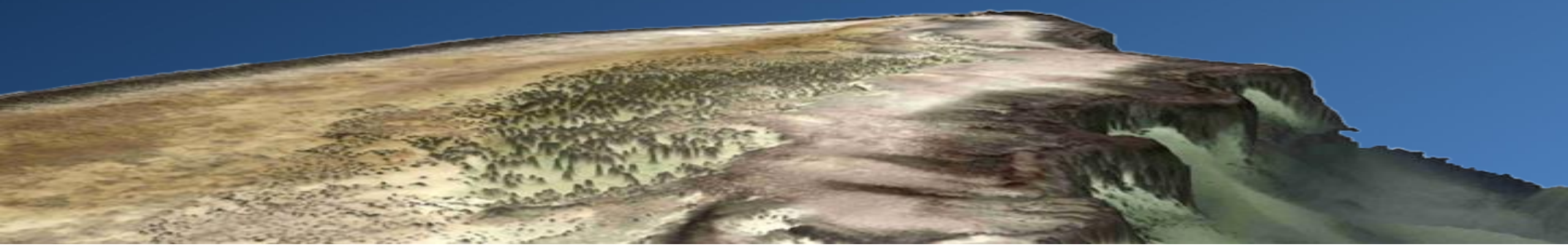
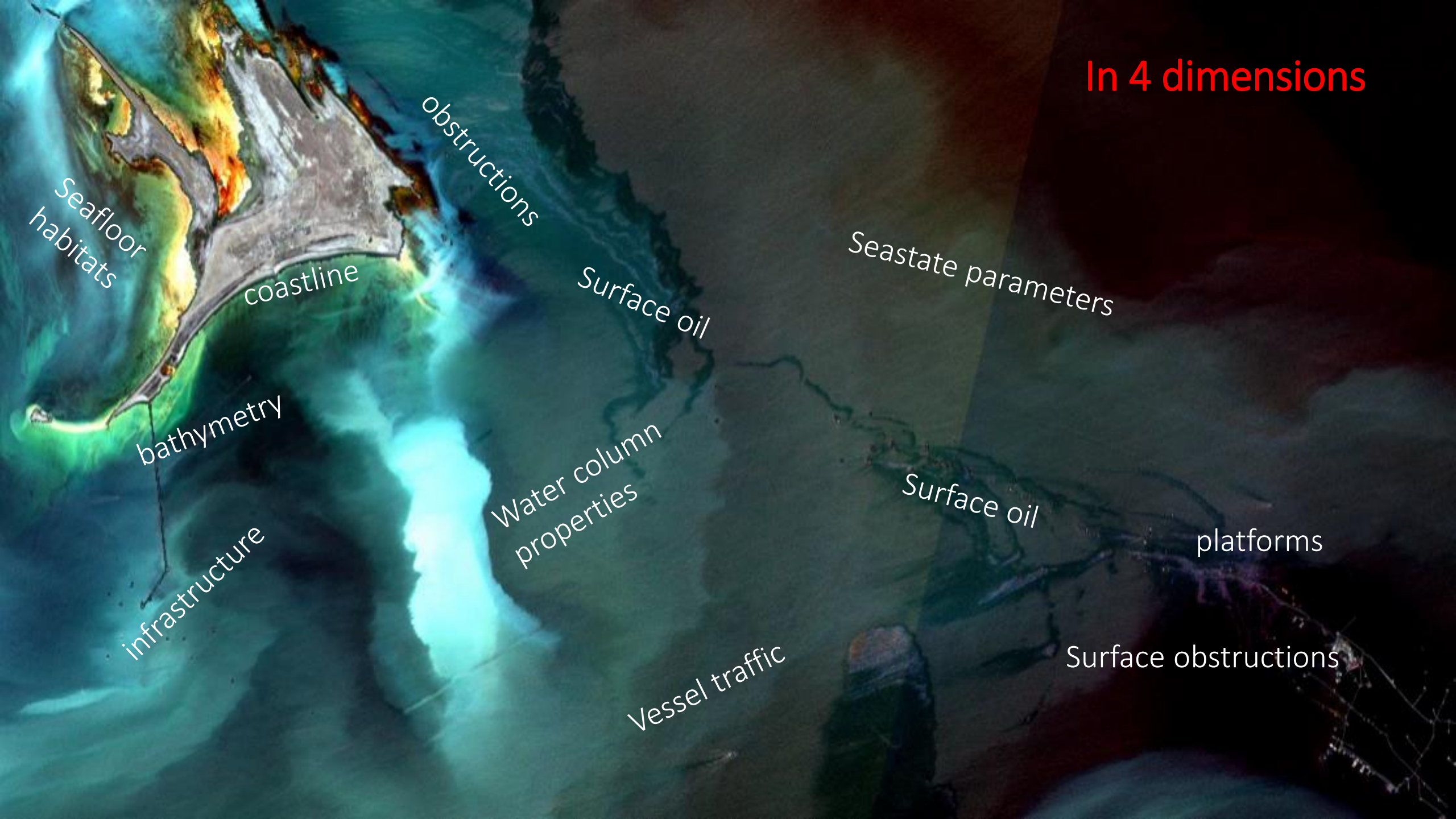
Quality assurance procedures for SDB

