



Slender loris *Loris tardigradus* E. Geoffroy, 1796

ZSI enews



सत्यमेव जयते



Ministry of Environment,
Forest and Climate Change



From the Director's Desk

I am glad to present the June 2021 issue of E-News to the readers. The month begins with the celebrations of World Environment Day 2021 on the theme "Ecosystem Restoration" coupled with online painting competition for school students and elocution competition through virtual mode Dr. Savita, PCCF & HOFF, Himachal Pradesh, Dr. Shailini Dhyani, NEERI, Nagpur and Dr. Lalit Kumar Sharma, Scientist, ZSI delivered lectures on the occasion. Subsequently, survey conducted in the localities in and around Sajnekhali range and Bakkhali, Frasergunj and Henry island areas from 07th to 11th June, 2021 to assess the effect of Yash Cyclone in Sundarban areas. International Horseshoe Crab Day was celebrated in collaboration with IISER Kolkata and Indian Horseshoe Crab Research Network on 20th June 2021. Some of the important activities performed during the month are submission of Conservation of Biodiversity for holistic development in Great Nicobar Island under Niti Aayog to Ministry of Home Affairs; offered the comments about the import of exotic freshwater turtles for trade in India; Sharks and Rays in CITES and Biodiversity Loss to MOEF & CC, import of *Pangasius* juvenile from Bangladesh for consideration of the National Committee on Introduction of Exotic Aquatic Species into Indian Waters to Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying. Consultations were made with Ministry of Statistics and Programme Implementation for preparation of Species diversity indices for different states, ecosystem and biogeographic zones of India. Ten Junior Research Fellows, two Senior Research Fellows, and one Post-Doctoral Research Fellow were recruited under the various research programmes of ZSI. Amidst the pandemic forced lockdown in most of the States of the country, ZSI could progress considerably well by identifying 10269 specimens comprising 1381 species. Furthermore, 8 new species of Hymenopterans, Crustaceans, and Amphibian were described during the month along with a record of 5 species for the first time from India. In addition, 40 species have been newly augmented to the National Zoological Collections while 46 DNA barcodes have been generated. Altogether 37 publications including 31 papers, 5 popular articles and 1 online checklist have been made during the month. I congratulate all the officers and staff of ZSI for making immense progress during the lockdown period.

Jai Hind

Dr. C. RAGHUNATHAN

Director [i/c]

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HEADQUARTERS, KOLKATA

One survey was conducted in and around Sajnekhali range, Bakkhali, Frasergunj and Henry Island areas from 07th to 11th June, 2021 to assess the effect of Yash cyclone in Sundarban areas; salinity, pH and temperature were measured and 14 water samples and 16 soil samples were collected along with other faunal groups. During the month four species were described as new to science: *Teretamon kapota* Mitra & Pati 2021 (Decapoda: Brachyura: Potamidae), *Triteleia flagellata* Abhilash & Rajmohana, 2021, *T. robusta* Abhilash & Rajmohana, 2021 (Hymenoptera); *Euphyctis kerala* Dinesh *et al.*, 2021 [Amphibia]. Following 18 species were augmented in the National Zoological Collection: *Aorolaimus intermedius* Suryawanshi, 1971 [Nematoda]; *Ignavia breviorarica* Gupta, 1962, *Lasiotocus sunderbanensis* (Dutta *et al.*, 1994) Dove & Cribb, 1998; *Pseudodiplostomum fraterni* Verma, 1936, *Allocreadium singhi* Rai, 1962 [Platyhelminthes], *Rhyothemis triangularis* (Kirby, 1889) [Odonata]; *Formica truncorum* Fabricius 1804 [Hymenoptera: Formicidae], *Megachile carbonaria* Smith, *M. cephalotes* Smith [Hymenoptera: Apidae]; *Culex vagans* Wiedemann, 1828, *Anopheles fluviatilis* James, 1902 [Diptera]; *Aspidimerus birmanicus* (Gorham, 1895), *Cryptogonus nepalensis bhutanensis* Bielawski, 1979 [Coleoptera], and five species of Lepidoptera. A virtual tour was conducted on ZSI-Research, Training and Extension Activities to B.Sc. Forestry Students, University of Agricultural and Horticultural Sciences (Shivamogga), College of Forestry Ponnampet, Karnataka, on 22nd June 2021. *Paramblynotus annulicornis* Cameron, 1908 (Cynipoidea: Hymenoptera) reported for the first time from India. Scientists reviewed 12 manuscripts for different journals and adjudicated two PhD theses, one from Berhampur University and one from PGI Chandigarh. Identification and Advisory services were provided to Pandit Ravishankar Shukla University, Raipur, India, Department of Zoology, Bijapur College, Karnataka India, and Department of Zoology, Sidho Kanho Birsha University, Purulia, West Bengal.



