



INTRODUCTION TO EARTH OBSERVATIONS FOR WATER MONITORING

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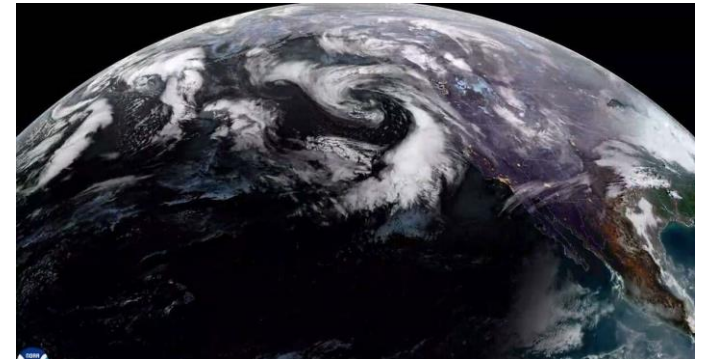
UN Water Conference

Side Event

What can you see in Earth Observations?

Earth observations are data and information collected about our planet, whether atmospheric, oceanic or terrestrial.

This includes space-based or remotely-sensed data, as well as ground-based or *in situ* data.



Satellite Remote Sensing



Satellite Remote Sensing

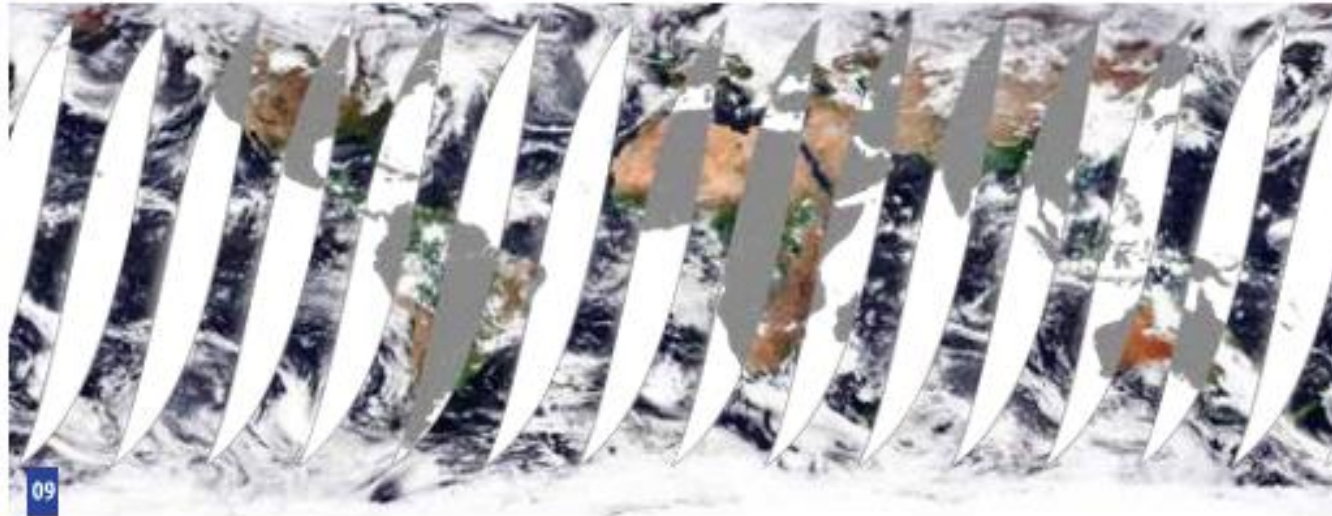
08

October 22, 2016 true colour image of the Earth from the Visible Infrared Imaging Radiometer Suite (VIIRS) onboard the Suomi National Polar-Orbiting Partnership. Data supplied from VIIRS is generated at a 750 m resolution.

