

Seacology Helps Conserve Medicinal Plants in Madagascar

by Karen Peterson

Madagascar, the world's fourth largest island, is sometimes referred to as the "Seventh Continent" because 80 percent of its plant and animal life is found nowhere else on earth. Geographically isolated in the Indian Ocean 250 miles east of the Mozambique coast, the country is home to over 60 lemur species, two thirds of the world's chameleon species, and over 1,000 known species of orchids.

With this biological richness, however, comes vulnerability. Madagascar is one of the world's poorest nations, and until recently, destruction of Madagascar's natural resources went unchecked. Widespread slash-and-burn agriculture, logging, and cutting of trees for charcoal production have led to the disappearance of over three-fourths of the country's forest cover. Soil erosion, groundwater contamination, and desertification have followed in many areas of the country. Fortunately, this devastating habitat loss has not gone unnoticed. Within Madagascar, extraordinary steps are being taken to preserve the country's remaining intact forests. An environmentally aware new national president and increasing involvement on the part of the Malagasy



Orchids in bloom on the flank of Mt. Angavokely.
Photo © 2005 Thomas Elmqvist

endangered biodiversity of islands throughout the world. In the last 400 years, the majority of the world's plant and animal extinctions have taken place on islands. Indigenous people are all too often faced with the dilemma of choosing between protecting their precious natural resources and economic development. Seacology searches for win-win situations where both the local environment is protected and islanders receive some tangible benefit for doing so. In Falealupo, Samoa, Seacology built a critically needed school in exchange for the establishment of a 30,000-acre forest reserve. In Navolau, Fiji, Seacology is constructing a community center in exchange for the establishment of a 370,000-acre marine reserve. Because the organization works closely with islanders right from the beginning, Seacology projects enjoy strong local support and, consequently, lead to long-term benefits.

When Seacology wanted to find an indigenous-led conservation project on the Great Red Island of Madagascar, the organization's management sought the advice of Seacology Scientific Advisory Board Member Thomas Elmqvist of the Swedish Biodiversity Centre in Uppsala, Sweden. Dr. Elmqvist, who has extensively studied the country's flora, introduced Seacology to

the work of a Malagasy conservationist and professor at the University of Antananarivo, Elisabeth Rabakonandrianina, PhD.

Dr. Rabakonandrianina ("Bako") has worked passionately to protect Mt. Angavokely, a 1,717-acre oasis of intact high altitude rainforest just 15 miles outside the capital city of Antananarivo. Home to over 120 species of rare and endangered orchids, the forest is an important watershed for three local communities totaling over 20,000 inhabitants. Under Bako's supervision, Seacology is working with the Malagasy environmental organization ARVERT, faculty from the University of Antananarivo and Uppsala University, and the Service des Stations Forestieres to create a new national park at Mt. Angavokely. Singular in its proximity to the capital city of Antananarivo, this park will provide recreational opportunities for local residents as well as research opportunities for scientists and students.

Several medicinal herbs have been found at Mt. Angavokely, including three members of the family Asteraceae: *Helichrysum gymnocephalum* (DC.) H. Humb. (uses include aphrodisiac, antiseptic, stimulating, treatment for bronchitis); the endemic *Secneicia faujasiodides* Bak (used for wound healing); and the endemic *Psiadia altissima* (DC.) Benth and Hook (used for toothpaste and to treat eczema, also a good soil indicator). Other endemics include *Bryophyllum proliferum* (Bowie) ex Hook, Crassulaceae, which is used to treat coughing, and *Brachylaena ramiflora* (DC.) Humbert, Asteraceae, used to lower malarial fever. Non-endemics include *Siegesbeckia orientalis* L., Asteraceae, which is used to stop bleeding and heal wounds. According to Bako, the Malagasy name for this plant, Satrikoazamaratra, is translated as, "I am happy to have wounds because it heals real fast."

Work to make Mt. Angavokely safe and accessible for researchers and recreationalists alike has progressed despite obstacles such as an arson-caused fire in 2001, which destroyed the only populations of some of the mountain's orchids. Orchid "poaching" activity has been significant in the area until recently. The Seacology-funded project includes orchid cultivation as an economic alternative. As well, Bako has introduced an alternative charcoal, which uses forest litter



Aloe capitata on Mt. Angavokely. Photo © 2005
Karen Peterson

people are helping to stem the tide of destruction. Additionally, Madagascar has become the focus of numerous efforts by international conservation organizations, including the Berkeley, California-based Seacology.

Seacology is the world's premier nonprofit environmental organization with the sole purpose of preserving the highly

and rice hulls instead of hardwood. For her outstanding dedication in protecting Mt. Angavokely, and her efforts to involve the local communities in the establishment of the new park, Bako was awarded the 2003 Seacology Prize. The Prize, funded by Seacology President Ken Murdock (formerly owner of Nature's Way [one of the leading U.S. herb companies] and one of the founders of Seacology), is awarded annually to an indigenous islander for exceptional achievement in preserving the environment and culture of any of the world's 100,000 plus islands.

Seacology is also working with the United Kingdom-based conservation organization Azafady to protect the Manafiafy Forest in southeastern Madagascar. Since 1997, the Malagasy government has been implementing a policy of Community Forest Management, which consists of devolving control over forest resources to local communities with the help of a mediating non-governmental organization. Azafady has been asked by villagers in the Sainte Luce area to facilitate the transfer of control over the Manafiafy Forest. This



Aloe capitata and other succulent plants atop Mt. Agavokely. Photo © 2005 Karen Peterson

1,730-acre area comprises one of the last remaining stands of littoral forest in Madagascar, and it has been described as being in "pristine" condition. It is home to critically endangered palms, birds, and the rare brown collared lemur.

Members of the community have been trained as part-time forest guardians to patrol the area and act as guides. However, prior to Seacology's involvement, forest

guardians, extension agents, and researchers had to spend up to six hours getting to and from the forest each day, and they did not have a base from which they could coordinate their activities. Four forest stations, which are currently being constructed, will allow forest guardians to have a more continuous presence in the area. In situ nurseries will allow for more viable replanting, and volunteers and extension agents will be able to more effectively survey and monitor the forest's flora and fauna.

More information regarding Seacology's projects to protect the environments and cultures of islands throughout the world is available at www.seacology.org or by contacting Seacology at islands@seacology.org (telephone: 510-559-3505). 🌱

Karen Peterson is program officer for Seacology, where she has helped to implement almost 100 projects to protect island environments and cultures throughout the world. She previously worked as program associate for the Goldman Environmental Prize, dubbed the "Nobel Prize for the Environment" by international news media.

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