Development projects jeopardize India’s forests

As climate change intensifies, India, one of the world’s most megadiverse countries, has put its forests and wildlife in jeopardy. Between January and May, India’s Ministry of Environment, Forest, and Climate Change gave environmental clearance (i.e., approval to proceed) to 73 projects located within 10 km of a forest, including some planned near forests with protected status (1). Protected areas and forests can effectively mitigate the effects of urbanization and anthropogenic pressure (2), but human land use along their boundaries reduces their effectiveness (3), especially if the activities include permanent infrastructure (4). Low- and middle-income countries like India should mitigate environmental damage caused by development by imposing more stringent rules and regulations for environmental clearances.

India’s approved projects include industrial construction, roadways, mining, and new infrastructure. Such development could lead to permanent changes in land use, land cover, and topography. Environmental impact assessments for 23 of the proposals found species in the vicinity of the project area that were designated as Schedule I (the most vulnerable) in India’s Wildlife (Protection) Act (5), yet environmental clearances were granted regardless. For example, one approved project [IA/AS/IND2/92824/2007 in (1)] outlines a plan to conduct extension drilling and test hydrocarbons 1.34 km from Dibru-Saikhowa National Park (6). An environmental impact assessment report confirms the presence of species in the area such as the Critically Endangered white-rumped vulture (Gyps bengalensis) (7), the Vulnerable fishing cat (Prionailurus viverrinus) (8), and the Endangered western hoolock gibbon (Hoolock hoolock) (9), all of which are classified under Schedule I (5). Oil and fossil fuel extraction in forests drives wildlife mortality, habitat loss, and fragmentation as well as carbon sequestration (10), putting these species in further danger.

Development projects that threaten vulnerable species are antithetical to the United Nations’ Sustainable Development Goals (11). Megadiverse countries like India should focus on sustainable development and formulate environment-centered development policies. Project approval decisions should rely on the results of mandatory and more stringent environmental impact assessments, which consider areas in the immediate vicinity of protected areas and forests in addition to the designated project area. More research is needed to assess the efficacy of the mitigation measures mentioned in environmental impact assessment reports. India could conserve forests and protect the habitats of vulnerable species by restricting development to urban areas and industrial zones.

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1. Ministry of Environment, Forest, and Climate Change, Government of India, Parivesh (2020); http://parivesh.nic.in/. To search for approved projects, click on the “Environment clearance” icon at the bottom of the page. Then click “Dashboard” on the blue bar. Select 2020 in the “Year of Submission” dropdown and search. Then click “More info” under the box labeled “EC granted.” The resulting table provides details for 200 approved projects, 73 of which are within 10 km of a forest.
8. S. Mukherjee et al., Prionailurus viverrinus (The IUCN Red List of Threatened Species, 2016).

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North African forests falling to charcoal

In North Africa, illegal man-made fires are on the rise (1), driven in large part by a growing demand for charcoal (2), which is
produced by burning wood in underground pits. In the past, local people collected dead wood on a small scale, and larger operations were regulated by the government (3). However, as the demand for charcoal and the price for which it sells have increased (2), illegal efforts to produce it have multiplied (4). North African countries must address the resulting fires to protect forest ecosystems, which play an important role in the welfare of both urban and rural people and harbor unique and sensitive biodiversity (5).

The religious feast of the sacrifice (Eid al-Adha)—an important celebration in the Islamic religion during which a sheep is sacrificed—increases the demand for charcoal, which is required for traditional meat grilling (6). This year in Algeria, the number of fires peaked on 27 July (4 days before Eid al-Adha) with 66 simultaneous fires in 20 provinces (7). The next few years could bring substantial environmental damage because Eid al-Adha will take place during the summer, when forest fires peak and become difficult to contain (8).

The business model for producing charcoal is ominous for the health of North Africa’s forests because the revenue from the charcoal sold increases with the size of the exploited area. The fires are likely to deteriorate the soil, intensify desertification, and exacerbate climate change (9). A Mediterranean forest requires several decades to recover and reach its equilibrium (10). Climate change has already increased the total area burned by wildfire in the region (11), and the increased anthropogenic disturbance related to charcoal production could threaten the resilience of the environment, the economy, and human well-being (12).

Local authorities should increase enforcement to curtail illegal charcoal production, which often takes place at night and across wide geographic areas (2). Educating the public about the value of these forests and facilitating collaborations between scientists, the government, and rural and urban residents would also be effective strategies. If residents were motivated to report fires and other environmental crimes, authorities could take prompt action for the benefit of the environment.

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REFERENCES AND NOTES

Protect Iran’s Zagros forests from wildfires

Since 21 March, more than 374 wildfires have spread through the oak forests in Iran’s Zagros Mountains (1), burning more than 50,000 ha (2), compared with the average of 15,000 ha of Iranian forests that burn annually in wildfires (3). These deciduous forests, which include trees that are more than 400 years old (4), cover an area of 6 million hectares and are home to a wide variety of wildlife (5), including wolves, Persian squirrels, the endangered Persian leopard (6), and the Persian fallow deer, which was once thought to be extinct (5). Because the Zagros oak trees grow slowly (2), it could take 100 years for the burned areas to recover (7). The Zagros forests feed some environmentalists and researchers set on fire,” Khabar Online (2020); www.khabaronline.ir/news/1397174/ [in Farsi].

ERRATA


Erratum for the Report “Forest microclimate dynamics drive plant responses to warming” by F. Zellweger et al., Science 368, eabd3881 (2020). Published online 26 June 2020. 10.1126/science.eabd3881

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