Rufous throated
partridge *Arborophila*
rufogularis (Blyth, 1849)

NORTH EASTERN REGIONAL CENTRE, SHILLONG, MEGHALAYA



Altogether 34 species including Reptilia 6 spp., Amphibia 6 spp., Pisces 13 spp., Mammalia 8 spp. and Crustacea 1 sp. were identified. Advisory services rendered to the Range Forest Officer, Jaintia Hills Division (W/L) Meghalaya. Two manuscripts were reviewed for the *Bulletin of Arunachal Forest Research and Uttar Pradesh Journal of Zoology*.

Collared falconet,
Microhierax caerulescens
(Linnaeus, 1758)



Kolula pulchra



Euphlyctis kerala Dinesh,
Channakeshavamurthy,
Deepak, Ghosh & Deuti, 2021

WESTERN REGIONAL CENTRE, PUNE, MAHARASHTRA



Forty-eight species containing of Coleoptera (5 spp.), Lepidoptera (21 spp.), Decapoda (1 sp.), Mollusca (5 spp.), Pisces (4 spp.), and Amphibia (12 spp.) were identified. A survey was conducted in Yawal Wildlife Sanctuary, Jalgaon, Maharastra, from 16th to 25th June 2021.

Teretamon kapota
Mitra & Pati, 2021

CENTRAL ZONE REGIONAL CENTRE, JABALPUR, MADHYA PRADESH



Maxates acutissima
Walker, 1861

Scientists of the Centre identified and registered 132 specimens comprising 71 species and 61 genera belonging to 30 families. The species identified belong to Insecta: 27 spp. (Butterflies: 8 spp., 4 families; Moths: 19 spp., 4 families; Orthoptera: 8 spp., 5 families) Mollusca: 8 spp., 4 genera, 03 families; Amphibia: 7 spp., 7 genera, 5 families, and Reptilia: 16 spp., 13 genera, 8 families. Local surveys were conducted to Dumna Nature Reserve, Jabalpur Katangi, Bijadandi, Panda Baba of districts Jabalpur and Damoh during the month.

Fodina stola Gue-
nee, 1852

DESERT REGIONAL CENTRE, JODHPUR, RAJASTHAN

Scientists at the Centre identified 255 examples containing 25 spp. of Hymenoptera, 15 spp. of Lepidoptera and 6 spp. of fishes.

Bombus simillimus
Smith, 1852



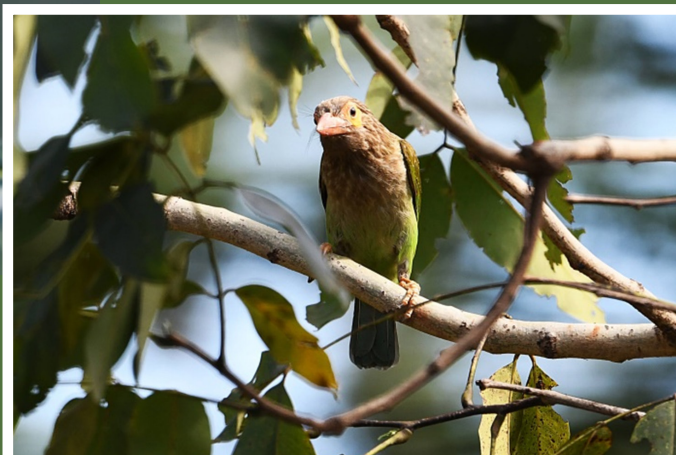
NORTHERN REGIONAL CENTRE, DEHRADUN, UTTARAKHAND

Jungle Babbler,
Argya striata
(Dumont, 1823)



Altogether 217 specimens and 56 species identified belonging to different faunal groups (i.e. 5 spp. of Protozoa; 5 spp. of Nematoda; 19 spp. of Lepidoptera; 9 spp. of Odonata; 2 spp. of Annelida; 6 spp. of Pisces and 10 spp. of Aves from Uttarakhand and Uttar Pradesh. Four DNA barcode sequences belonging to

Hymenoptera and Hemiptera specimens were generated and uploaded to NCBI with accession numbers. Two identification and advisory services were provided on the identification of Annelida and Odonata. Scientists of the Centre reviewed two research papers for national journals.

