

20-21<sup>st</sup> January, 2023 BHOPAL







## **THEME 2023**

## Conservation Efforts & Management Challenges of Lesser-known Faunal Diversity

# SOUVENIR





SOUVENIR	1 <sup>st</sup> National Conference on Lesser Known Species of MP
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SNHC India with registered name Society of Nature Healers, Conservators and Local Tourism Development is a Non-Profit Organization (NGO) founded in Year 2019 in capital city of MP i.e. Bhopal with a vision of healing (restoring) Mother Nature in natural and effective ways and conserving its beauty, the beautiful species of birds, animals, stunning and wide varieties of plants also the conservation and promotion of Heritage & Culture which is handed over to us from our ancestors.

Through our publication i.e. SNHC Journal – A quarterly magazine of central India on sensitising people for Nature, we are reaching Educational institutions at National Level, all forest divisions of India, libraries of different govt departments, NGO's and people in nature conservation etc. We have been publishing this since February 2020 and have received very good responses and commendations from all over India and some parts of the world too. We have 27500 + E - distribution and 2500+ Hard copy distribution all over India and abroad.

With the vision of Nature Conservation and sensitization to Youth as well as people in action we are organising a 2- day National Conference on Lesser-Known Species of MP, Dated 20 and 21st of January 2023.



India being a party to Convention on Biological Diversity (CBD) enacted Biological Diversity Act in 2002. A threetier structure has been established for implementation of Biological Diversity Act, 2002 with National Biodiversity Authority (NBA) at the apex, State Biodiversity Boards (SBBs) at provincial level and Biodiversity Management Committees (BMCs) at the local body level. As per the provisions of BD Act, 2002, Madhya Pradesh State Biodiversity Board was constitutedon 11th April, 2005. The objectives of the Board are Conservation of biodiversity, Sustainable use of its components and Equitable sharing of benefits arising out of the use of biological resources and associated traditional knowledge.

Madhya Pradesh State Biodiversity Board has an advisory role in promoting Biodiversity concerns amongst various stakeholders. One of the focus areas of Board is promoting research on various facets of biodiversity and advocating policy in gap areas. The lesser-known faunal species is one such gap area which needs focus and action. MPSBB has supported research projects on some important and lesser-known faunal species like Caracal, Forest Owlet, Lesser florican, Vultures, Red-Crowned Roofed Turtle(Batagur Kachuga), Mahseer, Malabar Pied Hornbill and four horned antelope to improve the understanding of these species.







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#### **Dr. Sujit Narwade** Asst. Director, BNHS, Mumbai

He is working in BNHS since year 2004 and at present coordinating projects on;

- a. Conservation of critically endangered bird Lesser Florican Sypheotides indicus in Shokaliya landscape, Ajmer, Rajasthan.
- b. Conservation of the critically endangered bird Great Indian Bustard Ardeotis nigriceps (GIB) with community engagement in the Thar Desert.
- c. Developing strategies for the conservation of critically endangered Lesser Florican Sypheotides indicus and its habitat through assessment of its population, distribution, and threats in Bidar district, Karnataka supported by Karnataka Forest Department.
- d. ENVIS Resource Partner in Avian Ecology, BNHS India supported by the Ministry of Environment and climate change (MoEF & CC).







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Image Courtesy: Nayan Khanolkar

# Saving Lesser Florican in Madhya Pradesh

By Sujit Narwade, PhD., Assistant Director, BNHS

The lesser florican Sypheotides indicus is the smallest of bustards found in India, protected under schedule 1 of the Wildlife (Protection)Act, 1972. Currently placed under the Critically Endangered category by the IUCN with an estimated population of 250-300 males (500 to 600 considering a 1:1 male-female ratio) in 2017. Lesser Florican has been included as one of the prioritized species by the Ministry of Environment, Forest, and Climate Change (MoEFCC); under the scheme of Integrated Development of Wildlife Habitats in 2009.

Once abundantly found in the terai region of Nepal and sighting records in Pakistan and Bangladesh. At present, these birds have a breeding range restricted to the western MP, Gujarat, Southeast Rajasthan, drier areas of Maharashtra, the eastern plains of Karnataka, and the Kurnool district of Andhra Pradesh. While its non-breeding ranges are mainly confined to the Deccan plateau (Vidarbha, south-western plateau, and Marathwadaparts of Maharashtra; eastern plains of Karnataka; and parts of Andhra Pradesh).

#### Status of Lesser Florican in MP

On the recommendation of Dr. Salim Ali, the Government of Madhya Pradesh constituted protected areas for Lesser Florican, these are Sailana Wildlife Sanctuary in Ratlam district and Sardarpur Sanctuary in Dhar district. The BNHS team visiting the western part of MP since the year 2017 at least once a year. BNHS conducted surveys with the collaboration of the Wildlife Institute of India, The Corbett Foundation, and the Forest Department for understanding the status of florican during monsoon 2017 and 2018 in Madhya Pradesh. In the 2017 survey, teams could not count any birds, but in the year 2018, they succeeded at counting 11 birds in MP (2 in Sailana WLS, 4 in Sardarpur, 3 in the Jeeran area of Neemuch and 2 in Petlawad). Then after, floricans are mainly reported from Sardarpur WLS and Petlawad areas from 2019 to 2023. Since no long-term landscape-level studies being conducted in MP for a few decades, it is difficult to give a proper assessment based on the short site visits.

# Major reasons for the declining population of LF

The Major reason for the declining









population of this species is the land use change taking place at a large scale. Loss of beeds(grasslands or pastures), and intensified and mechanized agriculture led to drastic land use changes. Overgrazing, mining, positioning of the new renewable energy infrastructure without ecological considerations, heavy use of chemicals (herbicides, pesticides, fungicides, fertilizers, etc.), free-ranging dogs (predation on eggs and chicks), and collision with high tension powerlines are major threats to these birds.

# Recommendations to save LF from local extinction.

- 1. Boundary demarcation and habitat protection
- 2. Conducting impact assessment studies before planning any new renewable energy power plants in

entire florican distribution ranges

- 3. Control of overgrazingin breeding sites
- 4. Local people should get involved in LF conservation, across all the sites
- 5. Designing a scheme for incentives to be given to local farmers for Florican-friendly agriculture practices for providing suitable habitat in marginal areas of the Sanctuary.
- 6. Studying the impact of monoculture crops like Soyabean on native biodiversity
- 7. Controlling the population of free-ranging dogs in and around breeding sites of the floricans
- 8. Habitat restoration by removal of Lantana and other exotic invasive plant species, especially in Amba, Sherpur areas (Ratlam), Petlawad (Jhabua), Cheeta Kheda (Neemuch)

9. More florican areas should get designation as community reserves or conservation reserves. It is essential to involve local panchayats and to sensitize locals todevelop community reserves that shall cater safe havens for these birds.

