preserving the pastaza

Dr. Sierra and his colleagues promote environmental conservation through strategic land management.

"LET ME SHOW YOU A PICTURE OF THE CHONTA palm," says Dr. Rodrigo Sierra, Director of the University of Texas at Austin's Center for Environmental Studies in Latin America at LLILAS. The chonta palm and its fruit are just one of the resources of the Achuar people, one of the indigenous groups Sierra works with in Ecuador. Now, back in his office in the geography building on the UT campus, the tropical forests are never far from Sierra's mind.

Sierra's research takes place in the Pastaza region of eastern Ecuador, bordering Peru, and covers a land area of about 3 million acres. The Achuar, Shiawar, and Zapara people—indigenous groups who won rights to the land in the 1990s—inhabit the area. The groups have lived on the lands for centuries and have a deep understanding of the richness of the plants and animals that live there. Most of the groups have little contact with outsiders, and support themselves just as their ancestors did, by farming and hunting in the tropical forest.

Now, as oil exploration and new colonists put additional demands on the land, the area is experiencing deforestation that limits the movements of species. Development pressures are ever increasing, and this change in native habitats threatens biodiversity in the region.

Sierra and collaborators from the Fundación Ecuatoriana de Estudios Ecológicos (EcoCiencia) are currently in the middle of a three-year biodiversity conservation and resource management project to study land usage by Ecuador's indigenous communities. The project will help the communities analyze their land usage and create and implement strategic land management plans that work to support the community and the environment simultaneously. Their research is supported by a grant of nearly $2 million from the Gordon and Betty Moore Foundation as part of the foundation's Andes-Amazon Initiative.

The first year of the project was used to collect data about how the communities currently use their lands. The team uses sophisticated mapping techniques and talks with locals to create digital maps of the area. "We dedicated ourselves to taking baseline measurements of where communities are right now," Sierra said. "The basic indicators are (1) What they are producing, and (2) What they are consuming. Once we know the baselines, we can help them target their efforts in a meaningful way."

Now that Sierra and his team have established the community's usage and consumption patterns, the next phase of the project will focus on ways that the groups can conserve the areas that are not in conflict with what they actually use and make the most of their resources. Ideally, certain areas will be set aside as wildlife reserves that allow the movement of different species. "We're working on small, productive projects," Sierra says. "This part of the project is just beginning."

One of the avenues the team is exploring is how to commercialize products the community makes. For example, the team is researching ways that the groups can get organic certification for products such as oil from the chonta palm nut. They also have forged a relationship with the Chankuap Foundation, a nonprofit group that supports sustainable development by marketing and distributing handmade products from Ecuador. "We want to compensate people for conserving their resources, and we're looking for conditions and incentives that will work on a larger scale," Sierra says. "We assume that because people want to make money, they will take advantage of these opportunities."

The team also is studying ways to organize and improve transportation and limit bottlenecks. Currently, there is no road to the region, and access to airstrips is very limited, especially to those that accommodate larger planes. Dr. Michael Kuby, an Associate Professor of Geography from Arizona State University, is working to develop a new transportation model to help move products and people in and out of the region efficiently.

The project also will establish a monitoring program to measure the impact that Sierra's group has had on the community. Community members also are being trained to help sustain the effects of the program after the three-year project ends. "I'm most excited for the integration of social objectives with conservation objectives," Sierra said. "The challenge is to make conservation worthwhile for people."