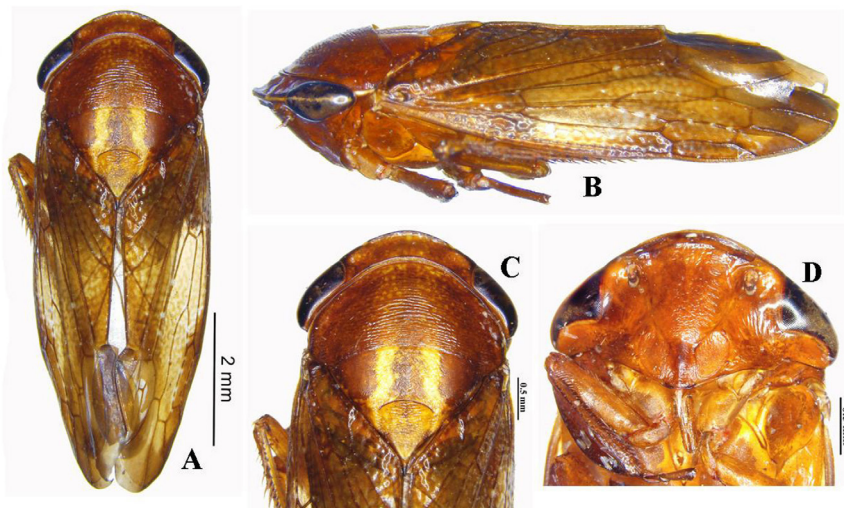


Brown-headed Barbet,
Psilopogon zeylanicus (Gmelin, 1788)

SOUTHERN REGIONAL CENTRE, CHENNAI, TAMIL NADU

Drabescus kemp Pruthi, 1930

Scientists of the centre identified and registered 1055 specimens belongs to 107 species of various faunal groups viz. Ephemeroptera, Odonata, Coleoptera, Hemiptera, Mollusca, Pisces, Reptiles and Aves. Four species of Ephemeroptera (Heptageniidae) viz., *Eperous (E.) aculeatus* Braasch, 1990, *E. (E.) bifurcates* Braasch & Soldán, 1979, *E. (E.) unicornutus* Braasch, 2006 and *E. (E.) unispinosus* Braasch, 1980 were reported first time from India based on the collections made in Arunachal Pradesh. Two species of land Mollusca (*Cyclotopsis subdiscoidea* (Sowerby, 1850) and *Mychopoma seticinctum* (Beddome, 1875) and one species of leafhopper (*Drabescus kemp* Pruthi, 1930 (Male)) were augmented to the National Zoological Collections.



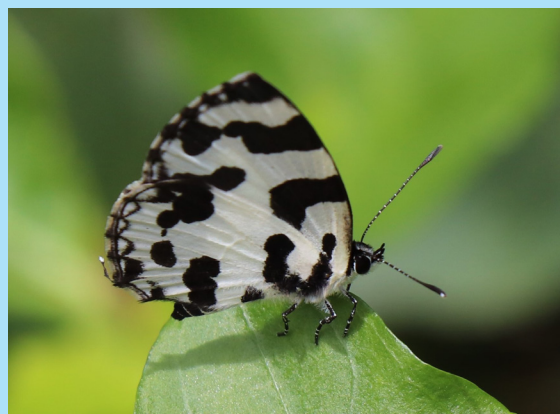
GANGETIC PLAINS REGIONAL CENTRE, PATNA, BIHAR



Identified and registered 553 examples representing 66 species, including 107 examples (34 species) of Lepidoptera 446 examples (32 species) of Mollusca.

Caleta decidia
(Hewitson,
1876)

Junonia iphita (Cramer, 1779)



HIGH ALTITUDE REGIONAL CENTRE, SOLAN, HIMACHAL PRADESH



Great Egret
Casmerodius albus
Linnaeus, 1758

Scientists of the Centre identified 278 examples referable to 51 spp., comprising Lepidoptera 15 spp., Epheromeroptera: 08 spp., Plecoptera: 02 spp., Trichoptera: 03 spp., Orthoptera: 05 spp., Hymenoptera: 07 spp., Amphibia: 03 spp., Reptilia: 01 spp., and Pisces: 07 species. Identification and Advisory Services were provided to Department of Zoology, Punjabi University, Patiala, Baru Sahib University, Patiala, Panjab University, Chandigarh, University School of Environment Management, GGS Indraprastha University. Two manuscripts were reviewed during the month for different journals.

MARINE BIOLOGY REGIONAL CENTRE, CHENNAI, TAMIL NADU

assessment surveys including water-quality analyses at Sachana, Sikka, Roche port, Narara reef areas, on 22 - 24 June. From the National Zoological Collections of the centre, the centre's scientists identified 50 species, from 157 exs., which include: moss inhabiting testate amoebae 16 species, 51 exs.; marine sponges 09 spp., 17 exs.; Crustacea 08 spp., 13 examples, Mollusca 03 spp., 53 exs.; Pisces 14 spp., 23 exs. As part of the identification and advisory services, identified two wildlife case materials containing sea cucumber species for the Range Forest Office, Thoothukudi.