Dr. Thomas Heege, CEO

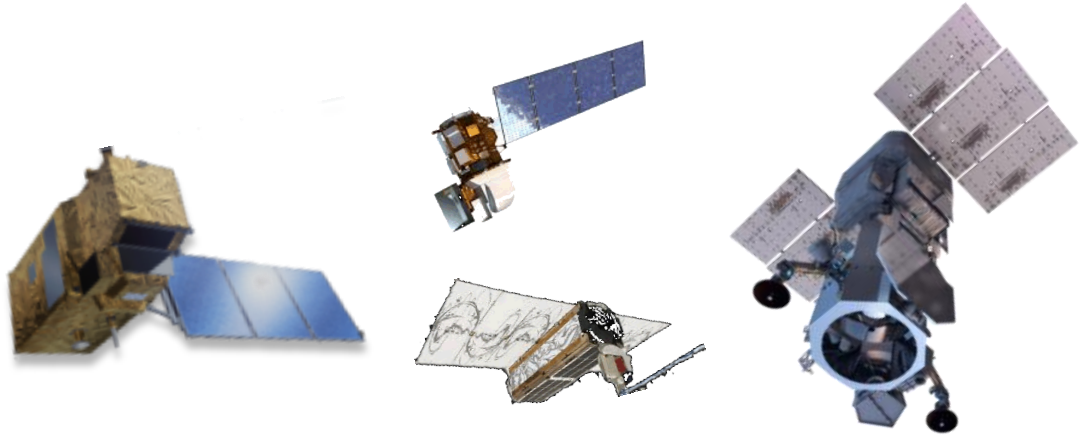



In 4 dimensions
Seafloor habitats
obstructions
coastline
Surface oil
Seastate parameters
bathymetry
Water column properties
Surface oil
platforms
infrastructure
Vessel traffic
Surface obstructions

Quality drivers for SDB products

Sensors

- **Spatial resolution**, sensitivity, spectral resolution, capacities
- *Align to requirements (resolution, accuracy, integrated, other)*



Quality drivers for SDB products

Sensors

Data analytics

- Approaches (empirical / semiphysics/fully)
- *Align to requirements (accuracy & uncertainties, independent, further products)*

