



The Development of an Ethnobiomedical Forest Reserve in Belize: Its Role in the Preservation of Biological and Cultural Diversity

The concept of the extractive reserve as a tool for conservation has received a great deal of attention over the last few years. Many of these reserves involve tracts of forest where nontimber forest products can be harvested by local individuals or groups who then, it is argued, have a stake in the preservation of the biological integrity of the ecosystem. Products such as rubber, Brazil nuts, copal resin, plant oils, fruits, fiber, construction materials, foliage, and house plants for the florist trade, and a wealth of other products have been selected for harvest and marketing from extractive reserves in the Amazon, Central America, Asia, and Africa. Numerous perspectives on these resources, both positive and negative have been highlighted in recent debates in public fora as well as in the literature (Browder 1992; Ryan 1991).

In Belize, Central America, traditional healers depend heavily on the extraction of plant medicines from local primary and secondary forests. Over the past few decades, as more and more forests have been destroyed, some of the native plant medicines have become rare, and even extinct at the population level. According to our observations, approximately 75% of the people in Belize depend on plant medicines for some aspect of their primary health care needs. This is consistent with the proportion of the population depending on herbal remedies in most other parts of the developing world (Farnsworth et al. 1985). In Belize, as throughout Central America, hierbateros or herb gatherers are a group of people who gather traditional medicines from the forest for sale to traditional healers. Balick and Mendelsohn (1992) discussed the economic impact of the plant medicines gathered from Belizean forests, as well as their importance in the maintenance of the local primary health care network. In 1992, The Belize Association of Traditional Healers was formed as an expression of the common interest in traditional medicine held by individuals involved in the provision of health care in Belize. Its members include people from most of the nine cultural and ethnic groups found in Belize. One of the primary goals of The Belize Association of Traditional Healers is to help reduce the rate of erosion of

traditional knowledge involving traditional medicine, as many healers in this region (as elsewhere) are elderly and have few, if any, apprentices. Another goal has been to develop a policy on intellectual property rights involving the commercial use of ethnomedical knowledge.

In June of 1993, a 2400 ha parcel of lowland tropical forest was deeded to the Belize Association of Traditional Healers to serve as a place where the extraction of medicinal plants could be undertaken as well as to serve as a locale for teaching and apprenticeship. This particular forest, in the Yalbak region of Belize, contains a broad diversity of medicinal plant species. Also within its borders are many different types of animals, including jaguar, tapir, peccary, howler monkeys, as well as numerous other mammals, birds, and reptiles.

The area has been named "Terra Nova Rain Forest Reserve." The Belize Association of Traditional Healers is developing plans for infrastructure development within Terra Nova and outside its boundaries in several neighboring villages. Terra Nova will have three primary components contributing to its program and upkeep. The first and foremost are the activities of the traditional healers, their apprentices, and local students. Trails will be cut, useful plants identified and labeled, and the regulated harvest of materials will be undertaken. Seedlings of medicinal plants rescued from nearby areas that have been deforested are being transplanted to Terra Nova, primarily by local students, to enrich certain parts of the reserve where the native flora has been degraded. A major concern will be to prevent the over-harvest of its economically important components, when stimulated by the initial burst of enthusiasm for its raw materials.

The second component of the reserve's program will be ethnobotanical and ecological research, designed to identify the plant resources it contains and develop appropriate technologies for their sustainable extraction. Dr. David Campbell from Grinnell College and his students have constructed ecological transects in selected parts of the reserve to serve as long-term study sites. Some of these plots are areas where extraction will take

place, while others will monitor changes in the native vegetation. Ethnobotanical inventories, as part of the Belize Ethnobotany Project, a collaborative venture between The New York Botanical Garden Institute of Economic Botany and the Ix Chel Tropical Research Foundation, have begun to catalog economically important plants in the reserve as well as in the surrounding Cayo District. Other scientists will be invited to participate in these studies, as well as in the archeological work that will occur on some of the sites within Terra Nova.

A third component of Terra Nova's program is to be ecological tourism. Belize is host to hundreds of thousands of such tourists annually, who visit its forests, archeological sites, and coastal resources. When facilities and infrastructure are developed, interested visitors will be invited to Terra Nova to enjoy nature walks and to participate in seminars and classes with traditional healers in a forest setting.

To the best of our knowledge, Terra Nova Rain Forest Reserve is the first such reserve operated by an association of traditional healers, exclusively for the extraction of locally consumed medicinal plants, as well as the teaching of cultural traditions. We propose that this type of reserve be classified as an "ethnobiomedical forest reserve" indicating its function as a guardian of biological diversity, knowledge about traditional medical systems, and foundation for the local primary health care system. The concept of the ethnobiomedical forest reserve recognizes the complex interaction between plants, animals, and people in a biologically rich setting.

It will be many years before this first ethnobiomedical reserve can be judged as a success or failure. A great deal of work must go into developing the management plan and finding the financial and human resources to implement it. Land use pressures surrounding the reserve, specifically logging and agriculture, as well as sociological and political factors could endanger the long-term existence of the reserve. However, in Belize there is a great deal of optimism about this reserve, in view of its innovative nature, and much support for it at the grass roots level.

The small Central American nation of Belize has a strong tradition of conservation of its natural resources, through the establishment of numerous biological reserves. It is appropriate that this nation be the site for the establishment of the first ethnobiomedical forest re-

serve operated by an association of traditional healers, working in collaboration with scientists, governmental policymakers, and the local tourist industry.

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Michael J. Balick

*Institute of Economic Botany
The New York Botanical Garden
Bronx, NY 10458, U.S.A.*

Rosita Arvigo

*Ix Chel Tropical Research Center
San Ignacio, Cayo District, Belize*

Leopoldo Romero

*President, Belize Association of Traditional Healers
c/o General Delivery
San Ignacio, Cayo District, Belize*

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