

Institute for Regional and International Studies (IRIS)

Graduate Student Summer Fieldwork Award Report, October 2019

Quantifying forest loss in the Nethravathi watershed, India

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The Western Ghats is a mountain range which runs parallel to the western coast of India. It is a global biodiversity hotspot which is home to several endangered and endemic mammals, birds and plant species. Many life-sustaining rivers originate here and provide several irreplaceable ecosystem services. The Nethravathi river is one of the major west flowing rivers whose tributaries originate in these mountains. Its watershed has some of the last untouched tropical forests which are key to maintaining connectivity between two protected areas, Kudremukh National Park in the North and Pushpagiri Wildlife sanctuary in the South. In the last 20 years, this region has seen a rapid loss of forests due to ill-planned linear infrastructure projects such as pipelines, roads, hydroelectric, and river diversion dams. These projects have and continue to fragment the landscape as new projects are proposed and implemented with little or no impact assessment. Land use change alters a homogenous landscape into heterogeneous patches, which leads to habitat fragmentation.

My summer leadership placement was with the wildlife advocacy non-profit, Wildlife First. The objective of this placement was to map and quantify forest loss due to linear infrastructure projects in the Nethravathi river watershed. Filling in data gaps using reliable land use maps and forest loss statistics is key to make evidence-based policy

recommendations. The first part of my project was to map land use of the region using satellite imagery. As preparatory work for the process of land use mapping and accuracy assessment, I had labelled the land uses of random points in the watershed which I was very sure of and left the ambiguous points to be labelled on field. The second part was to quantify forest loss due to linear infrastructure projects, which have been implemented in the last 20 years and estimate future losses due to projects in the pipeline.

The IRIS summer fieldwork grant helped me conduct eight weeks of field work in India starting from the last week of May 2019 to July 2019. During the fieldwork phase, I visited and labelled previously marked ambiguous sites as well as collected additional land use data. I was also able to visit some of the dam and road widening construction sites. These visits gave me a clear on the ground picture and allowed me to measure and assess damage in the area. This work would not have been possible without the field visits. Being on the field also gave me the opportunity to understand the landscape better, which was of immense help for the completion of my summer leadership placement. I was also able to visit the geographic survey office in India to obtain hardcopies of toposheets which were not available online. The grant was also useful to meet my travel expenditure towards meeting my host supervisor in Mangalore, India and other partners. These interactions were helpful in gaining valuable inputs about the landscape and the project. The map, field data and an overall understanding of the landscape are very important for my future research work in the area where I plan to assess the status of elephants in the region and tie it back to the land uses they prefer.