Quality drivers for SDB products

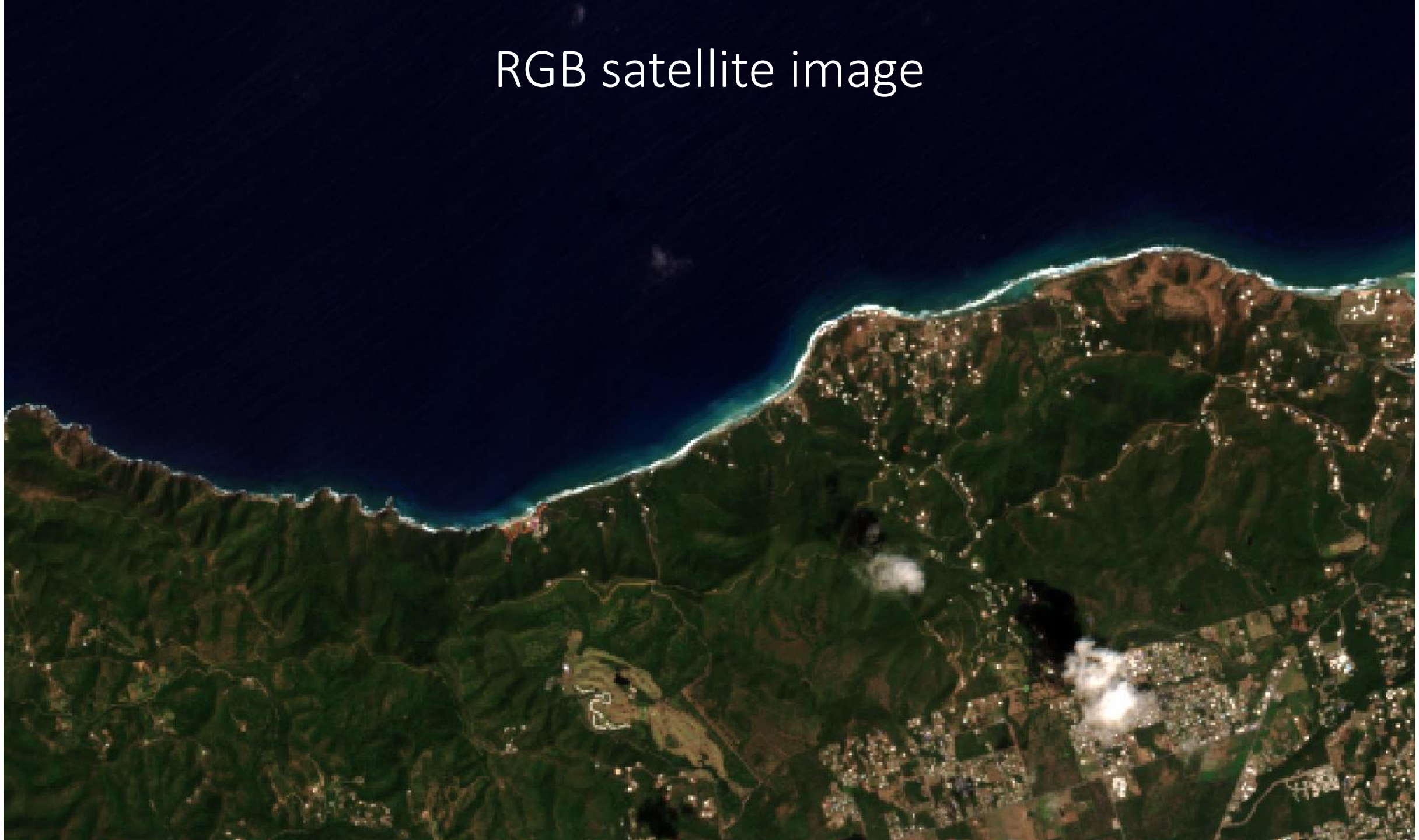
Sensors

Data analytics

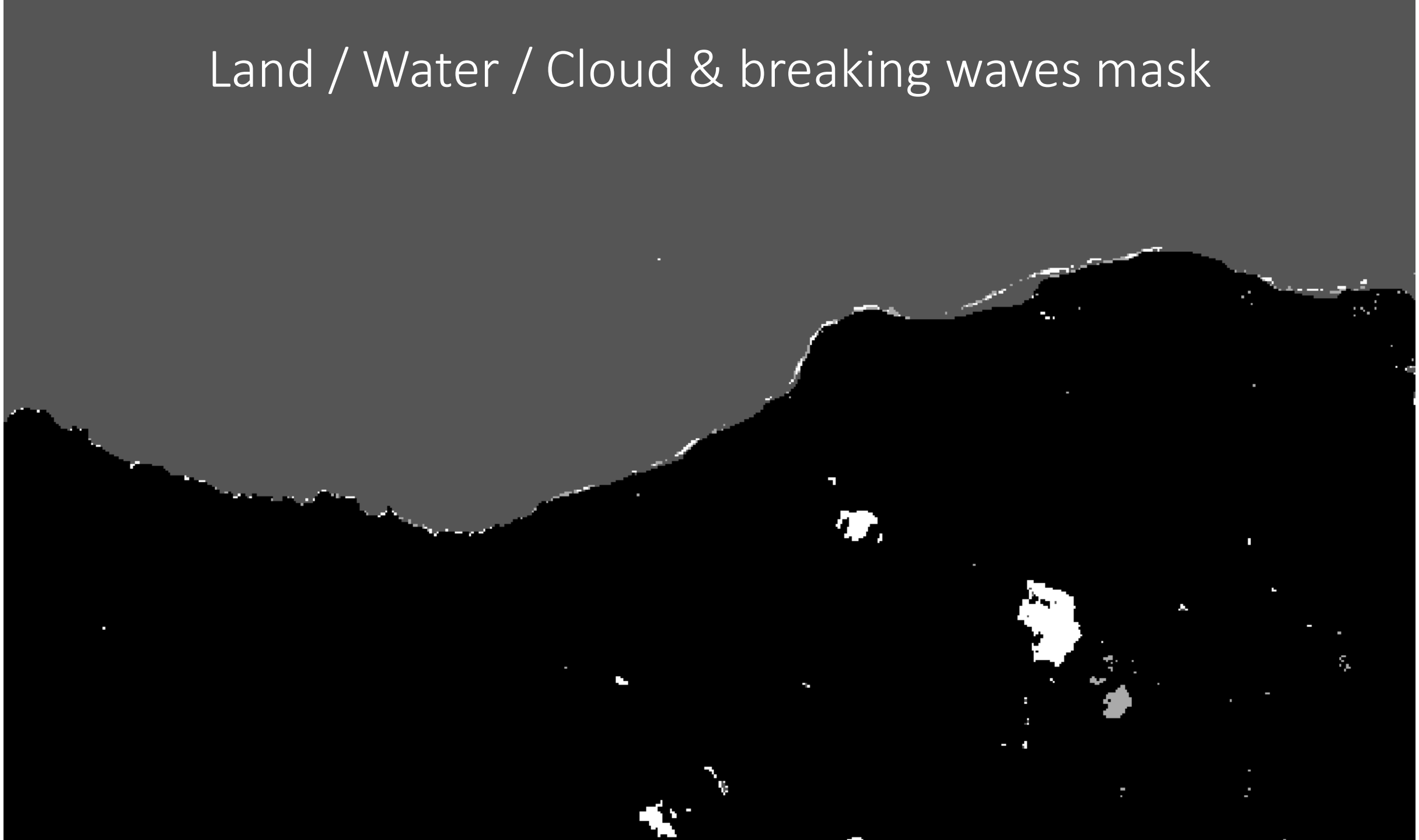
Production workflow

- Feasibility forecast (environment, data & sensors), scene selection & QC
- Process configuration
- Post-processing, tidal corrections, vali/cali, QA/QC
- **Integrated approach / independent source ?**

