



# Beware of dragons and the animals that dance

Customary conservation in the Gambia, West Africa and Malaysian Borneo,  
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**T**welve percent of the earth's land surface is formally protected as national parks, wildlife reserves, etc. In addition, sacred sites, taboos and customary practices of indigenous peoples and local communities can facilitate environmental conservation in the matrix of land use beyond protected areas, even if that is not their expressed purpose.

Sacred groves from India to Ethiopia conserve biodiversity and provide ecosystem services including watershed protection, hosting pollinators and serving as refugia for wildlife in the landscape. Local freshwater management systems, such as *tagal* in Malaysian Borneo and *fish fêtes* in Guinea, West Africa, encourage locally sustainable fishing via zoning and temporal restrictions. Species-specific hunting taboos such as *fady* in Madagascar manage resource use in culturally relevant ways.

My research considers 1) the ecological value of customary conservation both within protected areas and in the matrix beyond, 2) the persistence of customary conservation through stochastic events and cultural change and 3) the implications of these findings for formal conservation frameworks.

Across West Africa people report that *ninkananka*, or mythical dragons, live in the forest and if you see them, you will die on the spot or soon after. People claim to avoid parts of the forest where the *ninkananka* are said to live for fear of death. I mapped eighteen dragon areas using a Global Positioning Satellite (GPS) unit in Kiang West, the Gambia, and calculated the degree of vegetation cover using satellite imagery from 1984 to 2009. I compared the vegetation cover of the dragon areas with the landscape surrounding them and also with Kiang West National Park and three nearby forest reserves. Despite their small size, the dragon patches of forest were consistently vegetated and did not fluctuate in vegetation cover like the national park or forest reserves. Thus, my research in the Gambia demonstrated a positive ecological value of the local belief in the dragon, which conserved vegetation cover more consistently than formally protected areas. This contribution of customary conservation is noteworthy as formally protected areas in the tropics are particularly sensitive to fluctuations in funding and management capacity.

I also performed household surveys in Dumbuto, a village bordering the national park, and found that 86% of respondents believed that the dragon was real. I also found a positive correlation between belief in the dragon and people who spent more time working in the bush and a negative correlation between people who were highly educated or had pursued advanced religious education. Although the dragon areas currently offer conservation value to the landscape, the correlation between lack of belief and higher education, general or religious, may have implications for the conservation of the landscape as education improves with the country's development.

Considering these findings, my research also explores the effects of stochastic events and cultural change on customary conservation practices in Malaysian Borneo, one of the most bioculturally diverse places on Earth. In Kudat,

a region of Sabah, Malaysian Borneo, the Rungus people formerly believed there were animals in the forest that would dance to provoke you, and if you laughed, you died soon after. These dancing animals lived around the peak of the highest hill in the region, Gugumantong, with implications for watershed protection. However, the British government survey team for Gugumantong included Iban people, locally known as headhunters from the west, who hunted the dancing animals for food. In this case, outsiders compromised the effectiveness of local customary conservation practices. The Rungus communities have only recently formally conserved Gugumantong with assistance from the UNDP Climate Change Program.



Photo: Nasiri Sabiah

Spiritual leaders perform ritual to protect community forest, Alab Village, Sabah, Malaysian Borneo.

My research concludes by considering the implications of the ecological value and the degree of persistence of customary conservation for formal conservation frameworks. I discuss opportunities for the integration of customary conservation with the formal conservation framework, such as the adoption of *tagal*, a local Kadazan Dusun river management system in Malaysian Borneo, by the Sabah Department of Fisheries. Initially approached by one village whose *tagal* practices had waned over time, the Department of Fisheries assisted the community with the reintroduction of the system, eventually rolling out *tagal* to forty villages, some of which did not previously practise *tagal* locally.

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