#### Future of LF

At such a rapidly declining rate, the LF has a tough situation to face in the future, the episode of local extinction of the bird may take place. It is necessary to make more efforts and pay attention to the conservation research focussing on species' ecology, behavior, and habitat in the breeding and as well as the non-breeding ranges. A conservation breeding program for Lesser Florican can be initiated as an insurance policy to save this species in MP.



Image Courtesy: Ashley Chiu





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EX 





#### **Parveen Shaikh** Scientist C, BNHS, Mumbai

She currently works as a Scientist 'C' with the Conservation Department, Bombay Natural History Society. Her interests are behavioural ecology, conservation biology, conservation through community participation and citizen science. She presently works at Chambal understanding the nest survival and conservation needs of Indian Skimmer and Black-bellied Tern. She along with her team at BNHS are conserving Indian Skimmer along with other riverine nesting birds at Chambal through a 'Guardians of the Skimmer' project which is a community-based conservation initiative.











Image Courtesy: Oishimaya Sen Nag

# **SKIMMING CHAMBAL**- Status, distribution, threats and conservation needs of Indian Skimmer at National Chambal Sanctuary, India.

#### By Parveen Shaikh, Scientist C (BNHS, Mumbai)

Indian Skimmer (present population 2000-2500 birds) was once widely abundant throughoutSoutheast-Asia but is now extinct from most of the rangecountries owing to a multitude of threats. It is presentlydistributed only in India, Bangladesh; few records in Pakistan and Nepal. India is hosting significant (>90%) breeding population of this species and, is the only hope for preventing it from extinction.

UnlikeSoutheast-Asia, rivers in India are under tremendous pressure of dams, lift irrigation, illegal sandmining etc. In India,National Chambal Sanctuary holds a significant population of this species but it is not any exceptional and face the similarissues leading to unregulated water flow and nesting habitat degradation for these species. Due to low water level during thebreeding season most of the nesting sandbars get connected to banks providing access to predators like Jackal, free-ranging dogs, trampling of eggs and chicks by cattle, and other threats. Our work at River Chambal indicated that the major threat to the breeding-population is low nesting success and recruitment rate. This low nesting success is due to multitude anthropological threats.

For the conservation of skimmers, we have recently tested a community-based conservation intervention on a small scale at Chambal and it has resulted in improved nesting success. "Guardians of the Skimmer" programme which includes 24X7 protection of nests from predation and trampling by trained locals who will be paid incentives. This project will reduce the nest loss and help in improving the recruitment rate. On a long-term this will help instabilizing the global population decline of Indian Skimmer.

#### Recommendations

- 1. Initiate a long-term Indian Skimmer nest monitoring at National Chambal Sanctuary.
- 2. Allocate annual funds for 'Guardians of the Skimmer' programme to safeguard minimum four nesting colonies at National Chambal Sanctuary.
- Develop a committee and protocol for managing unregulated release during dry season to avoid flooding of nesting colonies.
- 4. Initiate similar research to understand the status of Black-bellied Tern at National Chambal Sanctuary.
- 5. River Chambal and Son in Madhya Pradesh together holds a significant population of Indian Skimmer and safeguarding nesting colonies from predation and trampling will help in improving the recruitment rate.









#### **Dr. Shomita Mukherjee** Senior Principal Scientist SACON, Coimbatore, Tamil Nadu

She did her Master's (Wildlife Biology) and Doctoral Degree from the Wildlife Institute of India and Saurashtra University, Rajkot Gujarat and her Post-doctoral work at the National Centre for Biological Sciences, Bengaluru. She studied several species of small cats to varying degrees throughout India, including diets, distribution and phylogeography of Jungle Cat, Leopard Cat and Fishing Cat, distributions and activity times of Marbled Cat, Clouded Leopard, Asiatic Golden Cat and Leopard Cat in Arunachal Pradesh and distribution and diet of Rusty-spotted Cat involving trained citizen volunteers in Mumbai. She recently worked as a consultant for UNDP to design a small cat conservation program for India. She is currently employed at the Sálim Ali Centre for Ornithology and Natural History, Coimbatore, Tamil Nadu, India.





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Image Courtesy: Dharmendra Khandal

# Small Cats of Madhya Pradesh:Present Status and Conservation Challenges

By Shomita Mukherjee, Senior Principal Scientist, SACON, Coimbatore

Introduction: India's rich representation of the Family Felidae can be explained by its geographic location and the diversity of ecosystems and habitats in the country. Of the 41 species of cats found globally, 15 currently occur in India, with the Cheetah being declared extinct from the country in 1952 (Kitchener et al., 2017; Kazmi, 2023). Interestingly, the hotspots for felids in India lie in two contrasting regions-the dry semi-arid tract of western India in Gujarat, Rajasthan and part of Madhya Pradesh and the wet tropical forest of northeast India. Both these regions harbour six to nine species of cats each. However, the assemblage of cats from western India differs to an extent from that in northeast India. Cats in western India, like the Caracal and Jungle Cat have very short tails and long legs and ears—associated with open habitats. In contrast, some from northeast India (Clouded Leopard and Marbled Cat)sport very long tails, which are associated with arboreality (Mukherjee et al., 2016).

# Status of small cats in Madhya Pradesh:

Madhya Pradesh perhaps has six to eight species of cats, without counting the recently introduced Cheetah. Apart from the Tiger and Leopard, there are confirmed records for Fishing Cat, Jungle Cat, Rusty-spotted Cat and Asiatic Wildcat (Chaudhuri et al., 2021; Dutta et al., 2021). Jungle Cat and Rusty-spotted Cat are fairly widespread across Madhya Pradesh (Vasava et al., 2012; Bora et al., 2020, Silva et al., 2020). Caracal was reported from Madhya Pradesh historically, but there are no recent authenticated reports of the species that are supported with photographic evidence (Khandal, 2020). Based on predictions from ensemble models, Jangid et al., (2022) suggest areas around Kuno National Park to be suitable for Caracal. The Caracal is considered to be extremely rare and threat-









ened in India and is gaining prominence in conservation circles (Khandal, 2020; Ghai, 2022). The Leopard Cat has never been reported from Madhya Pradesh (Pocock, 1939), but niche models suggest a small probability of their presence in Kanha Tiger Reserve, where summer temperatures in certain pockets do not cross 38 - 40°C (Mukherjee et al. 2010). Focussed intensive surveys are required to determine if the two species are indeed currently present in Madhya Pradesh. There are just a couple of reports of the Fishing Cat from Madhya Pradesh (Panna and Bandhavgarh Tiger Reserves), and both as by-catch data from Tiger surveys (Talegaonkar, 2018; Dutta et al., 2021). There were

no reports of the species earlier or after these records, and these are likely to be dispersing individuals tracking their habitats. A dedicated survey is required in Madhya Pradesh for the Fishing Cat, which is categorised as Vulnerable in the global IUCN Red List (Mukherjee et al., 2016).

