

GEO GLOWS

GEO - Global Water Sustainability

Earth Observation for Ecosystem
Accounting Workshop
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Copenhagen

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GEO Global Water Sustainability (GEOGLoWS)

OBJECTIVES

- 1) Strengthen capacity to understand water data needs and develop user-driven applications products from EO data and applications
- 2) Engage end users and boundary organizations to understand needs and decision making process by region, and to prioritize activities based on vulnerability analyses
- 3) Coordinate and leverage GEOGLOWS partners to more effectively provide information and expertise to stakeholder and end-user communities
- 4) Strengthen capacity to use science and water EO effectively across spatial and temporal scales
- 5) Contribute to the assessments of population and economic growth impacts on water resources availability and climate change, to inform planning and adaptation activities

AmeriGEOSS

Initiative & Regional Coordination

Is a cooperative effort of the 16 GEO member countries in the Americas that:

- Reflects local, national, and regional interests of the GEO country-members for short and long-term planning, development, and implementation aligned with GEO activities.
- Is entrenched in the institutional and technical capabilities of its country members and in the resources of other global initiatives available for the benefit of the region.
- Seeks to increase institutional and personal capacity and engage experts, stakeholders, and decision makers in the process of decision making.

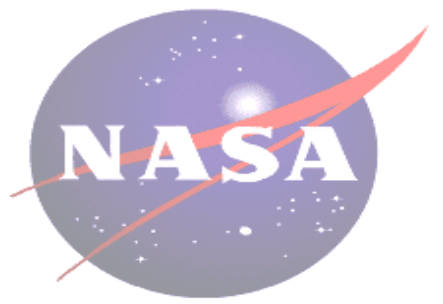


– Argentina	– Ecuador
– Bahamas	– Honduras
– Belize	– Mexico
– Brazil	– Panama
– Canada	– Paraguay
– Chile	– Peru
– Colombia	– United States
– Costa Rica	– Uruguay



GEOGLOWS Framework includes activities focusing on:

1. Enhancing Global Water Sustainability;
2. Minimizing Basin and Regional Risk;
3. Essential Water Variable (EWV) Understanding (water quality and use; water cycle Variables);
4. Earth Observations, Integrated Data Products and Applications, and Tool Development;
5. Data Sharing, Dissemination of Data, Information, Products, and Knowledge.
6. User Engagement, Capacity Building.



Surface Water Mission Concept (SWOT) Stream Discharge and Surface Water Height

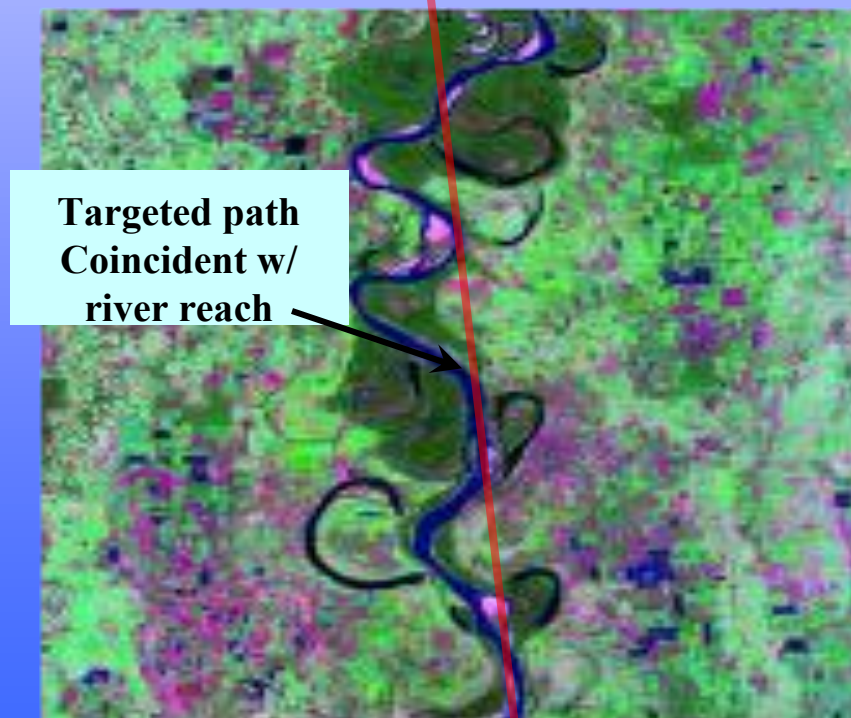


Motivation:

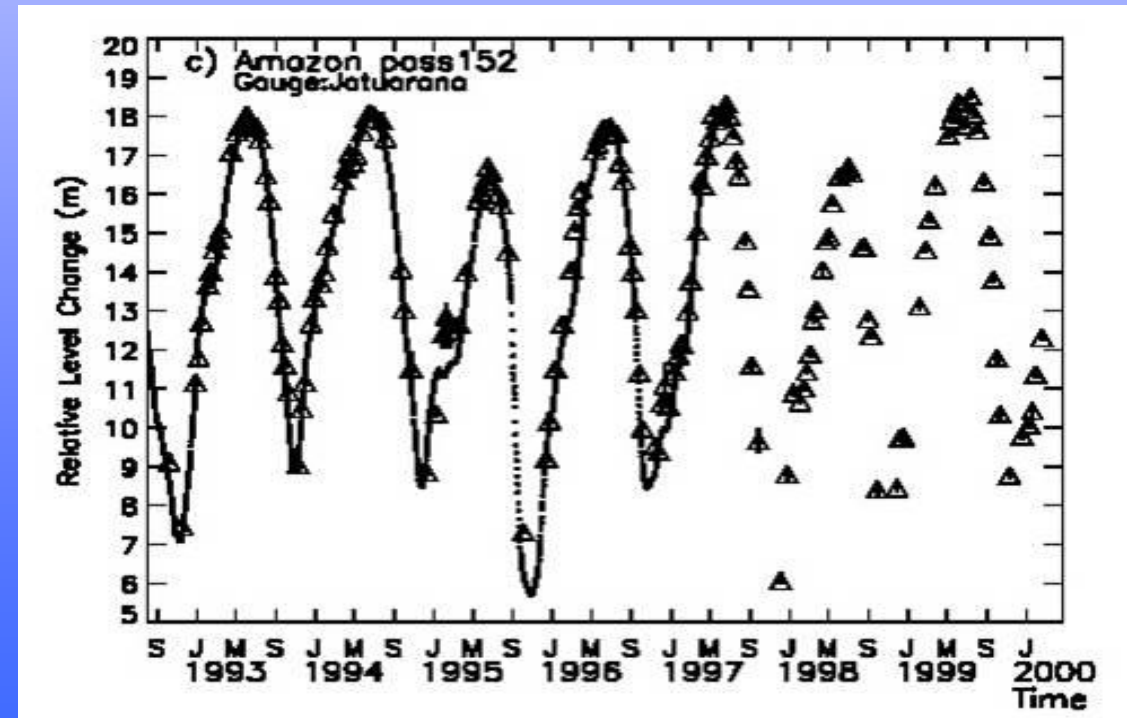
- critical water cycle component
- essential for water resource planning
- stream discharge and water height data are difficult to obtain outside US
- find the missing continental discharge component

Mission Concepts:

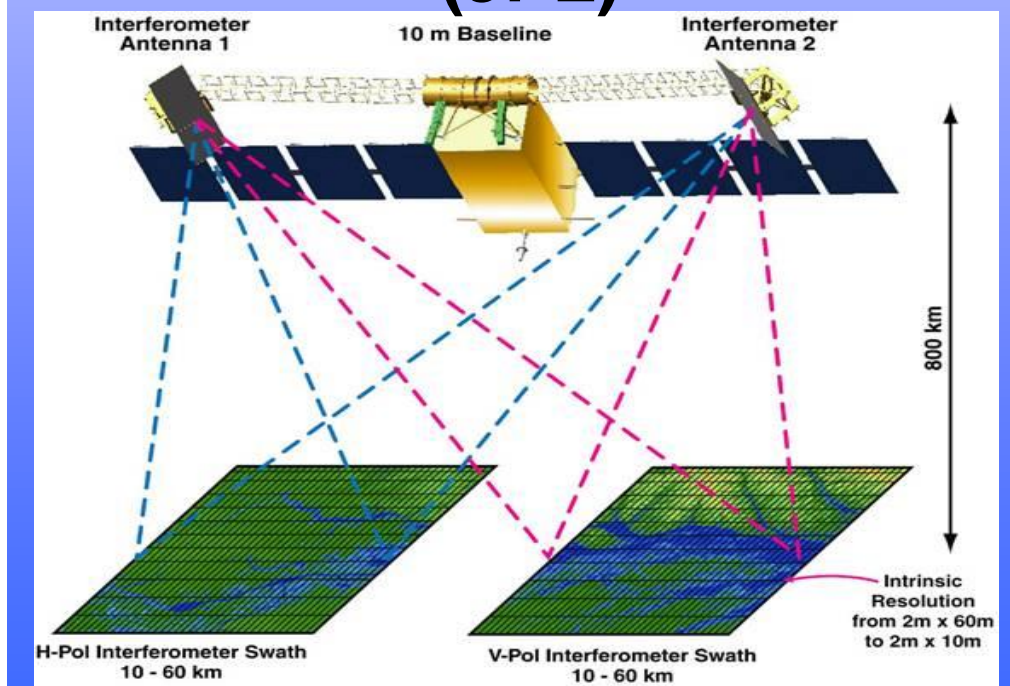
Laser Altimetry Concept e.g. ICESat (GSFC)