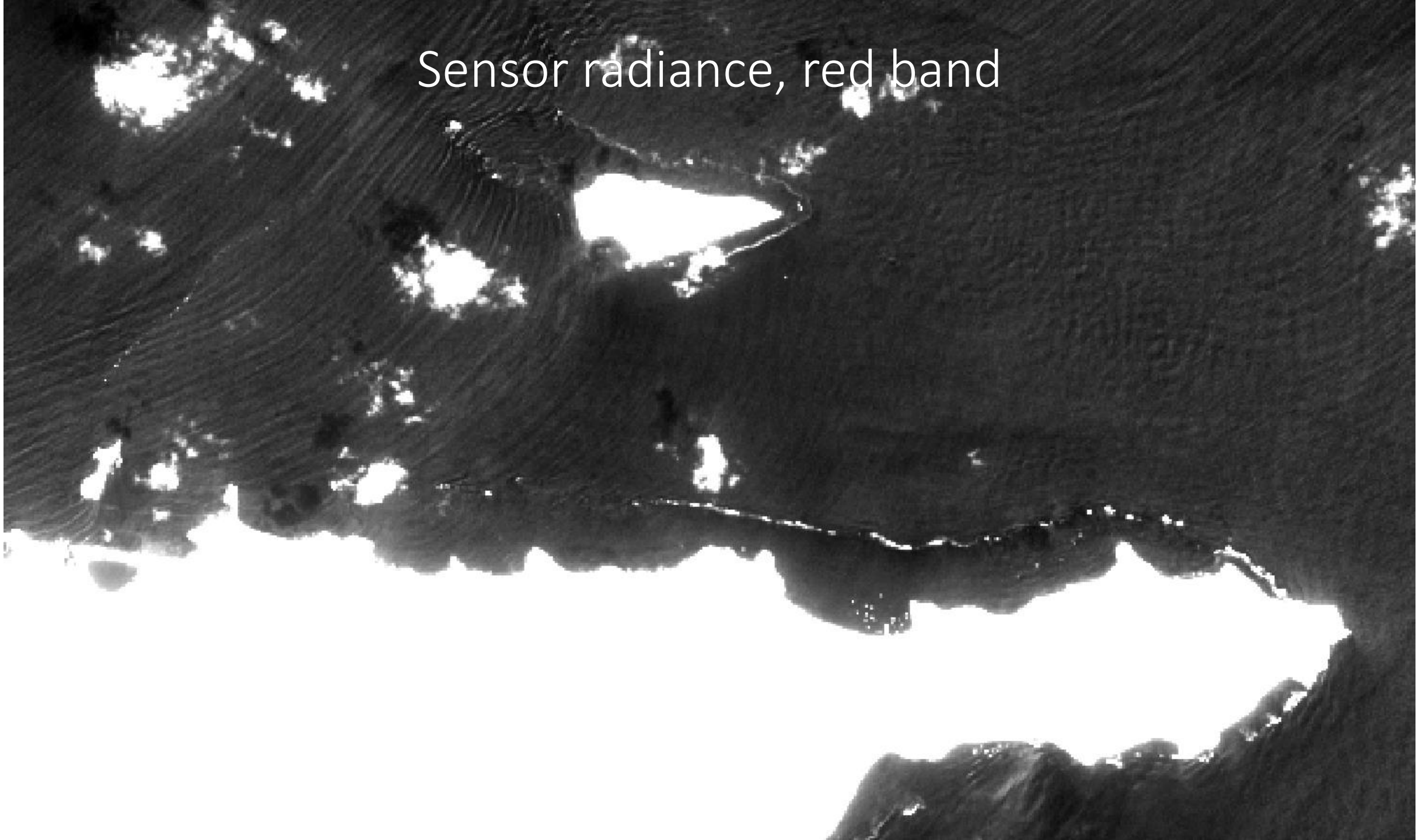
RGB satellite image



