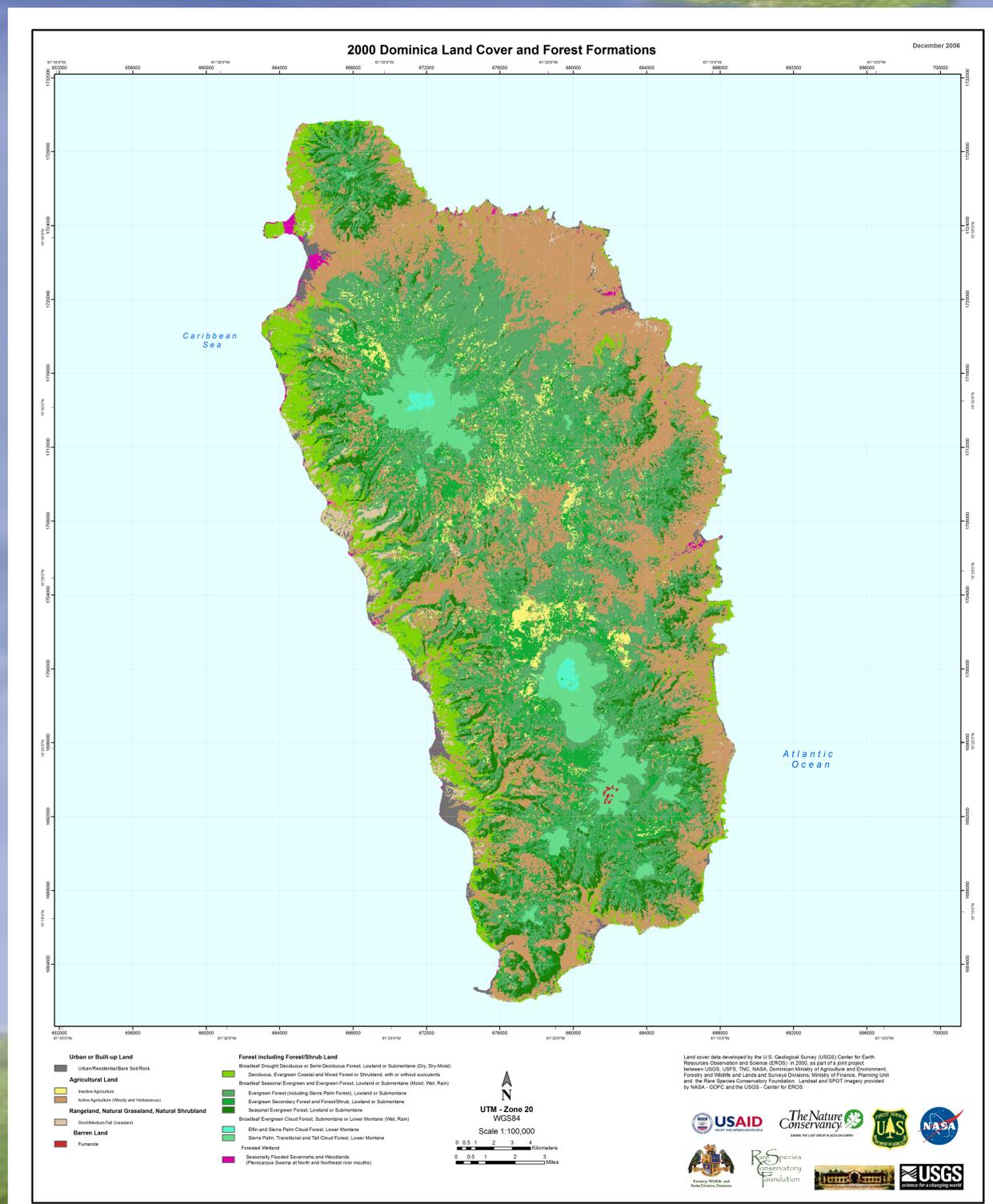


Forest Formation and Land Cover Map Series: Dominica

Coan, M.¹, Wood, E.¹, Reillo, P.², and Cushing, W.¹

¹SAIC, contractor to the U.S. Geological Survey (USGS) Center for Earth Resources Observation and Science*, ²Rare Species Conservatory Foundation, Loxahatchee, FL, USA



ABSTRACT

Forest formation and land cover maps for several Caribbean islands were developed from satellite imagery as part of a multi-organization project. For Dominica, Landsat and SPOT images acquired between 1996 and 1999 were the source data for this forest and land cover map. A preliminary unsupervised classification was generated to identify areas of distinct spectral characteristics to guide field inspections and the collection of training data. Interviews during the classification process with Forestry, Wildlife, and Parks field personnel and with staff at the Rare Species Conservatory Foundation improved our understanding of Dominica's land cover. An iterative decision-tree classification model was performed with all imagery, along with ancillary information derived from Lands and Survey Division maps, including elevation, slope, and aspect. This classification of land cover of Dominica served as one prototype of a methodology which evolved into that used for the National Land Cover Database of the United States (Homer and others, 2004). The original classification schema was comparable to one used in the 1987 forest inventory map generated by the Forestry and Wildlife Division of Dominica (de Milde, 1987) which corresponded to that of Beard (1949). The schema was then cross-walked to match the classes on other islands which relate closely to that of Areces-Malea and others (1999) with modifications similar to those in Helmer and others (2002).

Forests originally covered almost the entire island and as late as 1945 around 80 per cent of Dominica was forested; much of it was secondary although there were large expanses of primary forest (Beard, 1949; Hodge, 1954). Dominica has experienced significantly less land use change and landscape modification for agriculture or development over the past half century than many other Caribbean nations. Despite a dramatic surge in agricultural land utilization for banana cultivation from the late 1960's through the late 1980's, overall agricultural land use increased only about 10 percent since 1949. This increase primarily reflects a shift in agricultural markets, rather than a significant change in agricultural practice or widespread forest conversion. The approximately 15 percent reduction in humid forest cover can be attributed largely to the extension of agriculture combined with some recent encroachments for settlements. Dominica's National Parks and Protected Areas legislation, combined with its colonial Forest Reserve system has enabled vast interior areas comprising primary, montane, sub-montane, cloud, and dry forests to remain virtually undisturbed, while a significant fraction of fallow agricultural holdings have succeeded into secondary forest cover over the past 20 years.

CONTRIBUTORS

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DATA AVAILABILITY

These land cover data and cartographic products will be available 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 U.S. Department of Agriculture Forest Service International Institute of Tropical Forestry (<http://tropicalforestry.net/>).

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