A manuscript containing the report of 15 new records of fishes from Lakshadweep was published. The manuscript also carried a revised checklist of fishes for Lakshadweep. Under the coral restoration project in the Gulf of Kachchh, the project staff undertook surveys on 23-24 June & 26-27 June in the reef areas in Narara, Gulf of Kachchh to identify resilient species of corals. The staff also inspected the bio-rock structures at Mithapur and Arambhada and carried out regular maintenance. Under the collaborative project 'Health Assessment of Indian Corals and Coral Reefs, with Space Application Centre, the project staff undertook health

A bleached
Sea-Anemone.

*Ecsenius
yaeyamaensis*
(Aoyagi, 1954)



ANDAMAN AND NICOBAR REGIONAL CENTRE, PORT BLAIR



Oriental Dwarf Kingfisher
Ceyx erithaca macrocarus
Oberholser, 1917

spp.), Coleoptera (6 spp.), Birds (25 spp.), Hemiptera (3 spp.), Lepidoptera (63 spp.), Odonata (6 spp.) and Reptiles (10 spp.) from terrestrial environment.

Duttaphrynus melanostictus
Schneider, 1799



A local survey was conducted for fifteen days from 4th to 25th June 2021 to Shoal Bay, Kalatang, Sippighat, Chidiyatappu, Ferrargunj, Botanical Garden, South Andaman to assess the terrestrial identified faunal diversity. A total of 246 species comprising Corals (65 spp.) Hydrozoa (12 spp.), Crustacea 22 (spp.) Polyclad (1 sp.), Pycnogonida (1 sp.), Mollusca (17 spp.), Pisces (5 spp.) from marine environment and Amphibia (10

SUNDERBAN REGIONAL CENTRE, CANNING, WEST BENGAL

During the month scientific staff of the centre identified 591 examples into 58 species, including Arthropoda 31 spp., Mollusca 21 spp., Fishes 23 spp., and Annelida 2 spp. 7 spp. of Fish, 2 species spp. of Mollusca, 3 spp. of Arthropoda, 2 spp. of Annelida were added to National Zoological Collections. One survey was conducted to assess the impact of Yash cyclone in Sunderban and adjoining areas.

FRESHWATER BIOLOGY REGIONAL CENTRE, HYDERABAD, TELANGANA

Glareola lactea
Temminck, 1820



The scientists of the centre examined 556 specimens collected earlier from Rangareddy and Nagarkurnool districts Telangana; Bhoj wetland, Madhya Pradesh; Sastamkota wetland, Kerala; Krishna district, Andhra Pradesh; Krishna River, Somasila, Telangana and identified 16 species of aquatic Coleoptera from 44 exs., 8 spp. of Cladocera from 140 exs., 10 spp. of Mollusca from 210 exs., 10 species of fishes from 78 exs, during June.

Talica nyseus
(Guerin, 1843)





WESTERN GHATS REGIONAL CENTRE, KOZHIKODE, KERALA

tsunekii Binoy, Girish Kumar & Santhosh, 2021, are published as new to science. Forty seven species (Hymenoptera – 26 spp., Mantodea 05 spp., Araneae 06 spp. and Coleoptera – 10 spp.) from 199 exs. were identified. Identification and advisory services were rendered to two institutions.

Seven new species viz., *Euphlyctis kerala* Dinesh, Murthy, Deepak, Ghosh & Deuti, 2021, *Trigonoderus periyarensis* Surya & Sureshan, 2021 and *Pediobius coconymphagus* Binoy & Sureshan, 2021, *Dasyproctus attenboroughi* Binoy, Santhosh & Girish Kumar, 2021, *D. leclercqi* Binoy, Girish Kumar & Santhosh, 2021, *D. niger* Binoy, Santhosh & Girish Kumar, 2021, and *D.*



Aularches miliaris
(Linnaeus, 1758)

ESTUARINE BIOLOGY REGIONAL CENTRE, GOPALPUR-ON-SEA, ODISHA

A total of 391 specimens were identified, which include crabs, isopods, fishes, frogs, reptiles belonging to 80 species. Four DNA barcodes were uploaded to the BOLD database. Brown Paper Nautilus *Argonauta*



hians Lightfoot, 1786, is reported for the first time from Odisha coast. Three eel species *Gymnothorax prolatus* Sasaki & Amaoka, 1991, *Strophidon dorsalis* (Seale, 1917), *Neenchelys cheni* (Chen and Weng, 1967) were reported from Andhra Pradesh coast for the first time. A fish ectoparasite *Lobothorax typus* Bleeker, 1857 was also reported from Odisha coast for the first time.

Argonauta hians
Lightfoot, 1786

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

A total of 208 examples were identified and registered comprising 3 species of Millipedes, 58 species of Lepidoptera, 8 species of Mollusca, 2 species of Pisces, 2 species of Amphibia, 3 species of Reptilia. Scientists of the Centre conducted 3 local surveys to Balijan, Itanagar WLS, distt. Papumpare and collected 74 examples of 6 groups (Decapoda, Mollusca, Lepidoptera, Orthoptera, Odonata, Amphibia). Scientists attended two days online certificate course on Lizard Taxonomy conducted by BNHS.

