

Blewitt's Owl (*Heteroglaux blewitti* or *Athene blewitti*), a little-known critically endangered, rare endemic bird species of India¹, is believed to be found in these hill ranges of Andhra Pradesh. It was also located earlier from northern Maharashtra, southeast Madhya Pradesh and western Orissa². Although there is some confusion over its former abundance, evidence strongly suggests that it has always been rare. It is classed as a Schedule I species under India's Wildlife Protection Act (1972) and listed in Appendix I of CITES. Recently, a research team spotted a carcass of Blewitt's Owl in these hills³. The study also confirmed the presence of 142 species of birds, including three vulnerable and globally threatened species and two near-threatened species⁴. Eleven species of owls and owlets were found on the slopes of the hillocks and valleys. Brown Wood Owl (*Strix leptogrammica*), Mottled Wood Owl (*Strix ocellata*), Eurasian Eagle Owl (*Bubo bubo*) (nest) and Jungle Owlet (*Glaucidium radiatum*) were reported at higher altitudes along the slopes of the hills, whereas Brown Hawk Owl (*Ninox scutulata*) (nest), Spotted Owlet (*Athene brama*) (nest) and Collard Scops Owl (*Otus bakkamoena*) (nest), Oriental Scops Owl (*Otus sunia*) (nest) were reported at lower altitudes. Brown Fish Owl (*Ketupa zeylonensis*) and Short Eared Owl (*Asia flameus*) were reported in the mid-altitude of the hills. Though the owl species are found in the mixed deciduous forest habitats, a GIS study

conducted by SACON, Deccan Regional Station, Hyderabad mapped their habitats. Altogether 1624 ha of mixed moist deciduous forest are demarcated for Raktakonda and Galikonda hills and 1228 ha for the Chitamogondi Hill. These areas are believed to be potential sites for the endemic Blewitt's Owl habitat which needs immediate conservation. A total of ten species of reptiles, five taxa of amphibians and 56 species of butterflies were also encountered during the study. A number of medicinal plant species like *Asparagus racemosus*, *Rubia cordifolia*, *Curculigo orchoides* and *Chlorophytum arundinaceum* were reported during the study. The study also revealed the presence of 142 species of plants, including a tree fern, *Cyathea nilgiriensis*, which is endemic to South India. The species is restricted only to Anantagiri, Galikonda and Sunkarimetta hills, Araku Valley, Vishakhapatnam District⁵. The plant population is now facing devastating effects of human interference. Slash and burn cultivation and coffee cultivation intimidate the natural habitats of these species. Since we could locate the fern species growing on the road fringes, extra care should be taken regarding this aspect in order to conserve the ecofragile ecosystem. There is an immediate need to declare the area as a protected area system or the species to be protected through community participatory management. A conservation awareness programme would help make the villagers, local forest guards and NGOs participat-

ing in conservation efforts understand the importance of endangered, threatened flora and fauna as well as the forests surrounding them. Further research work is needed to map and monitor the habitats of threatened species. Very-high resolution satellite datasets (Cartosat-1, Cartosat-2 and Resourcesat-1 LISS IV) should be a requisite which can help the conservationists and decision makers to focus on the distribution of species while designing future conservation strategies.

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Radioecological sensitivity in coastal marine food resources of India – need for a reference model database

Radioactive contamination of the human environment became a reality on 16 July 1945, when the first fission weapon was tested near the town of Alamogordo in New Mexico. Thus, radioecology was born in the mid-forties and developed rapidly during the fifties and sixties, when nuclear weapons' testing in the atmosphere was at its peak. In the seventies and early eighties, marine radioecology came into focus due to the notable discharges of water-borne radionuclides

from nuclear reprocessing in western Europe. The Chernobyl accident in 1986 shifted the interest back to terrestrial radioecology. In the nineties, political changes in the former Soviet Union made possible international radioecological studies of contaminated terrestrial and marine sites in Russia¹.

Radioecology includes the total movement of radio nuclides within ecological systems and their accumulation within specific ecosystem components such as air,

water, soil and living organisms. Military use of nuclear energy is still the main source of global radioactive contamination. Increased nuclear power energy in India also justifies the increasingly required radio ecological studies concerning man and nature. The use of nuclear energy to produce power has also given rise to measurable concentrations of radionuclides in the environment, especially close to nuclear installations. However, the global mean dose rate

originating from nuclear energy production is relatively far less than that from global military applications.

Environmental monitoring and radioecology are complementary. Transfer parameters generated by radioecological studies are necessary to estimate through models, the radiological exposure of a population, derive from the contamination level measured in a bio-indicator the quantity of radioactivity released from a nuclear installation, or identify potentially important pathways to be monitored. On the other hand, monitoring data will confirm important pathways suggested by radioecological modelling and provide site-specific data for the estimation of model parameters or actual datasets for the validation of transfer models².

Urgent radiobiological study of coastal marine environmental food samples in India is needed to ensure that certain limits of contamination are not exceeded, for absolute radiological protection of mankind. This helps to set up models based on the data collected, and then from these

models to predict the levels of additional release of a contaminant to the environment and to assess the contaminant dose reaching man. India became one of the first nations to sign the Convention on Nuclear Safety, in September 1994. There is a pressing need for the formation of an Indian Marine Radioactivity Database like GLOMARD – the Global Marine Radioactivity Database. A Radioecology Monitoring Authority with a UN watch-representative and a panel of Indian experts for the west and east coasts should provide radioactivity baseline data on sea water, sediment and biota, to undertake assessments on safety evaluation and authoritatively warrant the internationally established safe radiation limits and report it to the IAEA/WHO/FAO. Development of Standard Operating Protocols for analysis of low radionuclide concentrations in the marine environment is the need of the hour. This will help to critically compare and control the radionuclide behaviour and trophic transfer processes by AD 2050,

AD 2100 and beyond, for the health and safety of posterity.

Training and capacity building for nuclear power reactor types – specific radioactivity control measures is also seriously required for India (where varied types exists), while recapitulating every new type of accident witnessed in more than half a century of worldwide nuclear power history.

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