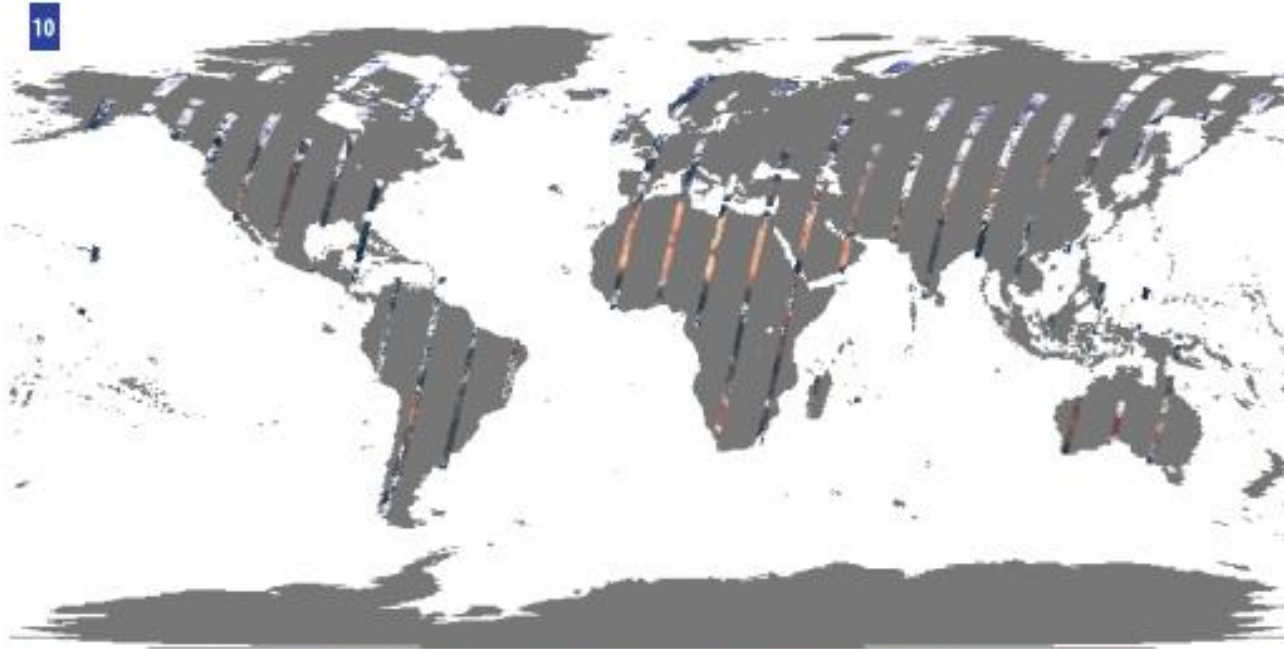


09

October 22, 2016 true colour image of the Earth from the OLCI instrument onboard ESA's Sentinel-3 satellite. Data supplied from Sentinel-3 OLCI is generated at a 300 m resolution.



Satellite Remote Sensing



October 22, 2016 true color image of the Earth from the Landsat 7 and 8 satellites. Spectral data supplied from Land 7 and 8 is generated at a 30 m resolution.

10



Red/green/blue images of Lake Victoria's Winam Gulf at 750 m resolution (S-NPP VIIRS – January 12, 2017).

11

300 m resolution, Sentinel-3 OLCI – January 11, 2017).

12

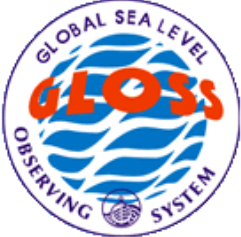










10–60 m resolution (Sentinel-2 MSI – January 12, 2017).