Radar Altimetry Concept e.g. Topex/Poseidon over Amazon R.



Interferometer Concept (JPL)



Partnerships for Institutional Capacity: GEONETCast



GEONETCast Américas Costa Rica



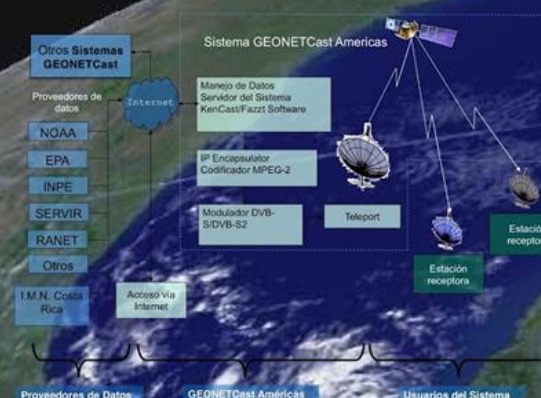
Transmisión

Los datos se transmiten a través del satélite geoestacionario Intelsat-9 (IS-9), que cubre la mayor parte de las Américas con un transponder DVB-S de banda C

Area de cobertura



Estructura del Sistema GEONETCast Américas

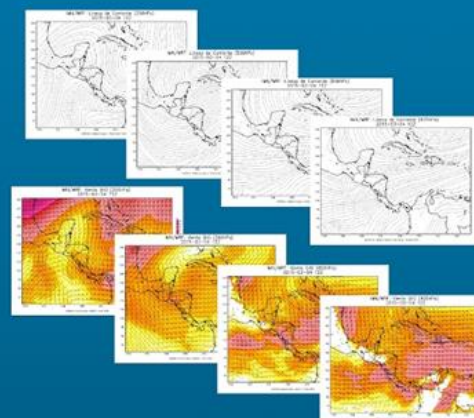


Ubicación de estaciones emisoras / receptoras



Lista de productos transmitidos por Costa Rica

Modelo de investigación predicción del tiempo / WRF

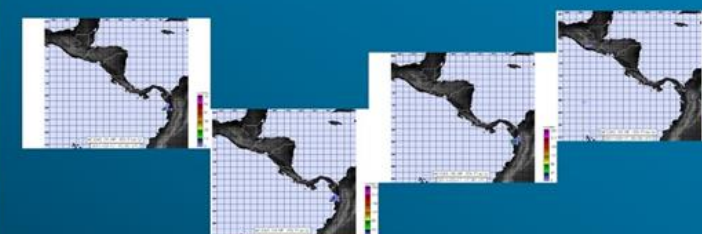


El WRF, es un modelo de pronóstico del tiempo y de investigación de nueva generación a mesoescala, y un sistema de predicción numérica del tiempo diseñado para servir tanto a la previsión operativa y las necesidades de la investigación atmosférica. Cuenta con múltiples núcleos dinámicos, uno de 3 dimensiones variacional (3DVAR), que es un sistema de asimilación de datos y cuenta con una arquitectura de software que permite el paralelismo computacional y la extensibilidad del sistema. WRF es adecuado para un amplio espectro de aplicaciones a través de escalas que van desde metros hasta miles de kilómetros. El modelo WRF concede a los investigadores la capacidad de realizar simulaciones que reflejan bien los datos reales o configuraciones idealizadas. El WRF ofrece la simulación de predicción de un modelo que es flexible y eficiente desde el punto de vista computacional, al tiempo que ofrece mayores avances en la física, métodos numéricos, y la asimilación de los datos aportados por la comunidad científica.

