

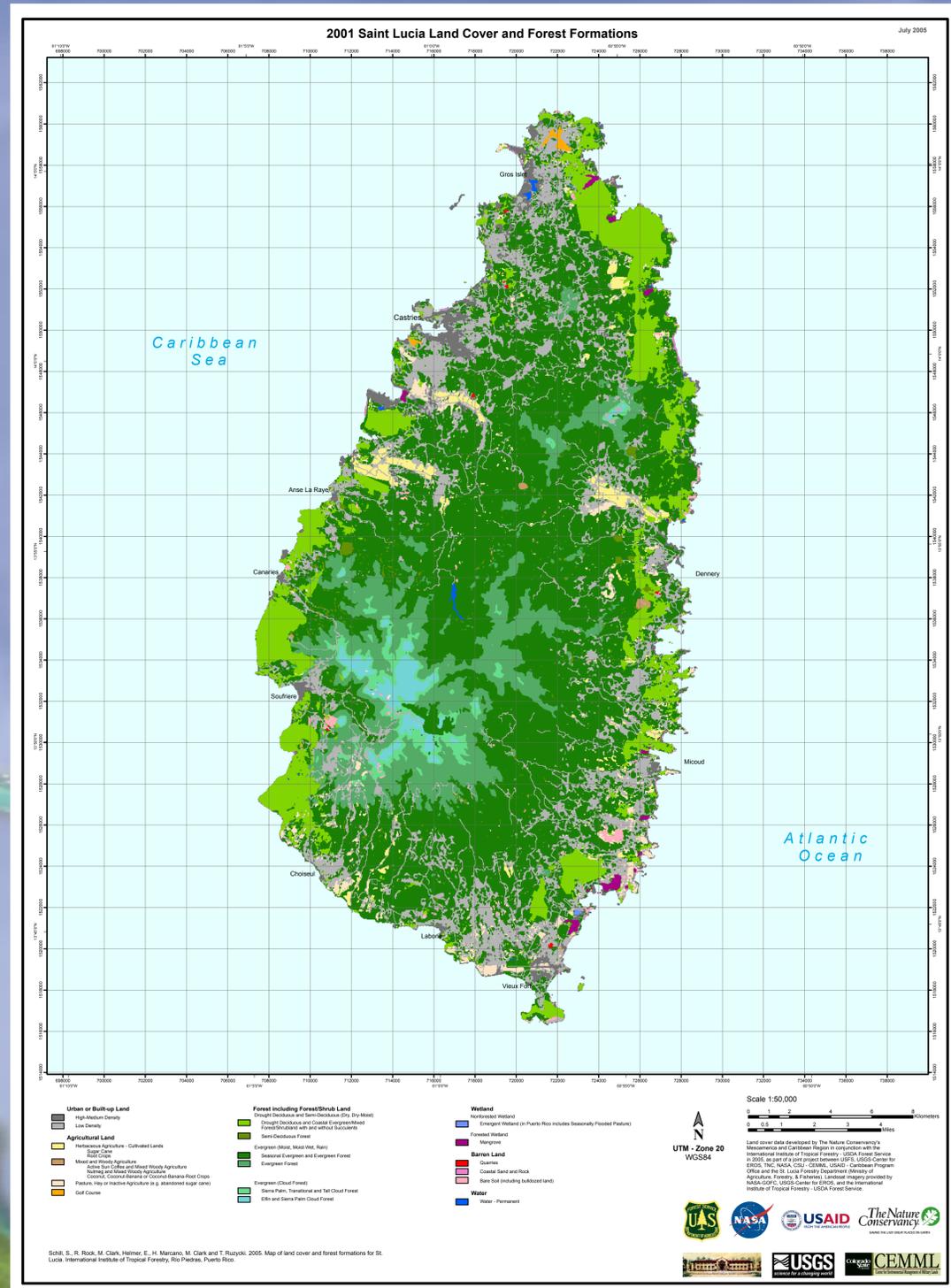
# Forest Formation and Land Cover Map Series: St. Lucia

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## ABSTRACT

We developed forest formation and land cover maps for several Caribbean islands from satellite imagery for a multi-organization project. For the map of St. Lucia, we used a combination of manual digitization of IKONOS 1-meter pan-sharpened imagery and classification of multi-temporal Landsat Enhanced Thematic Mapper Plus (ETM+) scenes using decision tree software. The IKONOS imagery was used to manually delineate features within cloud-covered areas of the ETM+ scenes as well as to digitize features within populated areas. In the decision tree classifications, we stacked ancillary raster data, including topographic variables (Farr and Kobrick, 2000), with spectral bands from multi-temporal Landsat scenes. We then assessed accuracy of the combined IKONOS/Landsat image classification using the country-wide 1-meter natural color IKONOS imagery. The forest classification scheme relates closely to that described by Areces-Malea (1999), with modifications similar to those in Helmer (2002).

A comparison of land cover areas in the maps with the areas reported by Beard (1949) reveals that land under cultivation on St. Lucia declined over the second half of the 20th century (Helmer and others, submitted). At the same time, areas of forest cover have increased as forests have been re-established on lands that were formerly grazed or cultivated. Developed lands have also increased on St. Lucia, mostly at lower elevations. Higher elevation forests are mostly well protected, particularly submontane evergreen and evergreen cloud forests. In comparison, drier forest formations are not as well protected on St. Lucia, where most land cover change to urban or residential land occurs.

## CONTRIBUTORS

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## DATA AVAILABILITY

These land cover data and cartographic products will be available in June 2007 for download at the following Web sites: USGS Center for Earth Resources Observation and Science - International Programs (<http://edcintl.cr.usgs.gov>) and USDA Forest Service International Institute of Tropical Forestry (<http://tropicalforestry.net/>).

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