SERVIR
The Regional Visualization and Monitoring System

Daniel Irwin
NASA/Marshall Space Flight Center
Enabling the use of earth observations and models for timely decision making to benefit society

- Data and Models
- Online Maps
- Visualizations
- Decision Support
- Training
- Partnerships

Flood Forecasting in Africa

Training and Capacity Building

Mapping Fires in Guatemala Mexico
NASA - Pioneering Observations of the Earth
Science and Technology – renewed focus on integrating science, technology, and innovation in the practice of development to solve today’s most pressing development challenges around the globe.
SERVIR-Mesoamerica at CATHALAC
City of Knowledge, Panama

Dedicated on February 3, 2005
Dedicated on October 5, 2010
SERVIR Focus Areas

- Building EO & Geospatial Capacity
- Daily Environmental Information
- Extreme Events
- Land Cover Change
EO & Geospatial Capacity
MyCOE-SERVIR Initiative

- Building capacity to protect biodiversity using GIS, RS, and geospatial analytical techniques.
- Strengthening collaboration amongst universities, government environmental authorities, and NGOs.
- Students & mentors competitively selected; both receive modest stipends to conduct 6-month long projects and travel support.
Daily Environmental Information
SERVIR Air Quality Modeling

Yesterday

Today

Tomorrow
Fire forecasting uses MODIS Rapid Response System, a collaborative effort between GSFC and University of Maryland.
Daily Broadcast: Panama

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Pronóstico del Tiempo
Extreme Events
Earthquake in Haiti

Dégâts causés par le tremblement de terre - Port-au-Prince, Haiti

Prepared by CATHALAC, 15 January 2010

Note: These possible landslide cases have been obtained through visual interpretation of High EO-1 image scenes, but have not been verified in the field.
Extreme Events
Rainfall Forecasts for Mesoamerica

Pronóstico de precipitacion de 7 días en Mesoamérica y el Caribe para el periodo del 24 de septiembre al 30 de septiembre de 2010

Generado por CATHALAC
24 Septiembre 2010, 1200 (UTC -5)

ZONAS HORARIAS
EDT "Eastern Daylight Time" (UTC -4)
PDT "Pacific Daylight Time" (UTC -7)

www.servir.net

Fuentes de informacion: NOAA (GFS, NHC); ESRI, NASA
Harmful Algal Blooms

Real time monitoring of Harmful Algal Blooms (HAB) using remotely sensed data products
Lake Water Quality
Cyanobacteria Growth

Lago de Atitlán, Departamento de Sololá, Guatemala
Área Afectada por Cyanobacteria

Sistema Hídrico de la Cuenca Endorreica del Lago de Atitlán

Visualización en SERVIR-VIZ

www.servir.net

Crédito de las imágenes: SERVIR/CATHALAC/NASA/USAID/GEO
Mapping Flood Potential in Africa

- Using a regional version of the hydrologic model with near-real time precipitation from the 3B42 TRMM rainfall to derive flood potential over a much larger area
- Provides an estimate of expected depth of flood inundation at a 0.25 degree resolution
- Precipitation forecast data can be used with the model to provide longer lead time forecasts

TRMM 3B42 Precipitation

Flood Potential
Spatially distributed hydrologic model CREST is developed by University of Oklahoma
Based on Variable Infiltration Capacity (VIC)
Spatial resolution ~1km
Uses near real-time 3B42 TRMM rainfall estimates to produce soil moisture, evapotranspiration and streamflow

Nzoia River in the Lake Victoria Basin

Modeled Evapotranspiration
Rift Valley Fever in Africa

Rift Valley Fever Risk Mapping using AVHRR data and flooding potential maps
Flooding in Pakistan
Land Cover Change
Landcover Change

Peten, Guatemala
(1986-1995)
Areas of High Carbon Stocks & Deforestation

FORREST COVER AND DEFORESTATION IN BELIZE: 1980-2010

Summary: Measuring the extent of forest cover in some countries is essential for understanding the extent of forest cover, deforestation, and changes in land use. In the case of Belize, the country's forest cover is estimated to be 60.2% in 2010. The study found that the country's forest cover has decreased by 15.7% since 1980. The decrease in forest cover is attributed to human activities, such as agriculture and deforestation. The results of this study can help policymakers and stakeholders better understand the extent of forest cover in Belize and develop strategies to protect and conserve the country's forests. The forest cover in Belize is estimated to be 12% of the country's land area, and it is important to protect this vital resource to ensure the country's sustainable development.

KEYWORDS: Belize, forest cover, deforestation, land use, remote sensing, CATHALAC, SERVIR, TREKLABS

The MECONERICA Project (Monitoring of Environmental Changes in the Caribbean Region) is a joint initiative between CATHALAC, NASA, and the UN Environment Programme (UNEP). The project provides a platform for monitoring and assessing the environmental changes in the Caribbean region, including changes in land use, deforestation, and forest cover. The project uses satellite imagery and remote sensing to monitor changes in the region's environmental conditions. The project's results can help policymakers and stakeholders better understand the extent of forest cover in the region and develop strategies to protect and conserve the region's forests.

1. BACKGROUND

Various documents, ranging from the 1984 Belize Country Environmental Profile to the more recent 2010 United Nations Environment Programme (UNEP)-funded GEF Belize national...
“We have not inherited the earth from our fathers, we are borrowing it from our children.”