Polypedates teraiensis
(Dubios)



MARINE AQUARIUM AND REGIONAL CENTRE, DIGHA, WEST BENGAL



Ocypode macrocera H.
Milne Edwards, 1837

Scientist of the Centre identified 229 specimens and 23 species and deposited them in National Zoological Collection. Of these, 227 ex. of Mollusca (21 spp.), 01 ex. of Arthropoda (01 sp.) and 01 ex. of Brachiopoda (01 sp.) were digitized. Two manuscripts were reviewed for *Earth & Environmental Sciences* (IJES-160) and *South Asian Journal of Social Studies and Economics*. Conducted four-days local survey at Digha Mohana, Udaiyapur & Talsari on 02nd, 03rd, 19th, and 25th June 2021.



Siliqua radiata
(Linnaeus, 1758)

NEW DISCOVERIES AND NEW RECORDS

NEW SPECIES



Euphlyctis kerala
Dinesh, Channakeshavamurthy, Deepak, Ghosh & Deuti, 2021



Teretamon kapota Mitra & Pati, 2021



Dasyproctus attenboroughi
Binoy, Santhosh & Girish Kumar, 2021



Dasyproctus leclercqi
Binoy, Girish Kumar & Santhosh, 2021



Dasyproctus niger
Binoy, Santhosh &
Girish Kumar, 2021



Dasyproctus tsunekii
Binoy, Girish Kumar &
Santhosh, 2021



Pediobius coconymphagus
Binoy & Sureshan, 2021



Pediobius coconymphagus
Binoy & Sureshan, 2021

NEW RECORDS



Epeorus (E.) aculeatus
Braasch 1990



Epeorus (E.) bifurcatus
Braasch & Soldán 1979



Epeorus (E.) unispinosus
Braasch 1980



Paramblynotus annulicornis
Cameron, 1910

PUBLICATIONS

PAPERS

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2. Amarasinghe, A.A.T., Ganesh, S.R., Patel, H., Deuti, K., Campbell, P.D., Palot, M.J., Karunarathna, S., Abinawanto, A. and Supriatna, J. 2021. Taxonomy and predicted distribution of a rare Indian skink, *Eutropis innotata* (Blanford, 1870) (Reptilia: Scincidae) with the redescription of its holotype. *Zootaxa*, 4981(3): 577-592.
3. Arya, S., Sreeraj, C.R. and Raghunathan, C. 2021. Four new additions to the Ichthyofauna of Indian Sunderban. *Journal of Global Ecology and Environment*, 11(2): 22-29.
4. Behera, A., Padhi, S. K., Roy, S. Patro, S. and Mitra, S. 2021. Biodiversity of Hermit crab in Odisha, East coast and their distribution in other coastal states of India. *Indian Journal of Geo Marine Sciences*, 50 (05): 385-390.
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POPULAR ARTICLES

1. रानी सुन्दर और सैनी, कमल 2021. वर्तमान परिदृश्य में अनुवाद एक सशक्त कला और तकनीक. *Aksharwartra*, XVII (9): 36-38.
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ONLINE CHECKLIST

1. Dinesh, K.P., Radhakrishnan, C., Deepak, P. and Kulkarni, N.U. 2021. A checklist of Amphibia of India with IUCN Conservation Status, updated till April 2021. Available online at https://zsi.gov.in/WriteReadData/userfiles/file/Checklist/Amphibians_2021.pdf

