

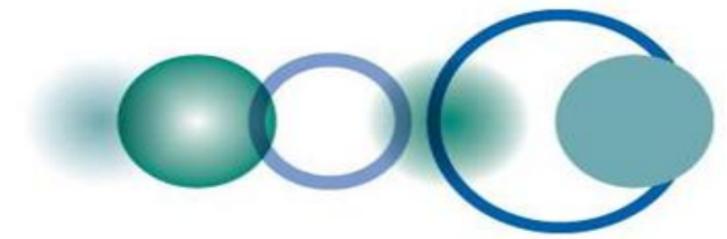
# **GEO GLOWS**

## **GEO - Global Water Sustainability**

Earth Observation for Ecosystem  
Accounting Workshop  
March 27-29, 2017  
Copenhagen

**Dr. Monica Grasso**  
**NOAA Chief Economist**





# **GEO Global Water Sustainability (GEOGLoWS)**

## **OBJECTIVES**

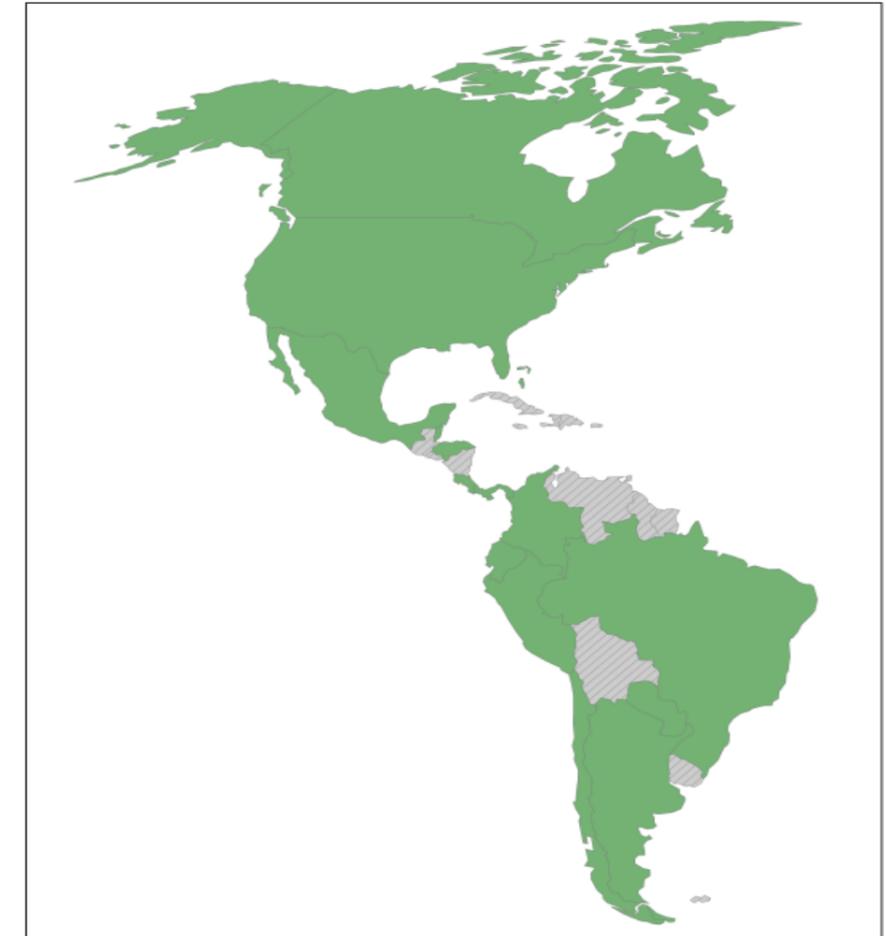
- 1) Strengthen capacity to understand water data needs and develop user-driven applications products from EO data and applications
- 2) Engage end users and boundary organizations to understand needs and decision making process by region, and to prioritize activities based on vulnerability analyses
- 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

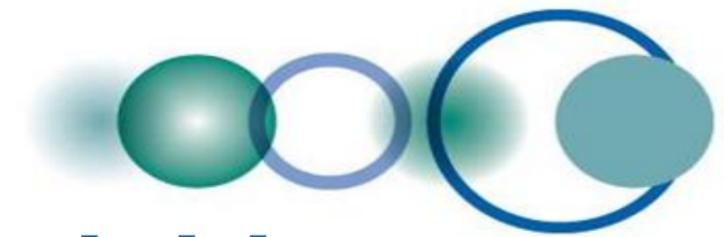
## Initiative & Regional Coordination

*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.

