

In this issue

Insect Diversity

Conservation approach

More than 18,000 insect species are reported to be threatened and about 1800 species are listed as vulnerable, endangered or extinct. Many are herbivores or predators. Some are saprophagous or omnivores and some, parasites. About 40 are pollinators – critical for the survival of many plant species and for agricultural productivity.

A Review Article in this issue provides information on insect biodiversity, factors responsible for the declining populations of insects on the earth, to prioritise insect groups that require conservation efforts. Recommendations on the measures to be taken to conserve insect biodiversity are also provided. Read on from **page 1374** in this issue.

Keani Keam of Kashmir

Mapping and economic evaluation

Keani keam, the wicker craft of Kashmir, is primarily dependent on the willow, *Salix purpurea*. In a Research Article in this issue, researchers from SKUAST-Kashmir examine the potential of willow plantations in the valley, the economic benefits to the small farmers there and ways to improve their livelihood.

The researchers identified 20 ground points using a GPS and located them in the Sentinel data from the USGS Earth Explorer. They removed unwanted noise from the earth's atmosphere as well as from the forest cover, and, from spectral reflectance values, identified areas where the willow is grown. They interviewed farmers and retailers in Srinagar and Ganderbal.

They found that willow cultivation is a profitable investment providing returns of more than 40,000 rupees for a 10-year plantation over one eighth of an acre. Economic benefit is more than twice the cost and the internal rate of return was more than 30%, better than returns from depositing the money in a

bank. They also identified the factors influencing the yield of wicker

More than 30 decorative items are made from wicker willow. From farmer and processor to artisan, wholesaler, retailer and, ultimately, to the consumer, there are various processes such as boiling, debarking, drying, sorting, transportation and labour. The researchers suggest ways to improve the livelihood of small farmers and artisans in the valley. Read the details on **page 1385**.

High Altitude National Park

Macrofungal diversity

The Kishtwar High Altitude National Park is unique with steep slopes and narrow valleys surrounded by high ridges providing a wide variety of ecological niches. Researchers from the University of Jammu and an affiliated college started studying the macrofungal diversity there, trying to understand the associations and interactions between biotic and abiotic factors. In 2015, they marked out four plots of a hectare each at 10 different sites with an adequate distance between them and at least more than 30 metres from the forest. They visited the site every month to count macrofungal fruiting bodies in 10 random quadrats within each plot. During the rainy season, when more fruiting bodies pop up, they did this every fortnight, travelling more than 8 hours to reach their sampling sites. All that labour was not in vain. They found a total of 83 macrofungal species! The forests in the Kishtwar High Altitude National Park seem to be in good health, they say.

In a Research Article on **page 1415** in this issue, they report their findings.

Dakshina Kannada Coast

Diversity of molluscs

There are more than 200,000 species of molluscs. How many are to be found

on the intertidal zone of Indian beaches?

Researchers from Mangalore University set about finding the numbers in the Dakshina Kannada coast. They took a stretch of about 40 kilometres from Talapady to Mulki and selected sites at Someshwar, Panambur and Sasihithlu. From November 2016 to September 2017, they visited the beaches every month during low tide to collect molluscan shells from high-, mid- and low-tide zones, earmarking the sites of collection with a hand-held GPS. They had planned their field visits to coincide with the passing of the IRS-Resourcesat 1 satellite over the region and tidal conditions. The LISS III camera aboard the satellite has a spatial resolution of 23.5 metres. So the collections in each site were done in three locations separated by 300 metres, good enough to clearly distinguish in the satellite images.

The researchers found 20 species of molluscs – 10 gastropods and 10 bivalves. The richness of gastropods peaked pre-monsoon and that of bivalves post-monsoon. While gastropods were uniformly distributed in all locations, more bivalves were to be found in the littoral zones of Sasihithlu and Panambur in the post-monsoon period, say the researchers. They also found a correlation between water temperature and species richness and abundance.

The team has fused the topographic maps of the Dakshina Kannada coast with IRS-Resourcesat 1 images and those of Google Earth. Perfect background data much needed to study the populations of other organisms in the intertidal zones: crustaceans, polychaetes and amphipods. Interested researchers and citizen scientists living near beaches need to read the Research Article on **page 1426** in this issue.

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