MEETINGS ATTENDED

1. Dr. C. Raghunathan, Director-in-Charge, participated in the celebrations of World Environment Day – 2021 and launch by the Prime Minister of India (through virtual mode) organized by MoEFCC, New Delhi.
2. Dr. C. Raghunathan, Director-in-Charge, participated in the virtual programme of the Ministry of Environment, Forest & Climate Change, GIZ, UNEP and FICCI - awareness campaign on single-use plastics on 6th June 2021.
3. Dr. C. Raghunathan, Director-in-Charge, participated in the Meeting held on 23 June 2021 to discuss India Index parameters for Biodiversity and Habitat issue category of Environmental Performance Index (EPI), with MoEFCC, New Delhi.
4. Dr. C. Raghunathan, Director-in-Charge, participated in the meeting held on 30 June 2021 to discuss about the Great Nicobar - Conservation of island faunal diversity study being undertaken by ZSI, along with AECOM, Noida.
5. Dr. K.A. Subramanian, Scientist-E participated in the Meeting held on 23 June 2021 to discuss India Index parameters for Biodiversity and Habitat issue category of Environmental Performance Index (EPI), with MoEFCC, New Delhi.
6. Dr. Basudev Tripathy, Scientist-E participated in the virtual programme of the Ministry of Environment, Forest & Climate Change, GIZ, UNEP and FICCI - awareness campaign on single-use plastics on 6th June 2021; the Meeting held on 23 June 2021 to discuss India Index parameters for Biodiversity and Habitat issue category of Environmental Performance Index (EPI), with MoEFCC, New Delhi and the meeting held on 30 June 2021 to discuss the Great Nicobar - Conservation of island faunal diversity study being undertaken by ZSI, along with AECOM, Noida.
7. Dr. P.S. Bhatnagar, Scientist-E and Dr. A.S. Kalawate, Scientist-D and Dr. S.S. Talmale, Scientist-B, attended the research Proposal Meeting (online) organized by Maharashtra Biodiversity Board on 11th June 2021.
8. Dr. Narender Sharma, Scientist-E, attended 12th local committee meeting of Dehang Dibang Biosphere Reserve in the office of PCCF (WL & BD), Government of Arunachal Pradesh on 18th June, 2021; attended State Research Advisory Committee meeting on 22nd June, 2021 at the office of PCCF (WL & BD), Government of Arunachal Pradesh to finalize the research proposals received across the country.
9. Dr. C. Sivaperuman, Scientist-E attended meeting with Inspector General M.V. Pathak, Commander, Indian Coast Guard, A & N Region on 10th June 2021 & Inspector General Dinesh Rajaputhran, Commander, Indian Coast Guard, A & N Region on 18th June 2021 in connection with the field survey in the remote uncovered islands of A & N archipelago.
10. Dr. Gopal Sharma Scientist E attended an online meeting with Deputy Inspector General of Forests (WL), MoEFCC, regarding matters relating to Project Dolphin on 25th June 2021.

LECTURES DELIVERED

1. Dr. C. Raghunathan, Director-in-Charge, delivered a talk on the degraded ecosystems on the occasion of World Environment Day 2021 on 5th June 2021.
2. Dr. C. Raghunathan, Director-in-Charge, delivered a talk on 'Status of Horseshoe Crabs' during the 2nd International Horseshoe Crab Day on 20th June 2021.
3. Dr. P.M. Sureshan, Scientist-E, delivered a talk on the topic "Restoration of ecosystems in connection with World Environment Day on 4th June 2021 in the webinar organized by Mathrubhumi daily and SEED programme (Student empowerment for Environmental Development).
4. Dr. C. Sivaperuman, Scientist-E delivered a talk on the Faunal diversity of Andaman and Nicobar Islands in the webinar organized by the Government Degree College, Jammu & Kashmir, on the occasion of World Environment Day, 5th June 2021.
5. Dr. Gaurav Sharma, Scientist-E, delivered a lecture on "Faunal Diversity and Conservation of Environment" through virtual mode to students from three Institutions of Dehradun,

Uttarakhand, on World Environment Day on 5th June 2021.

SUPERANNUATION

6. Dr. Sanjeev Kumar, Scientist-E delivered a lecture on *Role of Wildlife in Environmental Balancing and Human Interference* in a webinar organized by Jaipur Engineering College and Research Centre, (JECRC), Jaipur on 24th June, 2021 through Zoom platform.
7. Dr. Gopal Sharma, Scientist -E delivered an online lecture on the duty of volunteers during COVID19-2021 in the webinar on Youth engagement during covid-19 in the eve of International Yoga Week & Promotional Campaign of free vaccination drive organized by Regional Directorate-Eastern Region Odisha on 24 June 2021.
8. Dr. Rajmohana K. Scientist-E inaugurated the World Environment Day-2021 celebrations and delivered an invited talk on the theme Ecorestoration – organized by the Department of Zoology, Zamorin's Guruvayurappan College, Calicut.
9. Dr. K. Valarmathi, Scientist-D, delivered a keynote speech in an International Webinar on "Freshwater Faunal Diversity in India" organized by the P.G and Research department of Zoology, Raja Doraisingam Government Arts College, Sivagangai, Tamil Nadu, on 26th June 2021.
10. Dr. Marimuthu, Scientist-D, addressed as Chief Guest on "*Research methods on Reef Restoration Processes*" to PG and Research Department of Zoology, Nirmala College for Women (Bharathiyar University), Coimbatore, Tamil Nadu, on 14 June 2021.
11. Dr. P.C. Tudu, Scientist-C, delivered a keynote address at one day National Webinar on "Environment and Ecosystem Restoration", organized by Department of Zoology, Aditya Narayan College, Dumka, Jharkhand and Bajkul Milani Mahavidyalaya, Purba Medinipur, West Bengal on 05.06.2021.
12. Dr. Muhamed Jafer Palot, Scientist-B, delivered a talk at the Environmental Day Webinar organized by the Kerala Forests & Wildlife Department (Social Forestry & Extension Division) for the teachers of Kozhikode district on 5th June 2021; delivered a talk (online) on 'Eco-restoration of Kottoli wetlands of Kozhikode district' organized by the Kerala Library Council, Kozhikode on 6 June 2021; delivered a talk (online) on 'Indian Wildlife (Protection) Act and Faunal Wealth of Kerala' organized by the Malabar Natural History, Kozhikode on 11th June 2021.