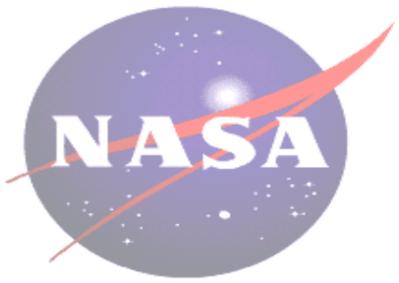


- Argentina
- Bahamas
- Belize
- Brazil
- Canada
- Chile
- Colombia
- Costa Rica
- Ecuador
- Honduras
- Mexico
- Panama
- Paraguay
- Peru
- United States
- Uruguay



# **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:

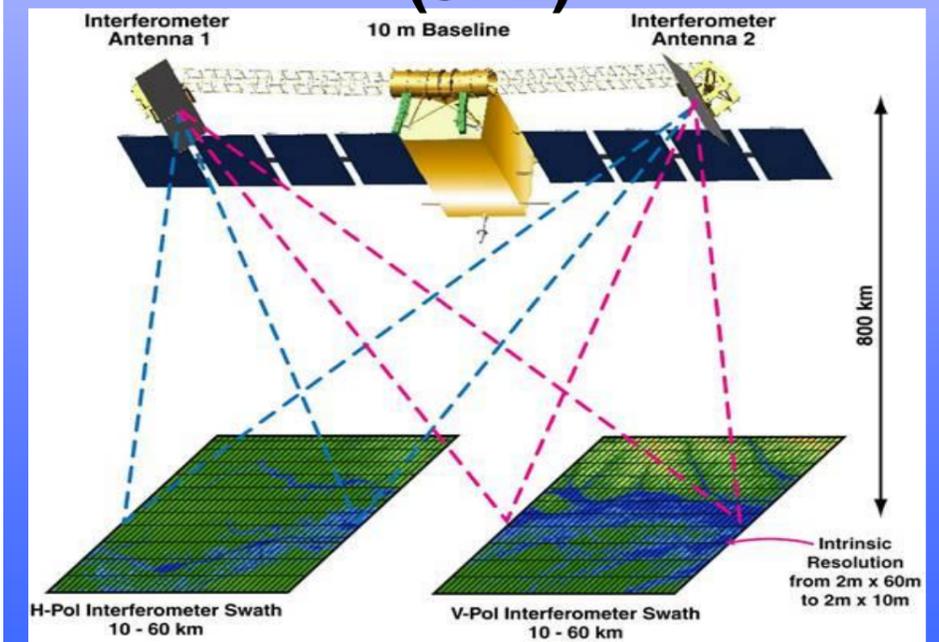
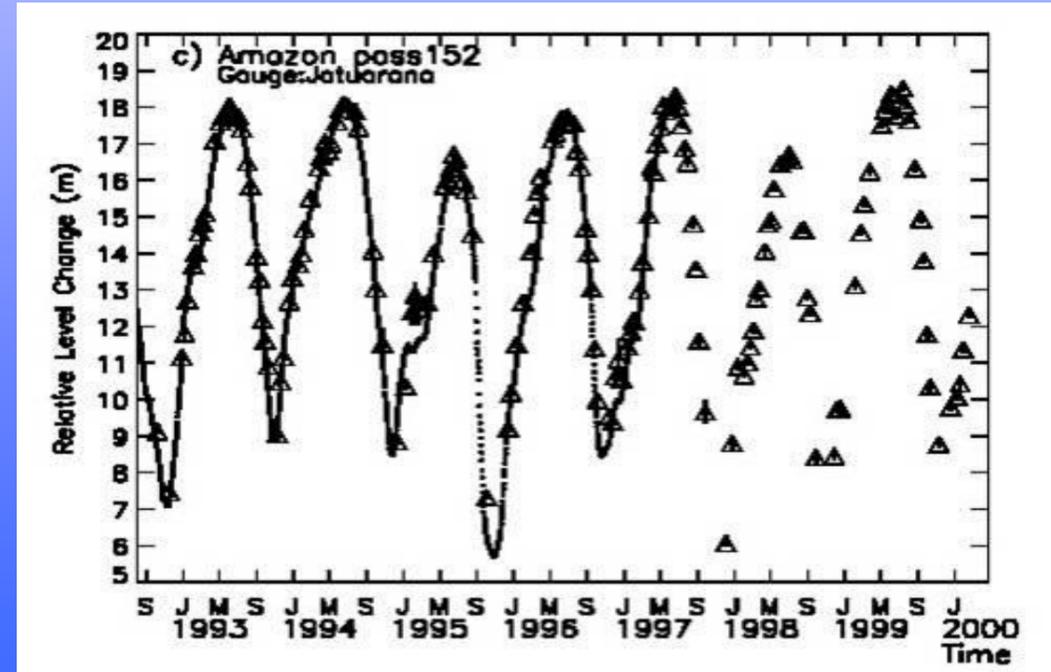
- critical water cycle component
- essential for water resource planning
- stream discharge and water height data are difficult to obtain outside US
- find the missing continental discharge component