#### Threats and solutions:

Habitat degradation is among the topmost threats to small cats in India. An especially damaging land policy is the designation of certain areas as wasteland, which are then converted to other forms of land use.

These so-called wastelands are often open scrub savannas or Open Natu-

ral Ecosystems harbouring rich and important biodiversity (Madhusudan and Vanak, 2022). The latest (2015-16) land use land cover map of Madhya Pradesh (Figure 1) shows that thirteen per cent of the total geographic area of the State is designated as wasteland, of which 55% is scrubland (ISRO/NRSC, 2021), which forms the habitat of cats like the Caracal, Asiatic Wildcat and Jungle Cat.

Land designated as wasteland is often converted to agriculture or developed for other use, more recently to large-scale renewable energy projects (Vyas et al., 2022). Such land policies must be reviewed and drafted within an ecological framework.



C National Natural Rescurces Management Bystem, IBAD, 2018

Figure 1: Land Use Land Cover Map of Madhya Pradesh. Sourced from BHUVAN (ISRO/NRSA 2021. Downloaded on 03 January 2023).









Since a significant proportion of small cat populations also reside outside the PA network, conservation plans focused on them must consider habitats that overlap with human use. Crop fields simulate their natural habitats, and several small cat species occur in agricultural fields across the country. During the breeding season, several kittens are found by locals who rescue them out of goodwill but are not always able to identify or even rear them (Naveen, 2012). The extent of loss due to the breeding season of small cats coinciding with the crop harvesting season is not known and is worth exploring. Awareness workshops, guidelines, discussions and educational material on small cats aimed at farmers and other locals would help reduce losses considerably.

Since the major diet of small cats is rodents, they provide vital ecosystem services to the farmers by controlling crop pests. A study in Sariska Tiger Reserve, Rajasthan, estimated that just one Caracal and one Jungle Cat together consume up to 5000 rodents per year (Mukherjee et al., 2004). Additional studies such as thisare required to quantify the benefits that small cats provide to humans. Such information should be communicated to farmers and other locals to convince them about the need to conserve small cats. Citizen science is gaining prominence in India, and it provides a platform for citizens from various walks of life to participate and contribute to society through scientific knowledge generation.

Involving school, college and university students and other interested locals would not just build capacity for monitoring small cats but also spread awareness regarding their habits and services to humans (Mukherjee et al., 2021). Biodiversity Management Committees (BMCs) should be involved in monitoring the status of small cats around villages and this should be reported in the Peoples Biodiversity Registers, as mandated by the Biodiversity Act (2002).

#### **Conclusions:**

With six to eight species of cats, Madhya

Pradesh is among the richest states in the country with respect to cats. However, the presence of some species, such as the Caracal and Leopard Cat in Madhya Pradesh is only speculated, and focused surveys are required to document their presence in the State. For the Caracal, scrubland in PAs and areas designated as wasteland should be the focus of surveys since the cat inhabits open habitats. Such areas outside the PA network are under severe threat of conversion to other forms of land use.

For the Leopard Cat, forests in the eastern part of Madhya Pradesh, in Kanha and Bandhavgarh Tiger Reserves should be surveyed. Other species like the Jungle Cat, Asiatic Wildcat and Rusty-spotted Cat should be monitored over the long-term to study any population trends. Capacity-building workshops should be organised for various stakeholders, including school and college students and interested locals. Surveys and monitoring should involve locals and Biodiversity Management Committees.



Image Courtesy: Dharmendra Khandal





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#### **K. Narasimmarajan** Conservation Biologist Coimbatore, Tamil Nadu

He has been intensively working on otter conservation since 2014 in Nilgiri biosphere reserve region and other parts of the Tamil Nadu State.

He is pursuing PhD on Ecology of two south Indian otter species namely smooth-coated otter and Asian-small clawed otter, where as he intensively studied their distribution, resource use pattern, food habits, behaviour of temporal activity. He has a vast experience in studying aquatic ecosystem biodiversity and conservation through stakeholders participation and associated faunal species i.e. muggers, freshwater fishes.







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#### **Mr. David Raju** Naturalist, Kerala

Over 18 years of experience as a senior Naturalist in Southern and Central India. He had always been interested in wildlife and with specific interest and expertise on multiple taxa like Birds, Mammals, Butterflies, Reptiles, Amphibians and his first love Dragonflies. He has worked at some of the leading wildlife lodges in India, currently working at Wayanad Wild, A CGH Earth Experience hotel in Kerala.

David has co-authored three books-'Dragonflies of Kerala', 'A Photographic Field Guide to Wildlife of Central India' and 'Wildlife of South India'. He was part of the team that discovered 12 species of frogs and two species of geckos in the Central India and Western Ghats. He was conferred the prestigious Lodge Naturalist of the Year Award by Sanctuary Asia and Toft in 2014.











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#### **Mr. Seva Ram Malik** SDO, Rehli, MP Forest

Presently serving as Sub divisional Officer at Nauradehi wildlife Division Situated in central Indian states of Madhya Pradesh. Worked hard for tiger translocation program for which managed to relocate 11 villages from the sanctuary area and development of habitat for tigers and other fauna. Besides this developed many water bodies using water management skills to name a few Barpani pond is the famous one. Working day and night to make a breathing space for tigers and also securing the possibilities for cheetah introduction program.















#### **Dr. Nirmalya Chakraborty** Founder President & Editor Jungle Rhythms, Pune

Dr. Nirmalya Chakraborty is a passionate nature lover & a wildlife explorer. He has traveled to various pristine habitats & has documented unknown animal behaviour & key issues of conservation through strong photostorytelling & wildlife documentaries. He has travelled to Yellowstone to study wolves' behaviour, tracked the rare Hawaiian goose in the volcanic islands of Hawaii, embarked upon an expedition up to the Alaskan Arctic & studied impacts of climatic change on the last remaining Beaufort Sea population of polar bears. His oceanic quests have been on the migratory humpback whales in the North Atlantic Ocean.











R S C 





#### Mr. Dhiraj Das Research Biologist, WRCS, Pune

He is a Masters degree graduate in Environmental Biology and Wildlife Sciences from Cotton University, Guwahati. He is an avid wildlife enthusiast and love spending time in the forests. He is currently studying Forest Owlet in Madhya Pradesh with WRCS. Previously he has also worked on Amur falcons in Nagaland and Manipur and also studied the avian diversity in Deepor Beel Ramsar site. For a brief period he has also worked on Pikas in the transhimalayan landscape in Ladakh. His areas of interest includes habitat ecology and conservation ecology.







