

# Mexico's Vision for Sustainability

**M**exico! In terms of biodiversity it ranks fifth in the world. It is first in numbers of reptiles, cacti, and pines, and more than 1,000 bird species, 640 reptiles, 450 mammals, 330 amphibians and countless insects call it home. This biodiversity is determined by its location between North and South America—a transition area between tropical and temperate continents. Mexico also has one of the world's highest rates of deforestation—a loss of 1.2 million acres per year. As a consequence, 242 species are in danger of extinction, 435 are considered threatened, 244 are rare and 84 are subject to special protection.

Because of Mexico's diversity and because of the threats to it, the success of the Mexico REDD+ project (MREDD+) is crucial. REDD+, or Reducing Emissions from

Deforestation and Forest Degradation, is a United Nations program, which was first conceived as an initiative to mitigate carbon emissions. Several years ago Mexico signed on to a REDD strategy, but it is also interested in forest monitoring for the benefit of its biodiversity. The Woods Hole Research Center is leading efforts to develop this important component of MREDD+. The "plus" represents an effort to address issues beyond deforestation and degradation and include the role of conservation, sustainable management of forests, and forest carbon stocks.

For the past year, WHRC **Senior Scientist Josef Kellndorfer** and a team of WHRC researchers have been working with other groups on the MREDD+ project, a five-year, USAID-supported initiative aimed at improving Mexico's ability to monitor and

manage its forest, for both climate change mitigation and biodiversity objectives. The timing is critical as Mexico recently enacted climate legislation requiring significant national emissions reductions, an action that could serve as a model from which the U.S. and other countries can learn. Forest conservation will improve Mexico's opportunity to meet its own goals of reducing carbon emissions while also preserving its rich diversity of plants and animals.

The MREDD+ MRV (measurement, reporting and verification) team is comprised of Senior Scientist Josef Kellndorfer, Assistant Scientists Wayne Walker and Alessandro Baccini, Postdoctoral Fellow Oliver Cartus, and Research Associate Carol Franco. They recently traveled to the headquarters of the Comisión Nacional Forestal (CONAFOR) in Guadalajara, Mexico, for a meeting with government officials from CONAFOR, Norway Mexican Project, and Comisión Nacional de Biodiversidad (CONABIO) to discuss REDD+ activities and future endeavors.

The execution of MRV includes determining timeframes, necessary products (such as the comprehensive carbon stock map shown below of Mexico, created by the WHRC MREDD+ team), measurements, coordination of baseline reporting, financial mechanisms and government structures, plus many other details to make the grand vision become a reality. In a recent *Forestry Observer* interview, Dr. Kellndorfer commented on the progress of the project so far, emphasizing that Mexico is doing an outstanding job in the development of the MRV system. "They have huge challenges—like the great biodiversity of the country," he said, "but

it's exciting to see all these different needs coming to fruition as people coalesce in their expertise." The MRV project depends on integration of different research and development needs to build the system. Dr. Kellndorfer sees the greatest challenge in the integration of the National Forest and Soil Inventory with various components, such as the remote sensing data, so that they fit Mexico's biodiversity requirements and community safeguards. "Bringing all this together is the next task we face," he continued. "We have learned that we can improve some of the measurement protocols, and we are learning to understand the country as a unique entity."

The project is progressing well and WHRC will hold capacity building efforts on the improvements of field estimation of carbon biomass and carbon mapping. If MREDD+ is to be successful, it will need to evolve into a manageable and verifiable process that relies on the MRV system of accurate measurement—the hopeful outcome of orchestrating and documenting this large scale, public-private, multinational conservation program. This is a valuable opportunity to help Mexico conserve its forests, protect its biodiversity, and reduce its emissions of heat-trapping gases.



Above: Map of Mexico showing the distribution of carbon in the aboveground woody biomass of forests and woodlands. The estimates were produced through the integration of field inventory and satellite image data. Mapping was performed by the Woods Hole Research Center under the MREDD+ project funded by USAID.

Opposite page: Dr. Josef Kellndorfer explains cloud penetrating radar imaging technology to the REDD+ team and forest community managers during a field visit.