## 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



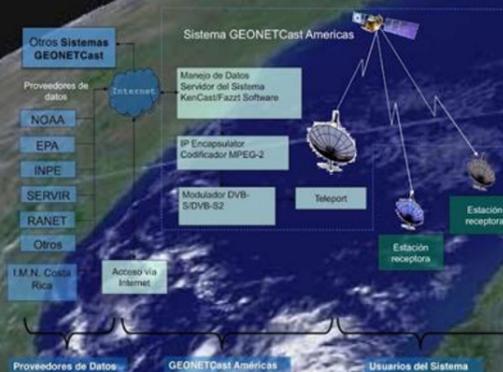
### Transmisión

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

Estación: Experimental Fabio Baudrit  
 Latitud: 10° 00' / Longitud: 84° 15'  
 Altitud: 840 msnm  
 Provincia de Alajuela

Estación: Aeropuerto Internacional Daniel Oduber Quirós  
 Latitud: 10° 36' / Longitud: 85° 32'  
 Altitud: 85 msnm  
 Provincia de Guanacaste

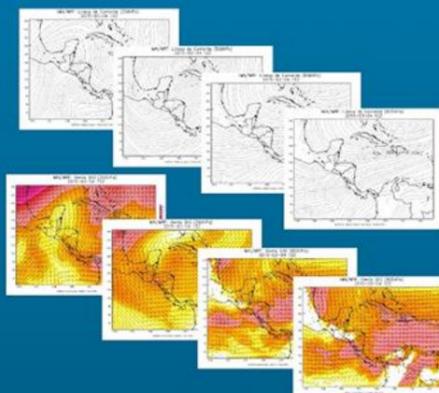
Estación: Aeropuerto Internacional Juan Santamaría  
 Latitud: 10° 00' / Longitud: 84° 12'  
 Altitud: 932 msnm  
 Provincia de Alajuela

Estación: Limón  
 Latitud: 10° 00' / Longitud: 83° 04'  
 Altitud: 5 msnm  
 Provincia de Limón, Caribe Norte

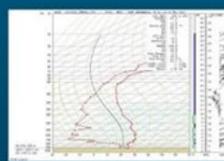
Estación: San José  
 Latitud: 09° 56' / Longitud: 84° 05'  
 Altitud: 1172 msnm  
 Provincia de San José