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Image Courtesy: Dhiraj Kumar Das

# WRCS Research on Ecology and Conservation of the Forest Owlet in Madhya Pradesh

By Dr. Prachi Mehta, WRCS, Pune

## Current Conservation Status of the Forest Owlet

- The Forest Owlet is a endemic to India and is declared as Endangered under the IUCN Red List because of its isolated population.
- The Forest Owlet is declared under Schedule 1 under the Indian Wildlife (Protection) Act 1972.
- Till date, the Forest Owlet is found in the three states of country: Maharashtra, Madhya Pradesh and Gujarat and from Silvasa, the UT of Dadra and Nagar Haveli and Daman and Diu.
- Till date there are 14 confirmed locations of the Forest Owlet Populations in the country: Maharashtra has four populations: Melghat Tiger Reserve, Tansa Wildlife Sanctuary, Nandur-

bar district and Harsud Forests. Madhya Pradesh has three populations: Khandwa District, Burhanpur District, and Betul District. Gujarat has confirmed population in Purna WLS and Navasariand Valsad district. Recently a population was reported from Silvasa, near Dadra-Nagar-Haveli Union Territory bordering Gujarat border.

# Threats to Forest Owlet and its habitat

- Loss of habitat due to uncontrolled tree cutting by local communities.
- Removal of cavity-bearing trees due to timber logging in Reserved Forests.
- Forest fires in forest owlet habitat.
- Misconception about owls, use of owls for sorcery and pet trade, poaching of

owls for its.

- meat and body parts. This is applicable to owl species in general.
- Action Required for Conservation of Forest Owlet.
- Understanding the factors responsible for lower breeding success of the Forest Owlet.
- Protection of nesting, roosting sites of the Forest Owlet from the known locations.
- Reducing tree cutting pressure in forest owlet habitat.
- Reducing incidents of fires in the forest owlet habitat.
- Training field staff for identifying owls, their nests and roost sites.
- Generating awareness among local communities for conservation of owls and its habitat.





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#### **Mr. Sanjeev Yadav** Coordinator Aquatic Biodiversity, WWF-India

He is the Senior Coordinator at the Rivers, Wetlands & Water Policy Division, WWF India. He has been working on the conservation of key freshwater species since 2009. He is leading the freshwater Biodiversity work related to Ganges River Dolphin conservation, Gharial reintroduction and Community-led freshwater turtle conservation programs in River Ganga.

















#### Mr. Sunny Joshi

Senior Project Officer, Raptor Conservation, WWF-India

He has done a Master's Degree in Environmental Science from Doon University in 2017.

He has 7 years of experience in vulture conservation in Uttarakhand. He wrote my Master's dissertation thesis titled, "Population Status and Threat Assessment of Vultures in Doon Valley, Uttarakhand", funded by Conservation Leadership Programme (CLP).

After that, he worked at the Center for Himalayan Ornithology at Himalayan Institute for Sustainable Environment and Research (HISER) Society in different capacities. He is trained in faunal taxonomy from Zoological Survey of India and restoration of degraded habitats from Earth Corps, Seattle, USA.

In WWF-India, he is working as a Senior Project Officer in the Raptor Conservation Programme. His work at WWF-India includes smooth project implementation i.e. Raptor Hotspot Monitoring, Nest Monitoring, Raptor Exhibition, Education Outreach, Community Engagement and Advocacy in Terai Arc Landscape (TAL).





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#### **Mr. Sudheer Kumar Jena** Project Fellow, ZSI, Central Zone, Jabalpur

He is a project fellow in Zoological Survey of India, Central Zone Regional Centre, Jabalpur in the project entitled "Diversity of scorpions (Arachnida: Scorpionida) in Madhya Pradesh with studies on ecology, biology and associated traditional knowledge about medically important species". He is pursuing his Ph.D. from Ravenshaw University, Cuttack, Odisha. He has completed his M.Sc. and M.Phil. from Central University of Odisha. Previously he has worked on several projects in various institutions. His experiences include biodiversity inventory and assessment, ecological studies on cave fauna with special focus on invertebrates. Currently he is working on taxonomy, biology and behavioural studies on scorpions.















Image Courtesy: Dr. Pratyush P. Mohapatra

# Scorpions: The enigmatic arachnids, with notes on scorpion diversity in Madhya Pradesh

By Sudheer Kumar Jena, Pragya Pandey and Pratyush P. Mohapatra, ZSI

Scorpions are familiar to humans as bizarre arachnids with a pair of handlike pincers, a segmented tail arched with a stinger at the tip. They are among the most primitive animals thought to come to the surface from the aquatic environment around 435 million years ago. Scorpions are also associated with human culture since early civilization and in Greek mythology, Orion, the son of Zeus, used scorpions as effective weapons to defeat Artemis. Scorpio, the eighth zodiac sign in the constellation, is named as it resembles a scorpion. This animal group has been part of the mythology and folklore of many civilizations all around the globe. Scorpions are worshipped in many cultures as good and evil characters. But a common perception about scorpions always goes towards an aggressive and dangerous animal.

#### How many species?

There are 2744 scorpions found all over the world and the number is increasing day by day. So far, 151 scorpions have been reported from India. The number of identified species of scorpions is considered to be far less than actually expected. This is due to the survival adaptation of scorpions in extreme habitats.

#### Scorpions of Madhya Pradesh

The state Madhya Pradesh is very diverse in terms of biogeography. In terms of scorpions, Madhya Pradesh is home to 24 species (4 Families and 8 genera). Seven species have been described from the state in the past. One endemic scorpion i.e.-Scorpiops pachmarhicus Bastawade, 1992 is only known from two localities of Pachmarhi Biosphere Reserve.









#### Need of the hour

Scorpiologists are still in the process of knowing more about the exact species diversity in scorpions, which is evident from the discovery of new species. With the advancement of molecular taxonomy the cryptic diversity of species is getting unravelled. Being a lesser know group, scorpions are facing the problem due to use of their venom in drugs and some therapeutic medicines, in international live pet trade and in traditional medicines.

The international demand for this group is an emerging problem for the Indian scorpions as none of the scorpion species are legally protected. Its necessary to identify and check the trading routes, traded species and trading hotspots for their conservation.



Image Courtesy: Sudheer Kumar Jena













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#### **Dr. Randeep Singh** AMITY University, New Delhi

He is currently working as an assistant professor in Amity Institute of Forestry and Wildlife Amity University Uttar Pradesh, Noida. He did his PhD degree in wildlifeecology from Wildlife Institute of India, Dehradun. Dr. Singh has been actively involved in research mainly focused on carnivore ecology, natural resource management and biodiversity conservation. During his PhD research work with Wildlife Institute of India (2005-2011), he has refined the non-invasive methods used for population estimation of tiger (Panthera tigris) and quantified the impact of spatialtemporal variation in habitat use pattern and habitat suitability analysis of tiger. Presently he is teaching post-graduate student of Wildlife Science in their course modules and conducting field visits and mentoring students enrolled in ecological work.









