

**Institute level periodical seminar on
Mapping of Invasive Alien Species using Remote Sensing and GIS
IFGTB, Coimbatore**

The institute level third periodical seminar was organized at Institute of Forest Genetics & Tree Breeding, Coimbatore on 28th August 2017. Sh. R.S. Prashanth, IFS Director, IFGTB chaired the seminar and welcomed gathering and he highlighted the need for the application of Remote Sensing and GIS for management of Invasive species. Dr A. Rajasekaran, Scientist-E, Forest Research Information Management Division delivered the lecture on “**Mapping of Invasive Alien Species using Remote Sensing and GIS**”. The Scientists, officers and research staff including SRF’s, JRF’s, RA’s and FA’s of the institute participated in the seminar. The seminar was conducted with a view to sensitize and discuss the capabilities of Remote Sensing and GIS in Invasive Alien Species mapping.

Dr A. Rajasekaran informed that as per the definition by Convention on Biological Diversity (CBD), Invasive Alien species (IAS) are species whose introduction and/or spread outside their natural past or present distribution threatens biological diversity. He described the common characteristics of Invasive Alien species such as higher seed production, seed dispersal mechanism, mode of reproduction, tolerance to drought, shade etc and predator avoidance mechanism. He also highlighted the need for addressing the problems caused by invasive species such as competition with native species for water and nutrients, reduction in species diversity and allelopathic effects. He elaborated the various causes for successful invasiveness of IAS and various hypotheses such as Enemy release and Novel weapon Hypotheses which describe about invasive species establishment. He also informed that not only herb species are invasive, about 357 trees and 265 shrubs are also invasive globally.

The basics of Remote sensing and GIS including stages in remote sensing, spectral reflectance curve, Spatial, spectral, radiometric and temporal resolutions, image processing techniques were presented in an elaborate manner. The Normalized Difference Vegetation Index (NDVI) and its applications in various vegetation mapping are also discussed. The different mapping techniques followed by various authors to map canopy dominating, mixed canopy dominant and understorey IAS were presented. Dr A. Rajasekaran also shared his experiences in mapping Prosopis invasion in Pudukkottai and Sivagangai Districts of Tamil Nadu. He also mentioned about various mapping techniques of wattle in other countries and he also informed that the institute has initiated a project to map the wattle invasion in Nilgiris and Palni hills of Tamil Nadu. He discussed some of the problems in mapping aquatic and understorey invasive species. Apart from various mapping techniques, the use of various Species Distribution Models (SDM) such as GARP and MaxENT in predicting invasive species distribution was also presented. The use of

mobile apps through crowd sourcing to map invasive species was discussed. He concluded that Remote sensing and GIS is a relevant tool for taking policy decisions and formulating strategies for management of invasive alien species. The prospects of remote sensing and GIS to map Prosopis invasion in different Districts of Tamilnadu and the different research questions to be attempted for further studies were discussed.