Radiosondeo

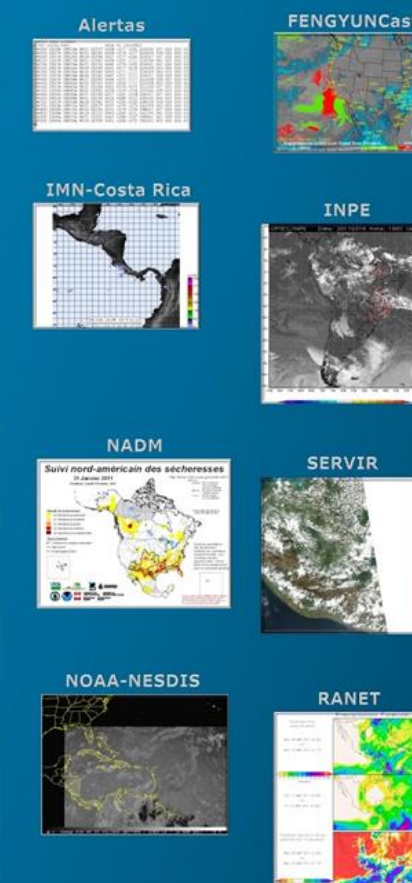


Guía de inundación instantánea areal para Centroamérica / CAFFG

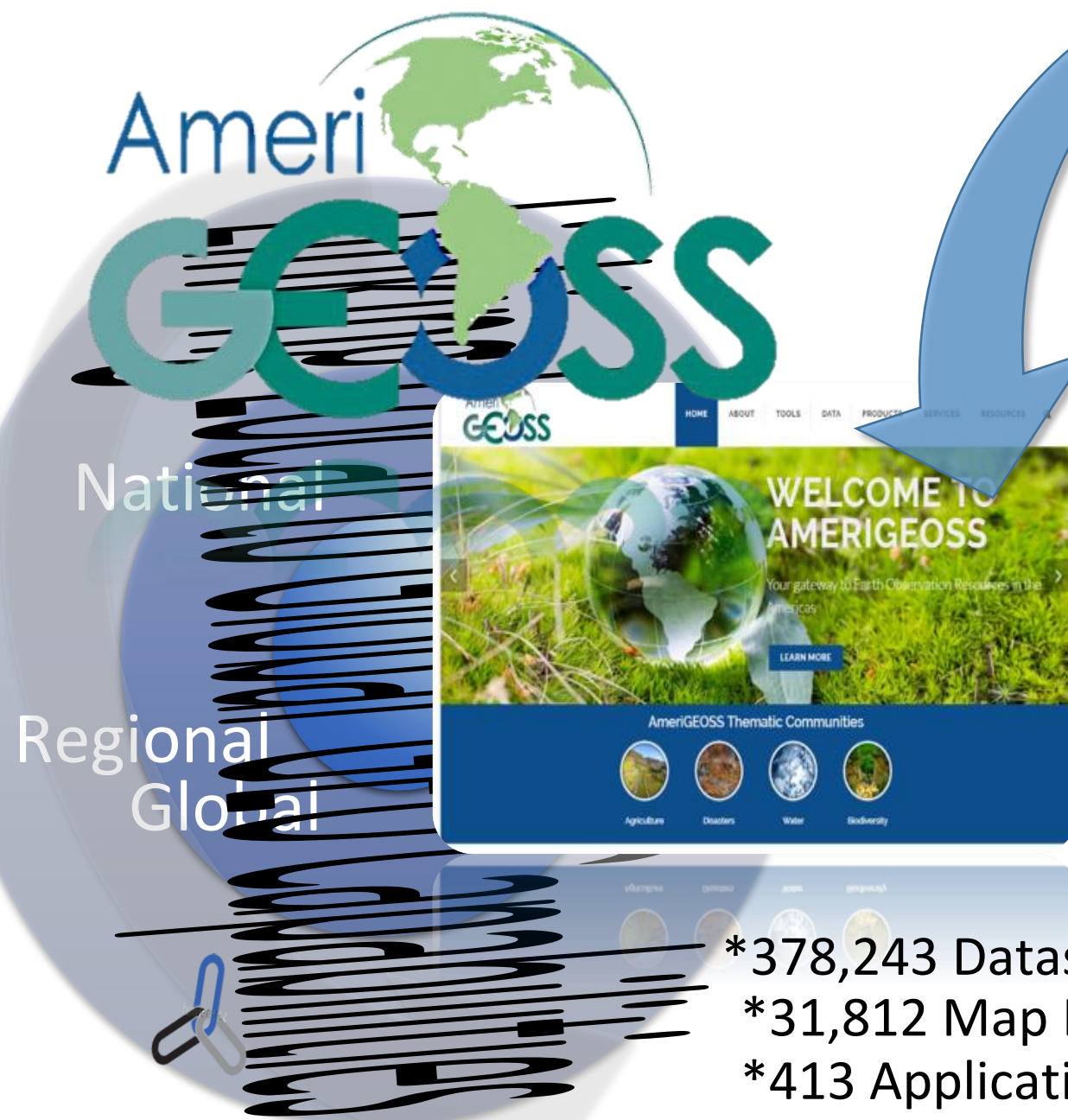
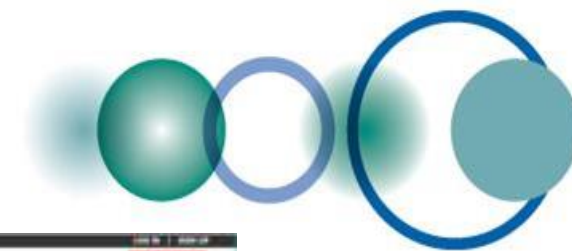