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#### **Alok Govind Sheode** Lecturer, Prabodhan, Jr. College Buldhana, MH

Prof. Alok Sheode, MA Eng. B.ed. was a junior college teacher, now taken voluntary retirement for the study of insects... Pursuing insect photography since 2008... have clicked roughly over 300 species of insects in Buldhana forest area... conducting lectures on insect diversity, insect behaviour and personality traits of insects.. have conducted 240 lectures so far... strongly feel that insects have emotions just like humans.. working on making Entomology popular among common people.







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**Mr. Manpreet Singh** Research Scholar, IIFM Bhopal

He has completed his M.Sc. in Environment Management from the Forest Research Institute, Dehradun, and his M.Phil. in Environment and Sustainable Development from Banaras Hindu University. He has also completed a PG Diploma in Animal Protection Laws at NALSAR, Hyderabad, and another PG Diploma in Tribal Development Management at NIRD, Hyderabad. At present, he is pursuing a Ph.D. on the topic of Response of small carnivores to environmental change in the Central Indian Highlands under the joint supervision of Dr. Advait Edgaonkar, Assistant Professor, IIFM Bhopal; Prof. Ruth Defries, Columbia University; and Dr. T. Ramesh, Principal Scientist, SACON, Coimbatore. He has recently completed a 2-year independent project as a principal investigator on Hunting Practices of the Pardhi Tribe in Central India funded by the Defries Bajpai Foundation, USA

# Status of small carnivores in Madhya Pradesh: Threats, Conservation Challenges, and Ways Forward

By Manpreet Singh, Research Scholar, IIFM, Bhopal

Small carnivores play an important ecological role in the variety of habitats they inhabit. For instance, jackals play the role of excellent scavengers by consuming the prey remains of other apex predators, and civets play the role of seed dispersal agents by defecating intact seeds of many fleshy fruit species after gut passage. Many of these small carnivores' species also control the rodent populations in agriculture fields, thus aiding the farmers in significantly reducing the crop damage afflicted by the rodents. Further, by controlling these rodent populations, small carnivores aid in disease control, which can be spread by these rodents.

In addition, species like jackals are crucial reservoir hosts of many infectious diseases, which are important from a medical point of view. Thus, understanding the status of small carnivores is of paramount importance, as they provide key ecosystem services and are an integral part of ecosystem functioning and structure.

A threshold criterion of 16 kg distinguishes these extrinsic-regulating species from intrinsically-regulating apex carnivores. There are 229 species of small carnivores worldwide, with 17 species in Madhya Pradesh meeting this criterion. Out of these 17 species, 12 fall under the "least concern" category, 1 falls under

the "endangered" category, and 2 species each fall under the "near-threatened" and "vulnerable" categories. Although most of these 17 species may fall under the IUCN "Least Concern" category, the population of many of them still continues to decline. Also, these small carnivores have received disproportionately less attention, both from researchers and policymakers, compared to their large counterparts. According to IUCN threat classifica-

tion criteria, biological resource use is the major threat faced by many of these small carnivores. Biological resource use encompasses sub-categories like hunting and collecting terrestrial animals.









These species are being hunted for a variety of reasons, such as the use of mongoose hairs in the paintbrush industry.

According to an estimate, the hair from 1 mongoose can be utilized to make 45 paintbrushes, and 50 mongooses can produce 1 kg of hair. The number of paintbrush seizures reported by the Wildlife Crime Control Bureau indicates that while more than 51,550 paintbrushes were seized during the 7-year time period 2007–13, this number has staggeringly risen to 79,021 in 2018 alone. A recent study conducted by me on the hunting practises of the Pardhi tribal community in the different geo-political regions of Madhya Pradesh revealed that members of the Pardhi tribal community still continue to hunt due to their poor socio-economic status and the lack of alternative livelihood options. Although hunting cases have plummeted significantly since the Wildlife Protection Act came into effect, hunting pressure is still there. Furthermore, there are success stories, such as the change in perception of Pardhis in the Panna landscape as a result of the active work of the forest department and many NGOs involved; however, these success stories are few, and

the Pardhi tribal community's reliance on hunting or other menial jobs to earn a living points to the hunting threat looming large on these small carnivores. Apart from biological resource use, agriculture & aquaculture, and residential and commercial development pose the second and third most grave threats, respectively, to the populations of these small carnivores. Road kills through vehicular collisions are also a non-trivial factor that affects the survival of these species, especially the ones that thrive in agricultural land use, such as jackals and jungle cats. Furthermore, the threat of road mortality is heightened along the landscape's major highways.

The challenge of monitoring these small carnivores is that, as stated earlier, many of the species thrive in agriculture, scrub forests, or the land use classified by the government under the so-called "wastelands" category. We do not have long-term monitoring trends for these species in the reserve forests, so monitoring them in agricultural land use or wastelands seems like a far-fetched dream. The current system must also be revamped to be more inclusive of biodiversity outside of protected areas.

The so-called "wastelands" are actually the places where many of these species thrive, and a lot of revision needs to be done on this front. Also, engaging common people through citizen science programmes can go a long way towards understanding the distribution of species in space and time. Although these programmes are becoming increasingly popular, spreading awareness and increasing their popularity in remote or inaccessible areas remains a challenge in order to realise the full potential of these programs. The research focus also needs to be geared towards understudied species such as the rusty-spotted cat, honey badger, dhole, ruddy mongoose, and Eurasian otter. The research also needs to be conducted on how anthropogenic pressures and human-modified land use changes in the agriculture-forest mosaic landscape of Madhya Pradesh affect the population demographics and distribution of these small carnivore species. Further, the role of tribal communities in conservation management cannot be emphasised enough; their involvement at the grassroot level in conservation initiatives can go a long way in ensuring the long-term survival of these species.



