

## In this issue

### Shifting Cultivation

#### *Shifting attitudes*

In shifting cultivation, some parts of the forest are slashed and burned. The land is cultivated and then left fallow for a period. While that land regenerates, other parts of the forest are slashed and burned for agriculture. The practice, common in the eastern and north-eastern parts of the country, is much maligned and there have been many attempts to wean away people from this traditional practice, with limited success.

Anurag Mishra from the Indira Gandhi National Forest Academy re-examines the issue and counters many of the anxieties about slash and burn agriculture: carbon emission, biodiversity and forest recovery, impact on soils... The alternatives that are offered to the practitioners too, have limitations, points out the author.

The approach of increasing the agricultural productivity of the country needs to be tempered with considerations of the livelihood of the people, the author reminds us. And to do that, policy interventions are required.

First, shifting cultivation and home gardens, the alternative offered for food security reasons, need to be considered as specific categories of land use. We must recognise the role of shifting cultivation in both biodiversity and cultural diversity.

Foresters, agriculturists and decision makers need to read the General Article on **page 1129** in this issue.

### Nicobar Long-tailed Macaque

#### *Gastrointestinal parasites*

The distribution of the Nicobar long-tailed macaque, *Macaca fascicularis umbrosus*, is restricted to the Nicobar Islands. This subspecies of long-tailed macaques was categorized as 'vulnerable', and accorded the highest protection under Schedule-I of the Indian

Wildlife (Protection) Act-1972. The 2004 tsunami played havoc in the Nicobar Islands and the population of the subspecies was also impacted. On the road to recovery, the Nicobar long-tailed macaque had to come into closer contact with humans and livestock. In such cases, usually, wildlife populations acquire gastrointestinal parasites. This ought to be the case with the Nicobar long-tailed macaque too, thought some Indian primatologists.

However, there are no studies on the parasitic burden in the macaques before the tsunami. But it is possible to check whether the principle holds water by comparing the burden among the monkeys near human habitations against that among monkeys not in the vicinity of humans. With this in mind, the researchers selected five groups of macaques in the Great Nicobar, one group in the Little Nicobar and two groups in Katchal. From 2014 to 2016, the researchers went around searching for fresh excreta, and took samples and analysed them for parasites. They recorded 13 endoparasites in the subspecies – ten helminth species and three protozoans. And, as expected, the groups in the close vicinity of human habitations had more parasitic burden. In a Research Article on **page 1199**, the team reports their findings in detail.

Thankfully, the macaques do not accuse us of causing them 'homonotic' diseases, but under the notion of One Health, we should be attending to them, if only to reduce transmission back to human and cattle populations.

### Wind Droughts over India

#### *See-saw between south and west*

Just as droughts reduce agricultural harvests, wind drought can influence the harvest of wind energy. But, unlike the case with rainfall data, we do not have observational time series data on wind speeds at about a hundred metres

above the surface, the height at which the wind energy is tapped. So researchers took the ERA5 reanalysis products of the European Centre for Medium-Range Weather Forecasts from 1979 to 2019 and used a stochastic weather generator to simulate daily wind speed for 40 locations in wind-rich regions of western and southern India for 4100 years.

They split the results into 100 segments of 41 years each to make the data comparable to the input ERA5 data of 41 years to validate the yearly mean of daily wind speed, the seasonal variation of monthly mean wind speed and the spatial correlation of wind speed. After validating the results with data over an offshore location in Dhanushkodi, an onshore location in South India, and another in Rajasthan, they examined the potential of harvesting wind energy from South India and Rajasthan over time.

In a Research Article in this issue, they report a surprising result: when wind harvesting increases in Rajasthan, it decreases in South India and vice versa. Turn to **page 1145**.

### Parthenium Beetle

#### *Preferences for oviposition*

The parthenium beetle, *Zygogramma bicolorata*, exerts a natural control over the troublesome parthenium weed. How does the beetle know where to lay its eggs? What influence do light and gravity have on its ovipositional behaviour? Does the beetle have special preferences for the texture and the colour of the surfaces where it lays eggs?

Researchers from the Integral University, Lucknow investigated with a series of cleverly designed experiments. And on **page 1193** in this issue, they report their results in a Research Article.

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