-प्रदर्शन भी किया, लेकिन सुरू नहीं हो सका। अन्य फसलों की भांति पान किसानों को भी अपना खर्चपूर्ति देने के लिए कई बार किसानों को और से केन्द्र व राज्य सरकार को पान भी लिखा गया। पान किसानों ने कोष का पानपत्र बहुत मोहो और राष्ट्रीय अनुसंधान केंद्र आरोग्य के अख्यत प्रोफेसर डॉक्टर प्रताप सिन्हा के अध्यक्षता में पान किसानों को सपरान्त पर करने और पान की प्रजातियों को बचाने को काम को भी। पान किसान सुनिश्च के भारतीय वनस्पति संरक्षण संस्थान को कहना है कि इसकी सुरक्षा होने से प्रदेश के का पान किसानों को पानपत्र होगा। राष्ट्रीय अनुसंधान केंद्र आरोग्य के अध्यक्ष डॉक्टर सुनिश्च 25 मार्च को शुरूआत करेंगे। पानपत्रों में 'महोबा', 'महोबा', 'लखनऊ', 'जौनपुर', 'बाराबंकी', 'आगरा', 'मुजफ्फरपुर', 'मधेपुरा', 'मौलाना', 'हरदोई', 'काशी', 'मिर्जापुर'...



संरक्षण, मिर्जापुर, अमेठी, बाराबंकी, चम्पारन, उन्नाव, काठ व बाबूको बिली में पान को खेते होते हैं। देश में 30 हजार हेक्टेयर और प्रदेश में संरक्षण में 450 हेक्टेयर क्षेत्र में पान की खेती होती है। प्रदेश में दो लाख किसान खेती में जुड़े हैं। पान के निर्यात से हर वर्ष देश को 1.55 लाख अरबों की रकम का प्रदान होता है।

19 Mar., 2013 : NBRI is giving training to paan farmers and also promoting conservation of paan species. Mahoba is home to the NBRI research centre on paan which is "Desi Bangla Paan" is sold for Rs. 60-70 a bundle, whereas "Maghi Banarsi Paan" sold for Rs. 200 a bundle. One bundle has 160 leaves. The major paan producing states in India are West Bengal, Tripura, Madhya Pradesh and Uttar Pradesh. About 66.1% of the leaf production comes from West Bengal and 22% from U.P.



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