Image Courtesy: Manpreet Singh





E X 9 m













1<sup>st</sup> National Conference on Lesser Known Species of MP



E X 9 m











1<sup>st</sup> National Conference on Lesser Known Species of MP











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abore (surgifies stifting)। संस्था के कारों में अलगोर पर उपरार सालवारी उपलब्ध वहां है। सालवारी म (तेने के कारण ही सांग कहां देखते ही मार हो है, उनकी सालवीकिता पर ही कि कुछ अपनी का स्थानित इसलियों की संस्थार सालवार कि कुप प्रदर्शने नहीं ही है। उनके अलग इनका उपले पर की किएसि के parter में होना है। सिंग्डुओं में कियर पाल कर रहे डिकल्में कुरेन कुपर अंक में दानितर में है कि है। पाल सालवारी किप्सुने के संस्थाप में कियर पाल कर रहे डिकल्में कुरेन कुपर अंक में दानितर पर के देने के एस सालवारी पाले संस्थाप में अपनेतीति राज का सालवार में दी यह सार्वितमा संसार दावा कर के देने के सालवार आपनीति की मां कि सालवार करने हो डिकल्में कुरेन कुपर अंक में दानितर पर कारणीति के संस्थान को ने कार आपनीति की नहीं संसारण करनेका साल तरेहर की इन्दोंगीन साल साल स्थार किया पर अपनीति होता आपनीता में विष्यु की आजात की पाल पालिय का सालवार प्रात्म कि के सालवार का साल कि प्रात्म का कि साल आपनीता की सालवार करनेका साल तरेहर का सालवार का सालवार के सालवार का सालवार कार्य के बाल सालवार है, लेकिस सालवार के सालवार साल कि से सालवार साल कि साल का क्या के साल कि साल पाले के सालवार का आयोज सालवार है, लेकिस सालवार का साल के से सालवार साल कि सालवार के सालवार पाल का सालवार के सालवार सालवार का सालवार के की सालवार का सालवार की कि सालवार का आयोज सालवार का सालवार के सालवार का साल के की सालवार का सालवार सालवार के सालवार की सालवार सालवार का सालवार का साल के की सीतार साल कि साल कि साल सालवार के की सालवार सालवार का सालवार की का सालवार का साल के की सालवार का सालवार का सालवार का का की सालवार का साल सालवार की का सालवार की का सालवार का सालवार का साल का साल के की सीतार का सालवार का सालवार का सालवार का सालवार का





36 Souvenir 2023







## **MEDIA COVERAGE**

Department of Ferreri, Madhya Pradech #

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कार्यक्रम के सामान मान्यूय में जितक 21 जानवी 2023 को प्राहम प्रतिक्रि के प्रात है हो, अनुस कुमा सीवाजब, साय सरीव, स्वात्मांय पाना सैस्ट्रीआज की प्रतिक्रि में प्रति के सार्थ में के प्रात के सीवाज प्रति , स्वातिक प्रा सरीवल पी पर से प्रति क्रिस कार्यन, प्रातंक्रम प्रात प्राय प्रात प्रात कर प्रति का सार्थ में स्वात प्रतिक्र सरीवल में प्रत से प्रतिक्रिय स्वात्मित प्रतिक्रम प्राय प्रात प्रात करतां प्रात्म के सीवाज स्वात प्रतिक्र का सर्वक्र में सार्थ में प्रतिक्र से प्रतिक्र कि सिंग्रे क्रिस्ट के स्वात्म प्रतिक्र क्रांड मा स्वात स्वात्म प्रत से सीवाजी के सार्थ प्रात्मा प्रत के सार्थ के प्रात के सीवाज सार्थ के सार्थ के स्वात सीवाज के सीवाजी पा के सीवाजी स्वात से सार्थन प्राय प्रात के सार्थ के सार्थ के सार्थ के सार्थ के सार्थ के सार्थ के सार्थ

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## भारत में पहली बार भोपाल में आयोजित हुई कांफ्रेंस





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## नेशनल कान्फ्रेंस का आयोजन आज से



तमत जाता, मोपता प्रदेश की तमयानी मोपता में उठन से मध्यप्रदेश की लेतर जीत हिप्रसंत पर से दिवलीय संजयत कार्यन का उप्तयेगन सोते मा रहा है। इस कार्यन्त का उप्तयेगन कार्यनम परिसर रिपर एको के सामार में सेमा enden it masten it ook ook ook saalkel is daalme ale Adaale oo Red ber sege list aadit



#### लैसर नौन स्पीशीज ऑफ़ मध्य प्रदेश पर प्रथम कार्यशाला

States of Loss of Loss



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हम सार्वाला में कांड प्रदेश का फिल्फ, कीमें केंद्राज प्रेल्डू के लिएक्ट्री (पुरुष), उस्तू उस्तू उंग्-वीडार, उड़ान सम (साराम्पर), सार्वेण सार्वे केंद्र हा सार्वे निर्वाणी (प्रेर्वेल्स्ट्रूप) को दुर्वेडीका सील्ड्र्ड कीस इंडिंग स्व काराजी में जिसका सार्वे के हिंदू पर सारांडाल में पर की प्रेर्डु क्लिस्ट, दिखारी की साल सहुत्य परेतिसार सार्व्य के लिए फिल्म पर अपने 2023 सम साले अवस्थराउठाटर की हात्यक्ष्यकार की साल सहुत्य परेतिसार कार्य्य के सिंह राज्य सारांडी है.



बिलुप्त हो सी प्रजातियों का संरक्षण करें केसोटिया



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## **MEDIA COVERAGE**



एसएनएचसी, इंडिया द्वारा मध्यप्रदेश राज्य जैवविविधता बोर्ड, भोपाल बईस संस्था और म.प्र. टाइगर फाउंडेशल सोसायटी के सहयोग से आयोजित दो दिवसीय नेशनल कांफ्रेंस ऑन लैसर नोन स्पीशीज ऑफ मध्यप्रदेश का आयोजन दिनांक 20 एवं 21 जनवरी 2023 को एप्को सभागार में किया गया।

#### #JansamparkMP



MoEF&CC and 3 others

11:47 PM - Jan 23, 2023 - 1,163 Views

2 Retweets 1 Ouote 13 Likes

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Department of For... @minfor... + Jan 23 ... यह भोपाल शहर में आयोजित भारत की पहली कांफ्रेंस है जिसमें विषेशज्ञों ने लैसर नोन स्पीशीज यानि ऐसे वन्यप्राणी जिन्हें कम देखा जाता है या दुर्लभ हैं एवं जिनपर शोध कम हए हैं, पर चर्चा की और प्रस्तुतीकरण दिए।

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# भ्यप्रदेश राज्य जैवविधिवता बोर्ड, जेपाल बहेश संस्था और १८३१ ति, हेडिया हाल व फरांडेशन सोशायरी के सहयोग में आयोजित से विवसीय नेशनन कांग्रेज और तैसर गोन ज ओंक मध्यप्रदेश का आयोजन दिरांक 20 एवं 21 जनवरी 2023 को एफरे समाधार में 7 PM - Jan 23, 2023 - 1,965 Vi









सम्मापित शिक्षण भी नीरज सक्सेना जी से एक STREET, STORE



कला भवन सभागार में आयोजित याहपर महोत्सव ही जानकारी कथक नृत्यांगना श्रीमती वी अनुराधा सिंह से



वेशानल क्योंक्रेस ऑन लेवार जोन स्पीक्षीज ऑफ एमपी की जानकारी एस एन एव सी संस्था प्रेसिडेंट विकास सिंह बचेल और भोपाल बई संस्था की फाउंडर मेंबर संगीला राजगीर से

इन तीनों जानकारियों को आप पुनः सुन सकते हैं सुबह 11:30 से 103.5 FM विविध भारती भोषाल पर9c



भोपाल सिटी भारकर 08-01-2023

भोपाल में पहली वार एफो ऑडिटोरियम में होगी लैसर नॉन स्पीशीज ऑफ मध्यप्रदेश पर वर्कशॉप