### Lista de productos transmitidos por Costa Rica

#### Modelo de investigación predicción del tiempo / WRF

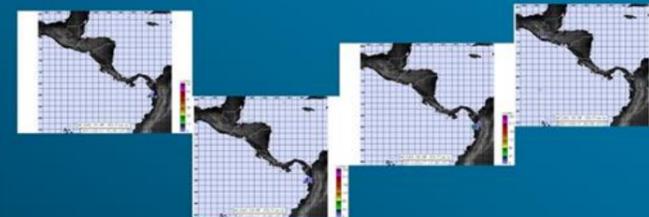


El WRF, es un modelo de pronóstico del tiempo y de investigación de nueva generación a mesoescala, y un sistema de predicción numérica del tiempo diseñado para servir tanto a la previsión operativa y las necesidades de la investigación atmosférica. Cuenta con múltiples núcleos dinámicos, uno de 3 dimensiones 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

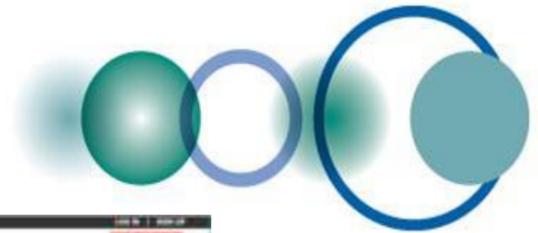


El Sistema CAFFG, es un estimador de cantidades de lluvias capaces de producir desbordamientos, con base en las cantidades de lluvia caída y estimada con base en las imágenes satelitales desarrollado para Centroamérica con datos de salida del modelo a escala de cuencas centroamericanas.

### Lista de algunos productos actuales recibidos por GEONETCast

- Alertas
- FENGYUNCast
- IMN-Costa Rica
- INPE
- NADM
- SERVIR
- NOAA-NESDIS
- RANET

# AmeriGEOSS Linking Capabilities



# AmeriGEOSS

National

Regional  
Global



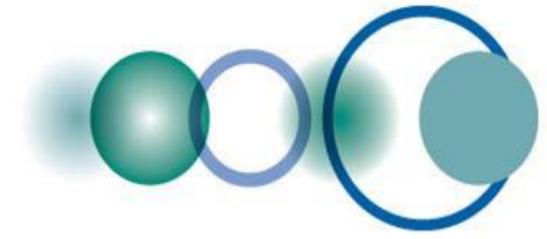
- \*378,243 Datasets
- \*31,812 Map Layers
- \*413 Applications & Tools

Open Data



## Share data, tools, applications, services

\*Current assessment of available



**Search**  
- Text<sup>1</sup>, Faceted<sup>2</sup> and Spatial Search<sup>3</sup>

**Find**  
- Resources in many Formats<sup>4</sup>

**Use**  
- Multi-platform support<sup>5</sup>

1 Search datasets...  
2 Organizations list  
3 Filter by location map  
4 Format filters (JSON, CSV, wsd, HTML)  
5 Multi-device view

35,588 datasets found

25,552 datasets found

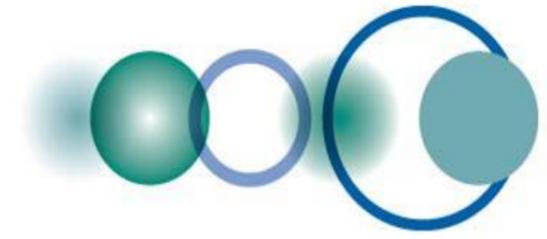
Postos e delegacias do Departamento de Polícia Rodoviária Federal

Agências, Gerências e Superintendências de atendimento do Ministério do Traba...

Índice de Preço ao Consumidor de Maceió 2003 - IPC

Outorgas de Serviços de Radiodifusão - Plano Básico e estações de RADIOF...

Produção total de automóveis



Data Catalog

Search

Tools and  
Products

Data Explorer

Datasets

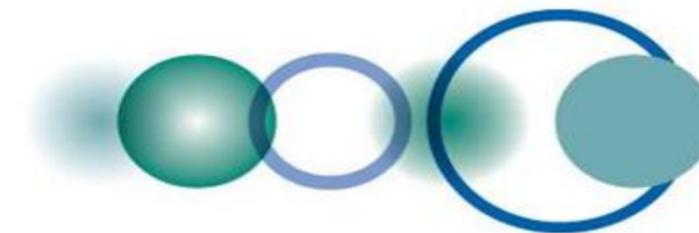
Collections

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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