



Nectandra Institute

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A Chance for a Great Leap

It fell on our organization's lap this past January, the consequence of a series of events in Osa Peninsula that had little to do with Nectandra. It is not a straightforward story, but bears telling because it will be germane to the history and direction of Nectandra Institute.

The precipitating event was Alvaro Ugalde's reluctant resignation from the Costa Rican government's Ministry of Energy and Environment (MINAE), the federal agency charged with the governing and care of public protected areas. For readers who are not familiar with Alvaro, he is one of two founders of the Costa Rican National Park system and a lifetime ardent conservationist (*The Quetzal and The Macaw*, David R. Wallace, 1992).

Since February 2003 Alvaro worked as the director of MINAE's Osa Conservation Area. At least eight directors held that position in the decade before 2002.

The jewel of the Osa Conservation Area is Corcovado National Park, a 54,000 hectares (136,000 acres) last wild place, still with jaguars, tapirs and large mammals. Yet, in 2003, there were just 8 park rangers manning the 50,000 hectares of Corcovado National Park, and very few elsewhere. The place practically unguarded, jaguars (and other large animals) fell victim to the game hunters' boldness and skill. From photographic research in Corcovado, it is clear that their population plunged from 100-150 down to 40-50 in the four years from 2000-2004 (communications, Eduardo Carillo) and is near the critical threshold of extinction. The main problem: the killing of the White Lipped Peccary, the jaguar's main source of food.

The Osa Peninsula holds a special place in Alvaro's heart. He was instrumental in the creation of Corcovado National

Park while being the director for the Parks Service. He personally negotiated with and successfully oversaw the relocation of squatters and later the expulsion of gold miners to create Corcovado Park. After his stint with the Park Service, he watched with pride in the intervening years the increasing appreciation for the Parks rich biodiversity, by scientific investigators and foreign tourists. He also watched with mounting anxiety the decreasing care and vigilance given by the central government. It is no wonder that the poachers, almost by default, "took care" of the game and their predators, the jaguars. The latter are now on the endangered list.

Since the park's inception, in his many varied governmental and non-profit capacities, Alvaro helped raise millions for Corcovado, but conditions were deteriorating in spite of the money. In 2003, he could watch no longer from the sidelines. Through personal lobbying, he persuaded CRUSA (Costa Rica-USA foundation, a bi-national non-profit organization) to fund the position of the Osa MINAE directorship for two years and assumed the job himself. A third year was sponsored by TNC, CI and CRUSA. To energize the anemic park, Osa received \$3 million from the Gordon & Betty Moore Foundation with crucial help from the Friends of Osa and other non-profit organizations. Alvaro involved the local communities in his attempt to create buffer zones for the park. He recruited municipalities to make environmental plans for the growth of tourism in the region. He worked on ways to assist economically the impoverished owners of forested properties, *e.g.*, through payments for environmental services. With the injection of the Moore Foundation grant money, he hired 50 park rangers to revitalize the management and to control hunting and logging outside the parks. Unfortunately, no one thought to secure the salary for the directorship beyond Jan. 2006. Alvaro abruptly found himself without a job.

Often, the ending of one thing means the beginning of another. Such was the case for the Cloud Forest Biological Corridor Project at Nectandra Institute. Alvaro's lack of support in Osa presented an opportunity too good to be ignored by Nectandra Institute. For several years now, the continuing problems of cloud forests destruction around our area weighed heavily on us at Nectandra. We could no longer sit back or just file our complaints with the local MINAE authorities.

Our preserve, as illustrated on the map, is located almost in the middle between two large tracts of pristine and protected

forests. West and north of us are two internationally famous private preserves: Monteverde and the Children's Rainforest, the latter flanked on the south by Alberto Brenes Reserve (7000 ha. managed by the University of Costa Rica and the Ministry of Environment). East of us is the Juan Castro Blanco National Park. Sadly, the area between these two protected tracts did not fare so well; the forests largely have been stripped for pasture and agriculture. In the last 20 years, after the international beef market crashed, many forests and former pastures were converted to plantations of ornamental plants for export. Land use is rapidly changing. While pasture to dracenae plantation conversion is legal, forest conversion is not. Yet, the latter occurs largely unchecked. Soil erosion worsened with pasture-to-dracenae field shift. The creeks at Nectandra are usually crystal clear, but frequent heavy rain invariably turns them turbid with tons of mud washed from our neighbors' ornamentals fields. It is thus not surprising that the once plentiful fresh water shrimps, crabs and other creatures in those creeks have all but disappeared, not to mention the incalculable loss of top soil. Before the forests were cut, flooding in the little Balsa valley (above which I resided) was a rare event, about 3 times in a decade. In 2005, coincident with the extensive tilling of new dracenae fields, it flooded 3 times. This deforestation is even more widespread further down-slope from us in the Plain of San Carlos, where large scale agriculture, cattle ranching and massive pineapple plantations have largely replaced the forest. One has to be apathetic not to see the consequence for biodiversity if this trend continues.

These deteriorating conditions occurred in spite of intense efforts by proactive citizens in the 1990's in our Canton San Ramon (equivalent of a US county) where Nectandra is located. They organized, lobbied and goaded the city and federal government to agree to jointly protect the environment in the district. Unfortunately, the formal agreement remained essentially just that, a paper agreement. The illegal clearing of forests continued.

