Printed from
PuneMirror

Singing pattern of birds to gauge ecological changes

By Himanshu Nitnaware, Pune Mirror | Aug 19, 2019, 06.00 AM IST

The study found that there is a stable acoustic community structure maintained by birds which can serve as indicator for climate change

An IISER scientist has uncovered evidence on how acoustics of animals can be a method of surveying the population of vocal animals and observing changes in the ecosystem

A scientist at the Indian Institute of Science Education and Research (IISER), Pune has uncovered evidence about how migratory birds in a region affect the chirping and singing pattern of the overall bird ecosystem.

The scientist has found that resident birds become silent during the transition and that the songs of migratory birds take over in the same geography. He has also discovered that there is a stable acoustic community structure that is maintained by these birds.

The researcher believes human interventions would affect the unique acoustic space shared by the birds, which serves as indicators of climate change if the pattern is disturbed.

“The tropical deciduous scrubland birds display unique songs, and coexisting species tend not to overlap,” said Anand Krishnan, DST-INSPIRE faculty at IISER.

Anand said the acoustic structure is stable across seasons with the migratory birds entering and leaving the given space. Vocalisations of about 85 bird species were studied during seasons in Pune using microphones.

Project assistant at IISER, Ram Mohan, said, “Acoustic monitoring is a non-intrusive method of studying and surveying populations of vocal animals omitting the need to disturb the natural behaviour of the animal.”

Ram added that monitoring animal communities using acoustics can help understand species behaviour and their interactions with other vocal species. Acoustics is also used to understand how an animal community functions and their responses to a changing environment due to climate change and human activities.

“Pune is blessed with a variety of bird species residing in the city. Many singing resident birds, which are very vocal during monsoon breeding season, become less vocal in winter, and migratory birds tend to replace them in this acoustic space” Anand said.

“The overall acoustic space where the birds interact remains the same. The only difference is the species sharing that space in the given geographic area,” Anand added.

This also means the abundance of species remained almost the same. “Some bird species did not entirely move out. They were present but were less vocal or had smaller bouts,” he added.

Speaking to Mirror he said that adding years of data together would help to know if this space has been disturbed. “Many urbanisation projects are going which pose a threat to such habitats. If there is a change in the acoustic community, we will know,” Anand said.

The scientist further said that long term detection could also serve as a tool to understand the species turnover driven by the movement of resident bird species. “Local movements over small distances remain very poorly studied,” he said.