सिटी रिपोर्टर । भोकल में पहले का ऐसे जीव-जंतुओं पर कार्यसाल का आपीजन किया जा रहा है, जिनके करे में बहुत कम जानकारी उपलब्ध है। यूं तो हमेला बाप, चीतन, मोर आदि के को में चर्चा होती रहती है. Ret. लेकन बनो एवं जलीप क्षेत्रे में पए जने करो बुझ जीव-जंगु ऐसे हैं, जो अत्यंत दुर्लभ हैं एवं इन पर तोप कार्य बहुत ही कम हुए हैं। ऐसे ही प्रजालिये पर पार्थ करने और जणस्वता बहाने के उद्देश्य में 20 और 21 जनवरी को लेगर नॉन स्वीलीज ऑफ मध्यप्रदेश पर आधारत पहल कार्यताल का आयोजन एफो सध्यपर में होण। यह कडेलॉप एसएनएकरी इंडिया हा। मध्यप्रदेश राज्य जेवविविधत कोई, भोपल बहुर्म संस्था और मध्यप्रदेश टाइगर फाइंडेशन सोसाइटी के सलपेग से लेगे।

#### वर्कशॉप के लिए रजिस्ट्रेशन शुरू

इस दो दिवसीय कार्यसाल में केरकल, इंडियन पुल्फ, इंट्रियन स्त्रीमा, परिस्ट आइलेट, feige लीवन, लेसर प्रतिकन, इंडियन और म ग्रदेश में पई जाने वाली बिच्चू और सरीसूर की प्रजानियें पर चर्चा होगी। साथ ही भीडण्य में इनके संरक्षण के लिए रणनीति त्रेपार को जाएगी। इस कार्यप्राल में यभावदेश कर विश्वार, बॉम्बे नेपुरात क्रिट्री संस्थाइटी (मुम्बई), उभर्नुडम्ब् एक इंडिया, टाइगर बाय (राजाभार), स्वर्वेग आहे सेंटर कॉर ओर्निचेलीजी (कोपम्बट्र) और जूलीविकाल सोसाइटी ऑफ इंडिया आदि संस्थाओं से एकापर्ट भाग ले रहे हैं। इस कार्यप्राला में भाग लेने के लिए सिसभेर, स्टूडेंट्स और एनवाफसिंट लावर रॉजस्ट्रेशन करा सकते हैं।

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### **MEDIA COVERAGE**



### मप्र के दुर्लभ जीवों के संरक्षण की तैयारी

राज्य के विवेधवा को, भोवान वहुने स्वान कर प्रायम के का है। का के स्वार्थक से समस्यपत्र विवेध हुन कार्यमान कर आगंत्रक कांगा हुन्छ के स्वार्थक से समस्यपत्र विवेध हुन कार्यमान कर आगंत्रक कांगा हुन्छ सेकेटर, डीटकर कोटर सांहर क्या में पहा करे कहा किया के स्वार्थक नांत्र

## मप्र के कम जाने-पहचाने जीव-जंतुओं पर होगी वर्कशॉप

Mobile an. URTIMOADS

प्रदेश त्युका आइरिशन it wurdte it fatte se ner Ra इस से डियमीम मार्गसाल में बेतनान, डीडपन मुल्ब, डीडपन स्वीमा, महिन्द्र अडालीट, जिस डीलबिंग, तीयर प्रतीरेवन, इंडियन औटर व प्रदेश में पई जाने कारी विश्व दर्भ करेड्य प्रजाविये यह चर्चा डोनी रहां चीरण ये प्रमंद संरक्षण हेडु रण्डीत केवर को जाल्दै। रह कार्रहारह एको सथापत में आपेजित की जार्ग्स। इस अर्थताल में भार लेने हेड् is first #584003002 11 #319524353 97 108 107 108 107



## भोडला प्रदेश में पह की को हुनेद कर सोव और अनेद सनुजी पर 30 ब 21 जनवरी को दी दिवादिद रॉप्ट कार्यवाल सोवल में होने ज की में पह

प्रसारिती के साराप के सार्थ्य के राजवेत तिरा को आगंग प्राप्त क्ये के जुनात किस्ट्री मोमाप्सी, सम्पूर्णकर्ष्ट्रांच की पर, स्वान की व (साराव्या) मार्गम सार्थ सेरल की अतिनेत्राजी (को वक्ष्यूर) के संस्थार सार्थन तरं

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रेकत में प्रदेश में चरती बार देखे जीव- अंतुओं पर कार्यसाल का अयोजन किया 18 मन हे जिनके को में बहुत कम जानवारी भाग में बहुत क्ये आगवान उत्तलब है। कुछ जीव- जंहु ऐवे हैं के आवंड हुर्गय हैं दर्भ इन क संघ्य कर्म बहुत ही कब हुए हैं ऐसे ही प्रजनियों पर क्यों बरने व जनकर्मता बहुले के लोटल से 20 और 21 जनकी को मध की बल जाने-पराध्वनी प्रजातियें पर aufit per weinen ut आधितः हमरूरत्वते इतिष इत मा राज्य वैषयित्वन योत

First workshop on lesser known species from January 20





प्रधान मुख्य दन संरक्षक एवं दन बल प्रमुख रमेश कुमार गुल भे कार्वशाला के पोस्टर का विमोचन किया।

## अत्यंत दुर्लभ वन्य प्राणीय और जलीय जीव-जन्तुओं के शोध पर कार्यशाला भोपाल में २०-२१ को

राजेसी, भोपाल। प्रदेश में परली बार ऐसे दुर्लभ जीव जल्हजी के शोध प केलियत दो दिनी कार्यसाला २०-२१ जनवरी को भोपाल में आरोजित सेग कल प्राणिहों में बार, तेल्ट्रा, चीतल और मोर ऐसे वल्द जीव है जिल पर अनेकालेक शोध होते रहते हैं किन्तु वलों और जलीव क्षेत्रों में पाए जाने वाले आरांत दुर्लभ औव-जान्तुओं पर शोध कार्य और इस तरह को प्रजाति पर वर्षा और जगस्थाता ब तेले के लिए 20-21 जनवरी को लेमर जीन स्वीहीज और महाप्रदेह पर कार्यहाल आरोजित की जा रहे है। मध्र, राज्य जेव विविधल बोर्ड भोपाल बईम संस्था और म.प्र. टाइगर फाउडेशल सोसावटी के सरवोग से एसएमएवसी की इंडिया द्वारा कार्वज्ञाला आवोडि को जा सी है। कार्वज्ञाला में केरेकल, इंडिवन कुल्फ इंडिवन, स्वीमर, फोस्ट आउट लेह दिवा डॉलीकन, लेसा पलोपिकन, इंडियन औटर सहि म.प्र. में पए जाने वाले बिच्चु और अपीमृथ प्रजातियों पर गरन चर्चा बाट इनके संखण के संदर्भ में रणलीति तैवार को जाठगी। कार्यसाल में दह रोंगे शामिल बाम्बे लेडुरल हिस्ट्री सोसायटी (मुम्बई), इब्लू, इब्लू, एफ-इंडिया, टाइगर वाव (राजमवान) सलोम अली सेंटर वॉर ओनिवोलॉजी (कोर्टाबट्रा) जुलॉजिकल सोसावटी ऑफ इंडिया आदि संस्थाओं सहित क विभाग के विषय-विज्ञेषद्वा भाग लेंगे। इस मत्तवपूर्ण कार्यशाला में भाग ले वाले कोवकर्ता, विद्याची और पर्यावरण देनी सङ्घरक पंजीवनरण करवाले लिए 95840-03002 और 63193-24353 पर वाट्सएप के माळम से लिक का कर सकेते।