1. Dr. Sanjeev Kumar, Scientist-E and Officer-in-Charge of Desert Regional Centre, Jodhpur, Rajasthan has superannuated from his service during this month. He joined ZSI in 1990 and served in the organization in various capacities during his service in ANRC, Port Blair, and DRC, Jodhpur.
2. Shri Ratnakar Sabat, Motor Driver Gr-I and Shri P. Barma, Photographer Gr-III, superannuated during this month from Estuarine Biology Regional Centre, Gopalpur-on-Sea, Odisha

INTERNATIONAL YOGA DAY



Marine Aquarium and Regional
Centre, Zoological Survey of
India, Digha



High Altitude Regional Centre,
Zoological Survey of India, Solan

STORYLINE

INDIAN GREY WOLF AND HAYENA SHARING FROM THE SAME BOWL

The Indian Grey Wolf and Striped Hyaena known to be rivals species but showing tolerance towards each other in south region of West Bengal. The landscape is a resource poor and hence both the animals are using same habitat patches to utilize the livestock resource as prey in semi arid region of West Bengal. The study found that both the species are sharing land for maximizing the resource use. The study is one of the major outcomes of the project funded by the West Bengal to assess the distribution and population status of Indian Grey Wolf, Hyaena, Wildl Boar, Golden Jackal and Leopard Cat. During the study the researchers implemented field activities in the landscape by using a grid based strategy. The team has used camera traps as well as non-invasive DNA analysis from the scats to record the presence of all the study species. In addition the researchers also conducted interviews of about 1356 respondents to document carnivore-human conflict cases in the landscape.

However, efforts were more intense to document the status of wolf and hyaena because these two species are involved in human-wildlife conflicts in the study landscape. A habitat niche model was build to understand the suitable habitats for both the species and later connectivity was also evaluated to identify biological corridors in the landscape. The resulted model brought out that both the species suitable habitat patches are distributed in the human-modified lands. Moreover, highest level of biological connectivity resides between the forest patches of Purulia and Bankura district. The maximum biological connectivity for hyaena may exist between the large habitat patch distributed in western Purulia and patches of the southern area of Bankura, marginal connectivity may also exist among the smaller patches present on the northern side of Bankura-Purulia. Whereas for the Grey Wolf, biological connectivity may exist in habitat patches distributed in the western part of Purulia with the southern region of Bankura, which continues up to the Jhargram district.

