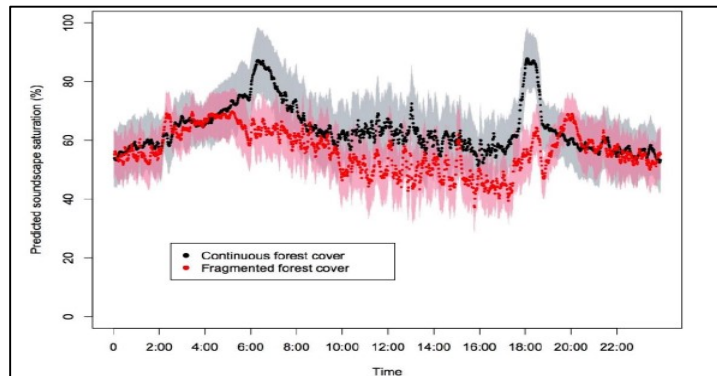


Biodiversity through sound

The term “Biodiversity” becomes popular in all niches of the society, thanks to active media involvement for awareness generation. Today, we all know that biodiversity encompasses a variety of life forms, ranges from microscopic to macroscopic, unicellular to multicellular, gene to biome level. It is not restricted in species checklist preparation, it also includes distribution, function, maintenance, evolution, society, economics even politics.

The basic unit of biodiversity measurement is species. However, the concept is ever changing and there are multiple ways to measure the biodiversity of any area of interest. But “Sound”!!!!!! How can sound help us to measure the state of biodiversity in any particular area? It is possible, at least recent research says so. In Papua New Guinea, a comparative study on the eco-acoustic profile of fragmented and continuous forests has shown that there are distinct differences in dawn and dusk choruses at these forests.

While searching for the reason behind these differences, ecologists uncovered an interesting point: forest fragmentation seems to have a major role in this difference. It has been detected that continuous and less disturbed forest areas have more saturated and complex soundscape (i.e. more complex and diverse acoustic relationship among organisms) than its fragmented and disturbed counterparts. The reason behind this richer soundscape seems to be the presence of diverse insect and avian communities responsible for this grand opera whereas fragmented forests are impoverished in this regard. Interestingly, conventional estimation of avian diversity in fragmented forests has not shown much decline in avian members. To solve this riddle,



The percentage of sound saturation at fragmented and continuous forest sites across 24 hrs. Image: Burivalova et al. 2017



Ohhh! What a diverse orchestra!!!



researchers opined that, time and space constrained conventional methods may not be able to capture the entire spectrum of biodiversity, a problem, can be complemented through the acoustic approach which is cost effective and result oriented.

Source: Burivalova, Z., Towsey, M., Boucher, T., Truskinger, A., Apelis, C., Roe, P. 2017. Using soundscapes to detect variable degrees of human influence on tropical forests in Papua New Guinea. Conservation Biology

Photo: Burivalova et al. 2017(fig1), Rajasri Ray (fig2)

Collector: Rajasri Ray