13

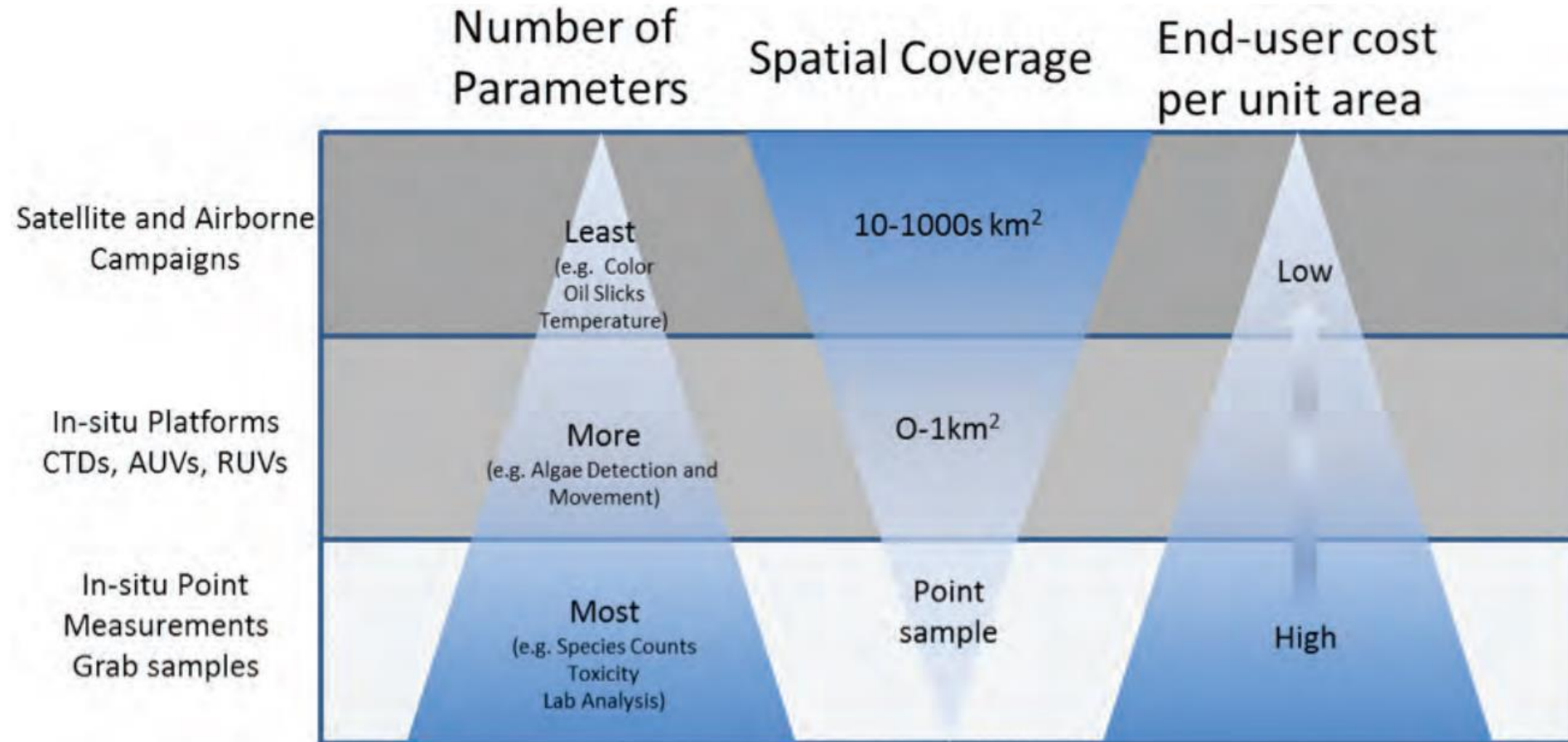
In situ Earth observations

Profiling floats	Data Buoys	Time Series	Repeated Hydrography
			
			
			

In situ Earth observations

Sea Level	Ship Based	HF Rader	Other Networks
		 <p>Global HF Radar Network</p>	<p>Animal Borne Sensors & Ocean Gliders</p>
			
			

Comparison of Monitoring Approaches



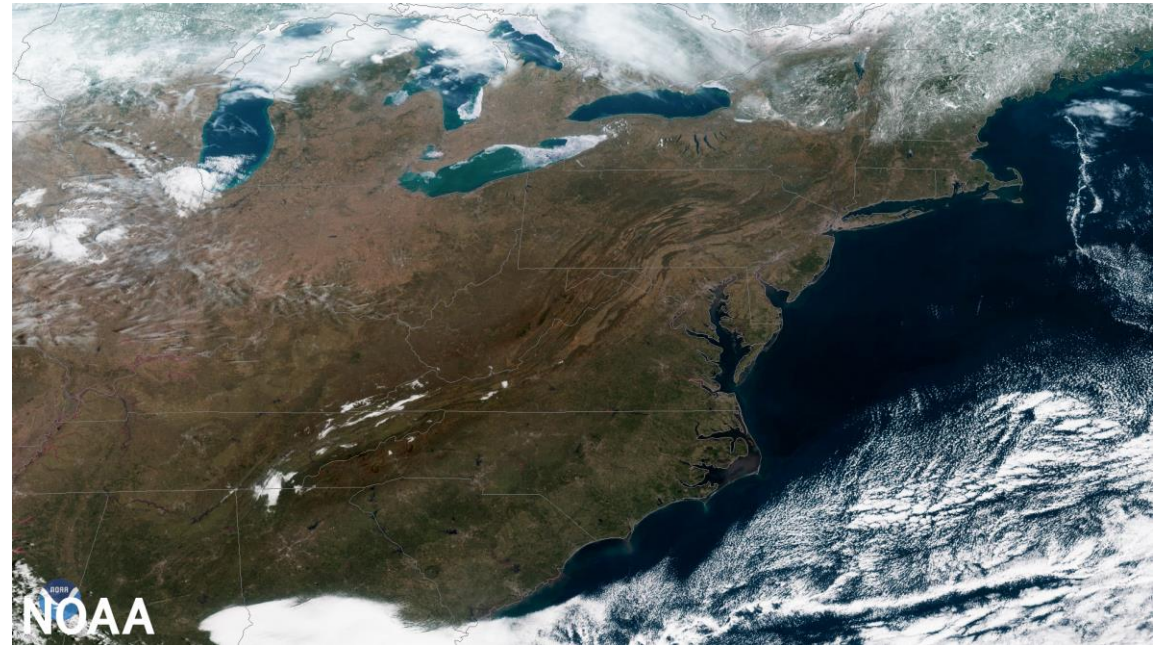
Water and Earth Observations

- **Precipitation**
- **Evapotranspiration**
- **Soil Moisture**
- **Groundwater**
- **Level and Extent of Surface Water**
- **Snow Cover**
- **Temperature**
- **Water Quality**

What you will see today

Examples of monitoring tools for water monitoring

- Flood forecasting
- Water-related pathogens
- Water quality
- Freshwater ecosystems





**THANK
YOU!**