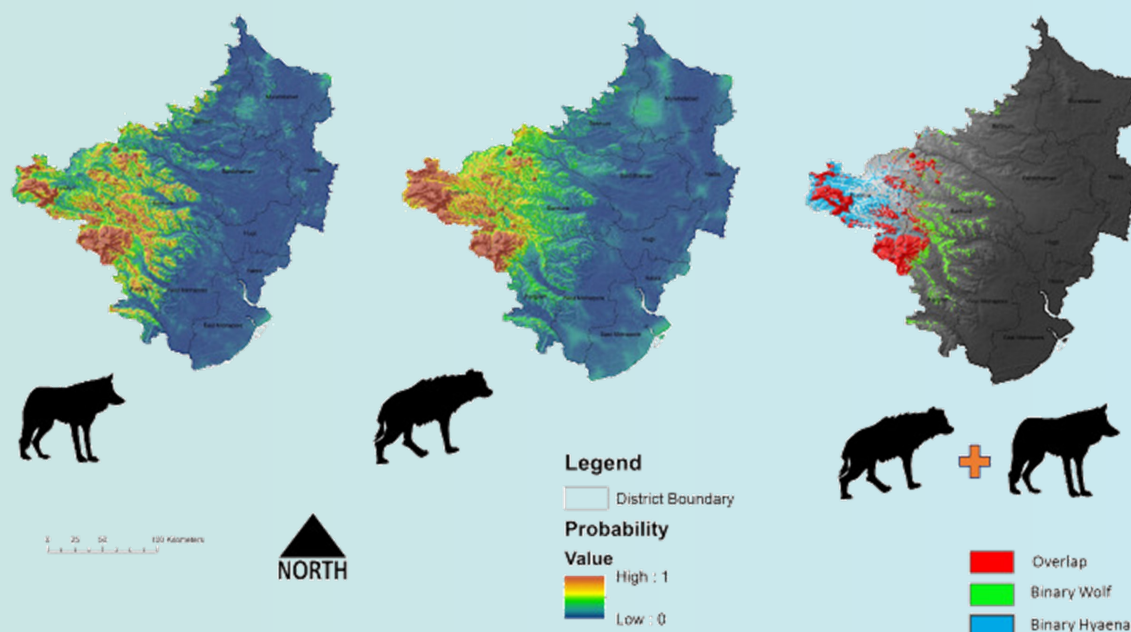


Figure 1: Distribution of Suitable area for Striped Hyaena (*Hyaena hyaena*) and Indian Grey wolf (*Canis lupus pallipes*) in Southern region of West Bengal. Figure on the far left shows the suitable habitat for Wolf, middle for suitability of Hyaena and far-right depicts the overlap regions of both species.

Further, the presence of a high level of niche overlap and occurrence of biological corridors in the anthropogenic landscape is attributed to poor wild prey availability, increasing human colonization and mining activities in study regions. Although we did not encounter any cooperative hunting between the two species, but the possibility can't be ruled out and hence recommended more intensive camera-trapping studies and radio telemetry-based study in the study landscape to better understand landscape utilization and the feeding behaviour of both species. The study also suggested management recommendations to the Forest Department for improving the habitat condition so that the population of the species can be sustained for the longer duration as well as to minimize the human wildlife conflict in the landscape. The study is published in the Global Ecology and Conservation journal.

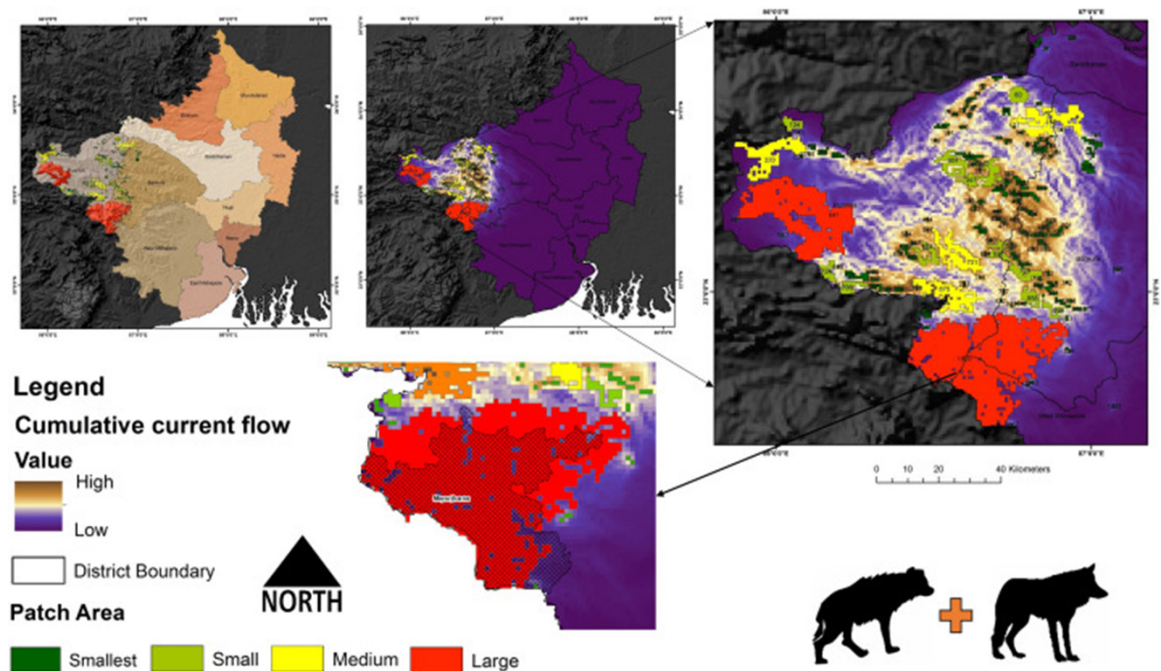


Figure 2: Combined biological movement corridor for Striped Hyaena (*Hyaena hyaena*) and Indian Grey wolf (*Canis lupus pallipes*) in the overlapped habitat patches. Overlap patches were characterized into four categories based on the area occupied, i.e. Smallest size patch (Deep Green), Small size patch (Light Green), Medium size patch (Yellow) and Largest size patch (Red). Colour scale depicts the value of cumulative current flow between the patches with High values (Brown), Low values (Purple). The Mayurjharna Elephant Reserve is represented as Crosshatch polygon.

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Ishita Chongder
Shankhamala Ghosh
Akash Dutta
Abhishek Singh
Ritam Dutta
Bheem Dutt Joshi
Mukesh Thakur
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Chinnadurai Venkatraman
Debal Ray
Kailash Chandra