#### सहरा स्वर्धेश

21 Jan 2023

दो दिवसीय राष्ट्रीय सम्मेलन में विशेषज्ञों ने जताई वित

## पक्षियों का जीवन संकट में डाल रहीं पवन ऊर्जा परियोजनाएं

th 2, and a pain tool where a जलपारी को लेकर कुछी प्रयोग सेख ने अन्य विज्ञानिक सोन प्रमुहा किया और स्वां हो से अनि magnes to fate and by

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ातीका देश के संपुथ्यत के साथ पत तिथे जनवात किन्दु भी है। करीब करने किन्दु भ वॉनियेलॉने को फैक्टीका में सीचित पुजर्म कर प्रदेश में पत करने करने जिकियों व के परिवाहरून के केस मंदर और के स भारतीय मंदिने मा केसाम महिम्म मा रही क इतिहाह हु ने दिवाल मा अन्ते अनुस्ती क server factor \$1.

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#### al: First workshop on lesser known species from

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nd in the state will be organised by SN+C India in association with Madhya Prodesh State diversity Board, Bhopal Birds Association and WP Tiger Foundation Society from January 20. toy event will be field of IPCD Auditorium in the oby

erta hum atate lonot department, Bornboy Nesurol Hatary Society (Marebol), WH india ar Washi (higoshari), Italim Al Centre for Direthology (Celmisotore) and Zosiegical Socie re) and 200isgical Society of ndia will take port.

Muhammed Khokique Ihem Shapat Binds Association told Free Free Ress Bot Corocol, Indian Wolf, Indian Bilimmur, Rowel Owlet, River Dolphis, Lesser Ruricon, Indian Offer, scoppler and replike species found in Modhya Pradeath would be discussed and plane would be prepared for Their

where, students and environment and/waters can register themselves to parthigude in t op. The workshop is being organised on onimols about which very little information is ole. "We always talk about tiger, leapant, childs, peacook etc but there are some animals found in forests and equatic areas, which are extremely rare and very little research has been done on them," shallo



भोषाल (जबद्वनिया प्रतिनिधि)। विच्युओं के बारे में अण्योर पर th reveal if fells is therease of the second framewor carso लोग इन्हें देखते ही मार देते हैं, जबकि तामाफिताल यह है कि कुछ अत्यपिक जहारीजी प्रजातिगर्ने को सोहकर ज्याद्यातर किंग्सू जहारीजे with shill its pash, assent press provin set, distribut is pieces if she have the second se इलाल में भी होता है। यह जानकारी बिच्छुओं के संरक्षण को लेकर काम कर रहे किसची सुधीर कुमार जेवा ने भनियार को 🥧 modult feits qual sevence if smitfiles que surdamer if dis or and over electric coefficient is electric and electric coefficient ती गई। 'केटनल जाझेंस अग लेकर गोन स्वीक्षील आम मध्य प्रदेश fiture us applifitie gas applaned if fang of its airmat that scientifical de ateaner sub abase fibrileuefi il fibrare suos fibres ganhe करें में बहुत कम जानकारी है, लेकिन जंगलों के लगातर साम होने से से संकटणका प्रजातिकों में आणित हो गई है। कार्यसाल का anthrea gargergeredt, gfilten gen vig aven the filfbaun eld, भोगाल बहेब एवं मंद्र राहुगर प्रदर्शराव बीबाइटी के बाल्योंग के filmer servi

100.000 appear & underen de anglocae de arasistem suid mâtit de rere met ware und dad strature of all agree from the set \$1 well पूर्वते और यह प्रवीशन अंगुलर को थी जिल्हा सी है। करीक इसके काल्य प्रवृत्तन के लिये and and set with their as they star में प्रान की है। का सुलाल किया है देश के पत्ने वित्रोग्ध्रों के पता प्रत्ये और तीया के प्रतिदेश føre ve unifær d foadre unlerer i mfinn site in first strain rapid \$1.0000 marter if pant spatte ner firsten is seen spar offene itere melfere is spar selfere it सा सार्व्यन राज्यात्राण्डी हिंदा हत हता हव अवका पर मुंख्य का संपत्ना का इ.स. इस अवका पर मुंख्य का संपत्ना का

weater ow fieldings did, share who एवं सन्त प्रदेश टहाल कार्डितार सोन्हहरी के संपुध्त तल्बाचार दें किंग्द एक है। सुप्तांत सब के स्वतः प्रधाने तितः साथे तिपुरुत विद्युते प्रोधावती (परित्याप्रपाय) के स्वारण्य प्रितेश्वर हाँ, सुवीन साथहे ने स्वतः प्रदेश में प्रोप्त प्रितितः व खार्थतः प्रधी सी संस्था बिधे परी अपने अल्पन्तर के अत्यात पर sande is singly to the bh go was for tar चर्तवाल के तिने जाती है। कार हर पर जिल्ला की काम पर जुन्द एवं है। इसके तिने जिल्लाह ताची में प्रयोधनन प्राप्तन और भीवन्त्र को जनातीं को रेखने हुए स्थलित किसे का से प्रभत राज प्रभंत भी है। स्थलि बालवान में प्रमत्मवाट पेट काने पाली किलि लाह की हामको अल्पन हुन चीवची के तिन्दे पुरुष कर काल कर नहीं है। इस सेन्द्र हार इस कर की प्रतिकार भी कर भकते हैं कि पहन प्रार्थ नगर जार स्थानित होने हैं जार ति पान प्रती के बार स्थानित होने हैं, चुकि पा बाथ प्रांच्या का होने हैं उन्होंको प्रान्तेत ही चही un sind in fie ? palet un pet of ate it cannot use that a



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Team **SNHC India** would like to thank our esteemed supporters to make our initiative "**1st National conference on lesser known species of MP**" dated 20 & 21 Jan 2023 a grand success.

We hope that you continue to support in our future Nature Conservation engagements too...

Regards Vikas Singh Baghel Founder President & Chief Editor Society of Nature Healers Conservators and Local Tourism Development, Bhopal



