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Church forests in Ethiopia

In their review “Sacred groves: potential for biodiversity management” (*Front Ecol Environ* 2006; **4(10)**:519–24), SA Bhagwat and C Rutte propose to incorporate small forest patches and other natural sacred sites into existing conservation networks to enhance their effectiveness. While I don’t want to enter the heavily discussed single large or several small (SLOSS) debate, I do agree that sacred groves can be particularly useful for conserving biodiversity by covering a wider variety of habitats than would be achieved by protecting a single large area. Sometimes it is not feasible to maintain large tracts of forest, Bhagwat and Rutte write. An undiscussed yet obvious reason is the absence of large forests due to historical deforestation and fragmentation. Aiming to extend the attention given to small forest fragments for the conservation of biodiversity, I would like to draw the attention of the readers to an extreme case: the Ethiopian Orthodox church forests.

The montane forests of the Ethiopian plateau are known for their exceptionally high vertebrate and plant diversity, rich in narrow-ranging species (Burgess et al. 2006). Overgrazing and deforestation for wood collection and the creation of arable land are causing widespread land degradation, at least since the Semitic immigration to northern Ethiopia in ~500BC. With the exception of a few formally protected areas (National Forest Priority Areas), fragments of the original Afromontane forest in the northern highlands are practically only found on sacred sites such as holy waters, monasteries and church yards. Since the dominant Afromontane tree species generally do not accumulate seeds in the soil (e.g. Wassie and Teketay 2006) and are thus no longer present in the semiarid, degraded landscape matrix, conservation of dry

Afromontane woody flora depends on the conservation and sustainable use of sacred groves (Aerts *et al.* 2006). In this extreme case, conservation using a network of sacred groves has become a necessity rather than an alternative option.

Although people generally respect the integrity of the church forests, many sacred groves are threatened. For an outsider, the most direct threat would seem to be the selective logging of large trees for constructing or expanding churches. But were it not for the churches, these trees would have been cut long ago, thus selective logging that serves the churches is more an inevitability than a menace. Unfortunately felled trees are commonly replaced by fast growing non-native tree species, or not at all. More serious threats are those that are not controlled by the church or regulated by the community. Poor boundary demarcation often leads to encroachment. Snags at the forest edge are eventually cut for firewood and quite often drying of trees is promoted by gradually stripping the bark of healthy trees. Grazing by domestic livestock is not allowed, except by cattle owned by the priests. Although compared to the grazing lands livestock pressure is low, natural regeneration is suppressed, resulting in degraded stands without seedlings and juvenile trees.

In a nutshell, church forests in northern Ethiopia play an important role in biodiversity conservation because they are the only remaining patches of Afromontane forest in a landscape of degraded semiarid savanna, and because the community has a tradition of protecting them. Increasing the size of forest patches and placing forest plantations and grazing exclosures in the

vicinity of sacred groves may increase the likelihood of patch colonization by forest birds and thus foster the regeneration of native woody species.

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