



Case Study | Land Cover Mapping

Sustainability Research in the Yucatan Peninsula

El Colegio de la Frontera Sur (ECOSUR) in Mexico uses IDRISI to monitor land-use change and simulate the effects of such change in the southern Yucatan peninsular region. ECOSUR is a government funded research institute specializing in sustainable development issues in southern Mexico. It is composed of 5 research units-Tapachula, San Cristobal de las Casas, Chetumal, Campeche and Villahermosa-located in the Mexican states bordering Guatemala and Belize and covering all the Maya region of Mexico.

The southern part of the Yucatan peninsula was the scene of the Late Classic Maya culture until about the year A.D. 900. Today it is dominated by the Calakmul Biosphere Reserve and is part of the Mesoamerican Biological Corridor. It has also been home to large former "chicle" (the prime material for chewing gum) collecting communities, and more recently, farming communities increasingly engaged in chili production. During the last 30 years there has been a strong increase in population.

ECOSUR incorporates a variety of data in their research including satellite imagery, vegetation, flora and fauna data, and population and socioeconomic data. By utilizing IDRISI's decision support and simulation tools, the researchers at ECOSUR will measure and evaluate the effects of certain land use and deforestation decisions on the biodiversity and carbon balance of the area.

Researchers of ECOSUR have been working for more than 15 years in the area on ecological, economic and social issues. Together with Clark University and a team of other US universities, they are now aiming at the integration of this knowledge in instruments that may help establish a reasonable relation between society and nature. The use of satellite imagery is indispensable for this work, and until recently only a few ECOSUR researchers were trained in image analysis.

The Graduate School of Geography, Clark University (Worcester, MA) and ECOSUR have been collaborating over the last four years in a NASA-LCLUC and NSF-CMU financed project, "Land cover and land-use changes in the southern Yucatan peninsular region." The project aims at developing the data and instruments that may help to detect and understand the socioeconomic and environmental effects of land-change in the region, with an eye on biodiversity and carbon storage, in the last continuous area of forest in Mesoamerica, also known as the Maya forest.