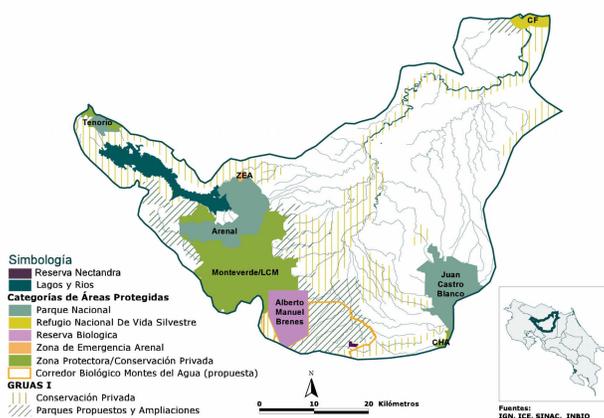
In the simplest terms, the water, the fauna and flora depend on the forest, the forest on the clouds, the clouds on the moist trade winds from the ocean crossing the plain of San Carlos to reach us. How far the moist air can travel uphill depends mainly on the temperature over the plain of San Carlos below us. The warmer the land-mass (*i.e.*, after deforestation), the higher the clouds. The average cloud levels have inched up more than 100 m over the last 40 years. If unchecked, it will overshoot Nectandra's forest in a

few decades. The time for urgent action is overdue.

Having spent countless of hours thinking about a plan of action to slow the environmental deterioration of our own cloud forests, it was obvious to us that it is late for local, small scale action. Our chance rests on bold, effective and integrated, region-wide environmental **and** private restoration work. It would have to include coordination of up-to-date scientific, geographic and social information, a capacity to evaluate available complex data sets and to sort them into a system of conservation priorities. The scope of the project must include the people **and** ecosystems, from the upper cloud forests down to the lowlands where the trade-winds must cross, all 300,000 hectares of the San Carlos watershed. It must rally all the small and big communities to form an alliance and rely on their own efforts to protect their common ecosystem, especially their watersheds. In caring for the communities' life water, they must protect their forest and its biodiversity. It is a gigantic challenge for a small organization like Nectandra Institute, but eminently doable. We must start. With Alvaro on board, we now have a chance.

To make a long story short, The Cloud Forest Biological Corridor is off and running since February when Alvaro once more joined Nectandra Institute as an active member. With the assistance of a geographer, a biologist and a graduate student volunteer to set up a Geographic Information System and the World Wildlife Fund High Value Conservation Value Forest Toolkit (an analytical and modeling computer program), Alvaro and his crew have made very impressive and rapid progress. For details, please visit our Website (www.Nectandra.org/BeyondNectandra).

Sistema de Áreas Protegidas en la Cuenca del Río San Carlos



2006 Events

February. 35th anniversary reunion - In 1971, a group of young, energetic Peace Corps volunteers came to Costa Rica to help build trails and public facilities for the first Costa Rican National Park in Santa Rosa, Guanacaste. The then newly formed Costa Rican National Park system had a total of two staff members, **Mario Boza** who was the director and **Alvaro Ugalde**, his assistant administrator. Their first reunion ever after 35 years was hosted by **Alvaro Ugalde** at Nectandra Garden. Ten of the original volunteers came with their wives to attend a full day workshop on the current status of the the National Park system. The Minister of Environment and Energy gave the keynote lecture.

Spiders Photo inventory - We have initiated a spider photo inventory project. Although photography of spiders will not enable complete identification without the preservation of archival specimens, digital photos provide a preliminary record of our present spider population. Spiders comprise a large and very varied family in the tropics. The number of species in the Neotropics is undetermined, but is suspected to be very large. The majority of the Latin American spider species are probably still unknown.



Orb weaver, *Leucauge* sp., from below

Small Mammal Inventory - **Shawn Sullivan**, newly graduated in Environmental Biology from Laurentian University in Sudbury, Canada, volunteered two months to survey small mammals at our preserve. He trapped and released his subjects to study the distribution of small mammals during the two wet-dry transition periods. He spent February (wet-to-dry) and August (dry to wet) recording his observations. Thanks to his efforts, we are now able to continue the investigation longitudinally to get a more general picture of the distribution and traffic of the small mammals in the preserve.

New Staff for the Institute - **Alvaro Ugalde** is now directing full-time, as of February 1, our Cloud Forest Biological Corridor Project (see above article for details). To assist him, a geographer and a biologist were hired to do strategic planning, to coordinate and disseminate available scientific information pertinent to specific communities, generate geographic and ecologic maps to work with the communities and water associations.



Same orb weaver, from above (0.8 cm)

Aerial Photos - **Dr. Ann Gallie**, specialist in remote sensing from Laurentian University, donated funds to purchase a series of aerial photos (from 10000 m) of the Cloud Forest Corridor. The images were taken as part of the NASA *Carta 2005* Mission. The data from these recent photos will be analyzed and compared to those from 1992. The resultant comparison should give us a clearer and more accurate idea of the land-use changes in the region.

Workshops - Alvaro hosted a number of workshops to introduce our organization and its watershed restoration initiatives as part of the Cloud Forest Biological Corridor Project. The attendees included representatives from as many governing, public and community level organizations as we could round up. Our message was simple and direct. We must have water to live, our rivers are dying, we each can do something to restore them to life, the responsibility is ours individually and collectively. Nectandra Institute plans to act as catalyst, to assume the role of a clearing house for scientific information and assist various communities in integrated efforts (scientific, geopolitical as well as potential financial mechanisms) to rescue, stabilize, and restore their watersheds and rivers. In the process, our cloud forests will benefit, so will its biodiversity, and with luck, us humans.