El Sistema CAFFG, es un estimador de cantidades de lluvias capaces de producir desbordamientos, con base en las cantidades de lluvia caída y estimada con base en las imágenes satelitales desarrollado para Centroamérica con datos de salida del modelo a escala de cuencas centroamericanas.

Lista de algunos productos actuales recibidos por GEONETCast



AmeriGEOSS Linking Capabilities



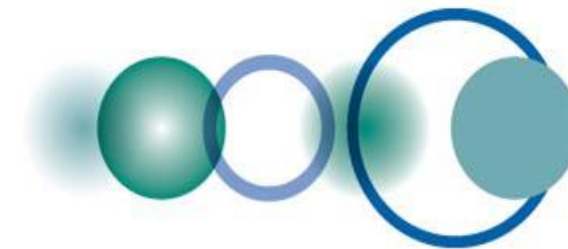
Open Data
Portals



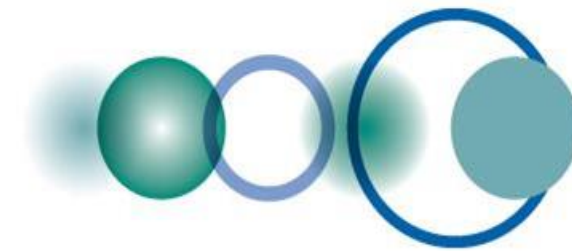
- *378,243 Datasets
- *31,812 Map Layers
- *413 Applications & Tools

Share data, tools, applications, services

*Current assessment of available



The screenshot displays the AmeriGEOSS Data-Hub interface. At the top, there's a navigation bar with links: About AmeriGEOSS, Initiatives, Data, Tools, Products, Services, Resources. The main header includes the AmeriGEOSS logo and a search bar. Below the header, there's a sidebar with filters for location (North America, South America) and organizations (GeoSUR, IOOS, Mexico, etc.). The main content area shows search results for '35,588 datasets found'. A search bar at the top right is labeled 'Search' and has a dropdown menu with options: Text¹, Faceted², and Spatial Search³. A central overlay box says 'Find - Resources in many Formats⁴'. At the bottom, there's a section for 'Use - Multi-platform support⁵' showing various data formats (JSON, CSV, wsd, HTML) and a map of South America. The interface also includes a 'Filter by location' section with a map of the Americas and a 'Search datasets...' input field. The results list includes items like 'Postos e delegacias do Departamento de Polícia Rodoviária Federal' and 'Índice de Preço ao Consumidor de Maceió 2003 - IPC'. A sidebar on the left lists organizations and groups, with a 'Show More Organizations' link. The bottom right shows a preview of a dataset titled 'USGS FEWS NET Data Portal'.



Data Catalog

Search

Tools and
Products

Data Explorer

Datasets

Collections

Map Viewer

Dashboard



The AmeriGEOSS Community Platform prototype provides a suite of *resources and tools* for integrating, synthesizing, analyzing, problem-solving and visualizing geographically enriched data to *accelerate understanding* and *decision-making*.



GEOGLOWS Take Away Message:

1. Support and provide key information to decision-makers related to water use, availability, and quality.
2. To achieve this vision we need social, economic, and environmental
3. The GEOGLOWS network will:
 - a. Strengthen partnerships
 - b. Mobilize resources (Better integration of satellite and in-situ water data)
 - c. Build a sustainable capacity to provide water products and services

Thank you!

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