Can the Spiritual Values of Forests Inspire Effective Conservation?

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ncreasing degradation of tropical forests prompts the consideration of unconventional ideas to promote conservation. In his recent book, E. O. Wilson advocates conserving half of the planet for one species (Homo sapiens) and the other half for the remaining millions of species. His list of "best places on the biosphere" worthy of saving includes the church forests of Ethiopia and the sacred groves of Western Ghats in India and Bhutan. Portions of these ecosystems remain intact today in part because they were considered sacred by the indigenous people. Sacred forests are a crucial component of biodiversity conservation, but they remain difficult to account for in most global biodiversity management networks. They have been fiercely protected by cultural and religious beliefs and taboos for many centuries without government or nongovernmental-organization oversight. In short, they represent a unique conservation success for the planet, especially in developing countries where conventional economic metrics have a tougher time gaining traction. These sites also house the majority of biodiversity for billions of people in Africa and Asia, and their stewardship has been ensured over time through the respect and leadership of religious stakeholders.

Most recent assessments of forest ecosystems prioritize the economic values of diverse services including freshwater, carbon storage, production of foods and building materials, medicines, gas exchange, productivity from sunlight, soil conservation, shade, and biodiversity habitat. Most ecosystem-services assessments overlook the spiritual value of forests, which is admittedly harder to measure with economic metrics. Similarly, the success of Bhutan's "gross happiness index" (GHI), which has led to extensive forest conservation, is also difficult to quantify with Western metrics. The spiritual and cultural value of forests is not only critical in scope but also portends to have the greatest potential for significant international conservation actions, given that several billion people value their forests predominantly on the basis of their spiritual significance. The question remains: How do we translate Western metrics (i.e., dollars and/or consumer products) to accurately measure the spiritual and cultural value of forests, and how do we ensure continued conservation of these forests under a religious and cultural aegis? Although daunting to address, this parameter may have the best chance of success in terms of long-term forest conservation, as compared with economic values.

We cite three case studies on two continents that together comprise almost 1.5 billion people whose forests are conserved because of their spiritual values.

India's sacred forests

India's indigenous people predominantly practice Hinduism, in which the *Bhagavat Gita* preaches that nature conservation and nature worship are the important moral obligations. Historically, before the creation of sacred groves and the worship of god in the form of a deity in a constructed temple, the custom of worshipping trees existed. Even today, Hindu households light a lamp in front of one of several sacred trees, or at least a holy basil plant, and worship them. It is difficult to see a temple

without at least one Ficus religiosa tree (termed *peepal*), which was the species assumed by Lord Krishna, according to the Bhagavat Gita. In other temples, devotees feed wild fishes, which Hindus believe are an incarnation of Lord Vishnu. In Sringeri (a central Western Ghats biodiversity hotspot), over 50 hectares of the River Tunga has been proposed as a fish sanctuary by the temple administrators to protect the flagship fish species mahseer (Tor khudree) and over a dozen endemic upland riverine fishes. Hindus believe that all creatures created by the Lord Brahma are equal to humans and that deceased human souls are reborn in the form of other animals, making animals (like trees) very sacred. Historical evidence, however, does not explain how worshipping a few trees expanded into protecting entire forests. It may have been a strategy to stop British rulers from the widespread felling of India's primary forests. It has been told that the British rulers honored and revered the indigenous community's belief that some forests house the spirits of the local deities, so they left such forests untouched. This may explain why over 1 million sacred forests remain intact across India. The king cobra (Ophiophagus hannah) is a deity of many sacred groves in the states of Kerala and Karantaka that belong to the lower-caste communities, which also demonstrates how the religion is directly involved in the conservation of a threatened species.

Most sacred groves are still managed by the joint Hindu families or temple trusts, unless the joint-family concept disintegrates and the property rights come under dispute. Integration of sacred groves into the stateowned protected areas—by granting