CASE STUDY

Environmental impacts of relocating Indian villages

DigitalGlobe FOUNDATION

Satellite imagery used to analyze environmental costs and benefits of relocation

Gujjar communities in northern India have been voluntarily relocated from a national park to help protect the habitat of the Asian elephant and tiger. DigitalGlobe imagery and on-the-ground fieldwork helps researchers analyze the environmental costs and benefits of the relocation.

Rajaji National Park in the Indian state of Uttarakhand was established largely to protect and enhance the habitat of the Asian elephant and tiger. Subsequently, many Gujjar communities living in the park have been voluntarily re-located to nearby forested areas. This study used object-oriented image analysis algorithms to extract specific forest use patterns from pairs of DigitalGlobe imagery. This allowed the researchers to evaluate both the land cover 'costs' of the relocation (the increased lopping, grazing, and deforestation around the newly constructed villages) as well as the benefits (regeneration of riparian grasses and lopped trees within the park) since 2002. The Gettysburg College research team and Environmental Studies professors visited the site to validate the image classifications and to survey community members about how the relocation has influenced resource use.

"We are interested in identifying land cover changes driven by the relocation of communities from national parks in India. DigitalGlobe now has a 14-year archive of high resolution multispectral imagery, making such change detection studies possible."

—DR. RUTHERFORD PLATT, ASSOCIATE PROFESSOR, GETTYSBURG COLLEGE

Gettysburg College students Ethan Dively and Jessie Pierce joined Professors Rutherford Platt and Monica Ogra for fieldwork in India, including field verification of DigitalGlobe imagery

A DigitalGlobe satellite image of Gaindikhata (October 2, 2011), an area where numerous Gujjar families have been voluntarily relocated from nearby Rajaji National Park.

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