Biodiversity Conservation in Costa Rica

Community-Based Tourism for Sustainable Development in the Alexander Skutch Biological Corridor, Southern Costa Rica

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This study focuses on community-based tourism as an option for communities which make up the Alexander Skutch Biological Corridor in southern Costa Rica, a biologically significant region adjacent to the Mesoamerican Biological Corridor that spans Central America. There are several issues affecting Costa Rica which necessitate development of sustainable tourism projects that contribute to conservation and community livelihoods. The challenge within the Alexander Skutch Biological Corridor to increase the forest cover is linked to the lack of incentives to grow shade coffee in the region. Community-based ecotourism is seen to have potential to supplement residents' income and encourage shade-grown coffee through the development of tours to coffee farms and increasing visitation to local businesses. In order to assess the Corridor as a destination and determine the potential for community-based tourism there, a qualitative research study was conducted from January to June 2008.

The study results were three-fold. First was the assessment of the situation and creation of an inventory of tourism attractions, services and public services in the Corridor which showed that although the area is lacking in tourism services and infrastructure, there is sufficient infrastructure to begin low-impact community-based ecotourism. Second was the determination that there is potential for community-based tourism in the Corridor based on positive resident attitudes and validation by key informants. Third was the identification of elements necessary in successful community-based tourism enterprise (CBTE) culminating in the conceptualization of a hypothetical CBTE model that could be tested in the Corridor.

A Landscape Analysis of Forest Fragmentation and Loss in the Alexander Skutch Biological Corridor, Costa Rica

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The Alexander Skutch Biological Corridor (ASBC), located in south-central Costa Rica, links tropical forest fragments from high to low elevations through a series of protected areas, including the York University-owned Las Nubes Reserve. The corridor traverses three Holdridge ecological life zones, including the endangered lowland tropical forest zone. Despite the ecological significance of the corridor, there is a lack of up-to-date information on the extent of forest cover remaining in the area. A 2008 analysis of forest cover in the ASBC was undertaken using GIS and remotely-sensed data to assess the degree of forest loss and landscape change in the corridor since 1998.

Study results reveal that forest cover in the corridor has decreased an alarming19% between 1998 and 2008, with a corresponding decrease in average forest patch size and proportion of core habitat area. However, physical connectivity between remnant patches increased from 39% in 1998 to 73% in 2008, suggesting that the recent reforestation efforts of local community groups and improved environmental practices may have reduced the degree of isolation in the corridor. Nevertheless, the overall loss of forest since 1998, particularly in lowland regions, threatens the ability of native species populations to persist in the corridor. As such, the ecological restoration of key habitat areas in the corridor is essential if the long-term protection of biodiversity is to be achieved. A set of recommendations to guide the strategic placement of restoration efforts is provided with the aim of informing the future environmental management of the ASBC.

Conservation Ecology of a Woodpecker Community in the Alexander Skutch Biological Corridor, Costa Rica: Identifying indicator species and conservation priorities in rural Latin America

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While there is a growing body of work investigating avian diversity in various Neotropical habitats, including shade-coffee agro-ecosystems, up till now, no work has been done looking specifically at woodpeckers and their relationships to these Neotropical habitats. Woodpeckers have been shown to be effective indicator species on both a landscape and regional scale, but have never been studied in this regard in Central America. A study was conducted looking at a community of woodpeckers and their habitat preferences in the Alexander Skutch Biological Corridor, Costa Rica. Experiments were conducted between late September 2007 and early February 2008. Seven species of woodpeckers were investigated through conducting silent point counts combined with the use of vocalization playback recordings, which were used to improve the detection of the woodpeckers. Surveyed habitats included: primary mid-elevation rainforest, primary cloudforest, secondary mid-elevation rainforest, regenerating coffee plantations, and shade coffee agro-ecosystems. Results showed significant relationships between three of the woodpecker species and several habitat types. Pale-billed Woodpeckers, Campephilus guatemalensis, were shown to be a significant indicator of primary middle elevation rainforest; Red-crowned Woodpeckers, Melanerpes rubricapillus, were identified as indicators of disturbed landscapes such as shade coffee plantations and regenerating forest; and Smokey-brown Woodpeckers, Veniliornis fumigatus, were significantly associated with higher elevation cloudforest. The Golden-olive Woodpecker, Piculus rubiginosus, was not found to be a resident species in the Alexander Skutch Biological Corridor. This study contributes to the growing body of literature highlighting the importance of woodpeckers in conservation planning efforts, and is the first such study related specifically to biodiversity conservation in the Neotropics.