

Mexico: Maya Forest

# CALAKMUL BIOSPHERE RESERVE

*Heart of the Maya Forest Rich with Natural and Cultural Wonders*



**ecoregion** Yucatan Dry Forests; Yucatan Moist Forests; Peten-Veracruz Moist Forests

**targets** low, medium and high deciduous forest; evergreen forest; swamp; savannah; crocodiles; spider and howler monkeys; king vulture; migratory songbirds and raptors; bats; jaguar; puma; ocelot; jaguarundi; tigrillo; white-tailed deer; baird's tapir; giant anteater; crested guan; great curassow

**stresses** slash and burn agriculture; cattle grazing; illegal and unsustainable timbering; population growth; road construction; hunting

**strategies** strengthen partner organizations; bolster reserve management/infrastructure; promote sustainable farming and forestry practices; secure conservation easements; acquire land; secure timber rights

**results** working to protect 600,000 acres; developing incentives for private lands protection; trained reserve patrol guards; guided community members in sustainable agriculture

**partners** Pronatura Peninsula Yucatán; National Commission for Natural Protected Areas; local landowners; state government of Campeche

**2005 funding need** \$1 million for capital projects; \$200,000 for conservation programs

**leveraging opportunity** TNC's Wilson Challenge Grant Program



Archeologists estimate 50,000 Mayans once lived in the forests of Calakmul. © J. Cope

In southern Mexico's Calakmul Biosphere Reserve, Mayan temples seem to float on the forests' canopy, like ships of stone on a sea of green. Here, an entire city once stood, but it was claimed by the forest centuries ago.

The name "Calakmul" comes from the Maya language and means "the place of the two adjacent pyramids" or more loosely translated, the two towers. Calakmul's imposing structures and overall layout are remarkably well preserved and give a vivid picture of life in an ancient Maya capital. Archeologists estimate 50,000 people lived here at one time.

Stepping away from this archeological site — perhaps by following the trail of a jaguar, the flight of a migratory bird or the distant wail of a howler monkey — Calakmul is seen as a part of a greater landscape and a piece of a natural puzzle. Its 1.8 million acres represent the heart of the Maya Forest, an ecological region stretching across three countries. In the Maya Forest, lush forested hillsides are linked by underground rivers that eventually flow through coastal marshes to the bounty of the Caribbean Sea.

Calakmul is a tropical forest, with vegetation types including low,



Calakmul is home to five of Mexico's six large cat species, including the ocelot. © J. Andrews

medium and high deciduous forest, evergreen forest, swamp and savannah. These forests and wetlands provide refuge for a variety of rare and endangered species, including everything from large cats and crocodiles to duck-billed tree frogs and monkeys. There are 94 species of mammals, including two species of primates and six species of marsupial.

Within Calakmul, more than 230 bird species have been recorded. Calakmul is especially important for rare or threatened birds of prey such as the king vulture, the black hawk-eagle, the ornate hawk-eagle and the black-and-white hawk-eagle. Each year, three to five billion birds migrate through Calakmul and the Yucatán peninsula.

Additionally, scientists have estimated that a particular bat cave located near the reserve contains the largest bat population of any single cave in North America. It takes three hours for the bats — numbering between 10 to 20 million — to exit the cave in what can only be described as a spectacular display.

As a key water catchment area for the Yucatán peninsula, Calakmul is also regionally critical for the provision of freshwater resources and other environmental services which support the regional economy.

### A Growing Population

Although Calakmul is a federally protected area, communally-owned land collectives, known as ejidos, occupy 55% of the land. Approximately 23,700 people live in 72 small communities in and around the reserve.

Population has been steadily growing during the past decades, as new immigrants are coming to the area from all parts of Mexico in search of land and opportunities. The main economic activities in Calakmul are timber extraction, commercial and subsistence agriculture, ranching, honey production, hunting for self-sustenance, tourism and small-scale commerce.

### Threats Analysis

Residents are allowed to harvest products and farm in the buffer zones of Calakmul using methods that are compatible with the long-term conservation of the land. But, in reality, the reserve is under great pressure.

A recent threats analysis conducted by The Nature Conservancy and its partners revealed the principal impacts and threats on the reserve as: a) deforestation caused by a growing population that clears forests for agriculture and cattle ranching; b) habitat fragmentation caused by ranching, ag-

riculture and road construction; c) reduced populations of flora and fauna caused by slash and burn agriculture, hunting and illegal extraction; d) pollution primarily from intensive jalapeño chile cultivation; and e) reduced freshwater quality and quantity caused by population growth. Deforestation in the Maya Forest is occurring at the rate of 200,000 acres per year. Immediate action is necessary in order to save the natural and cultural treasures of Calakmul.

### What the Conservancy is Doing

Recently, the Mexican government asked the Conservancy and its partner, Pronatura Peninsula de Yucatán (PPY), to assist in the purchase of two tracts of land — approximately 600,000 acres in and around the Calakmul reserve. Protected within these two parcels would be the archeological site, the bat cave, nesting for the endangered king vulture and one of the last two viable ranges for jaguars worldwide. The Conservancy is currently in the middle of a campaign to raise the appropriate funds needed for the purchase of this land and to ensure its long term management.

The Conservancy and PPY will work with Mexican government agencies to carry out long-term management of Calakmul. The partners are pursuing a conservation strategy involving community participation in decision-making and land-use planning, which will ultimately lead to more sustainable use of Calakmul's natural resources.

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