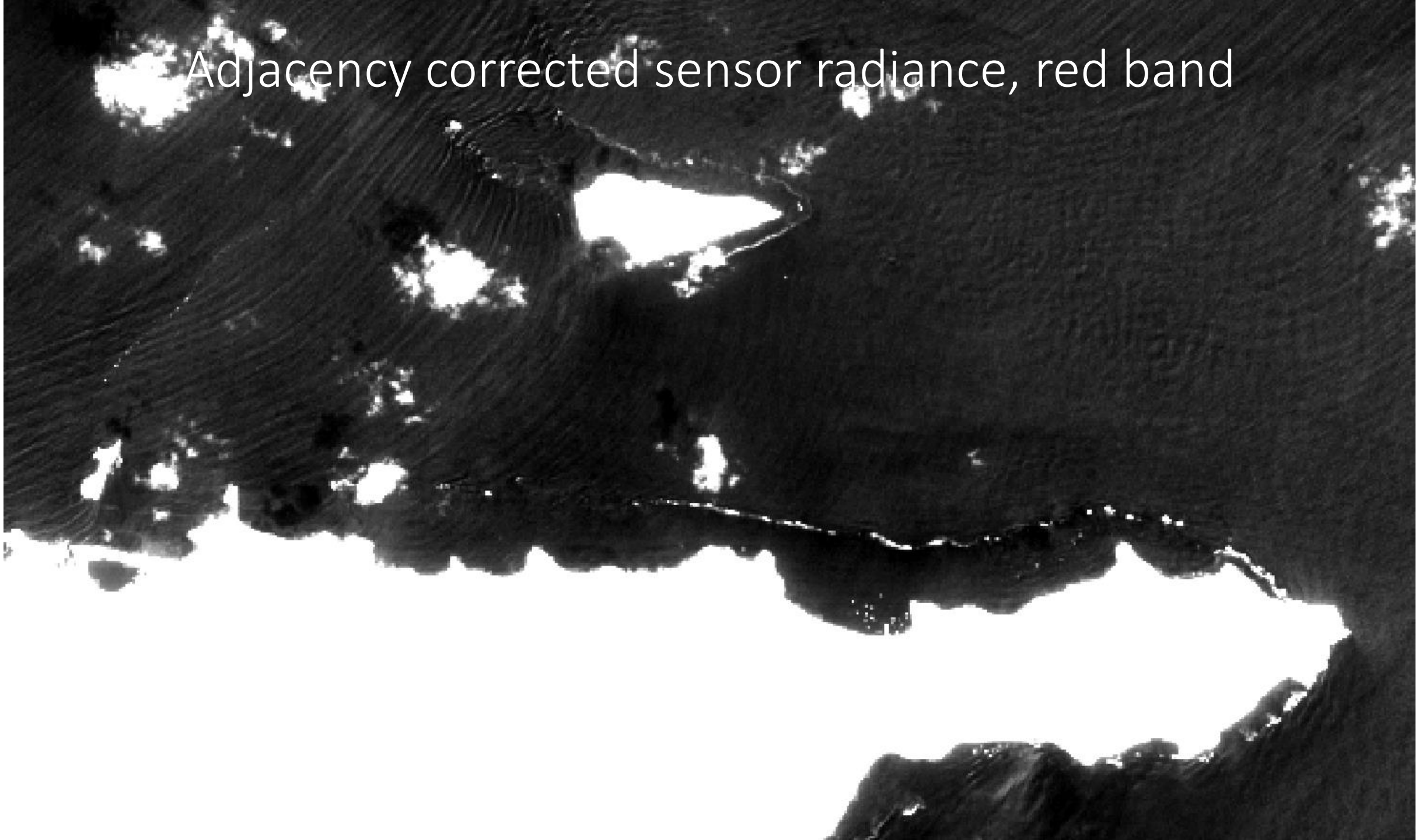
Land / Water / Cloud & breaking waves mask



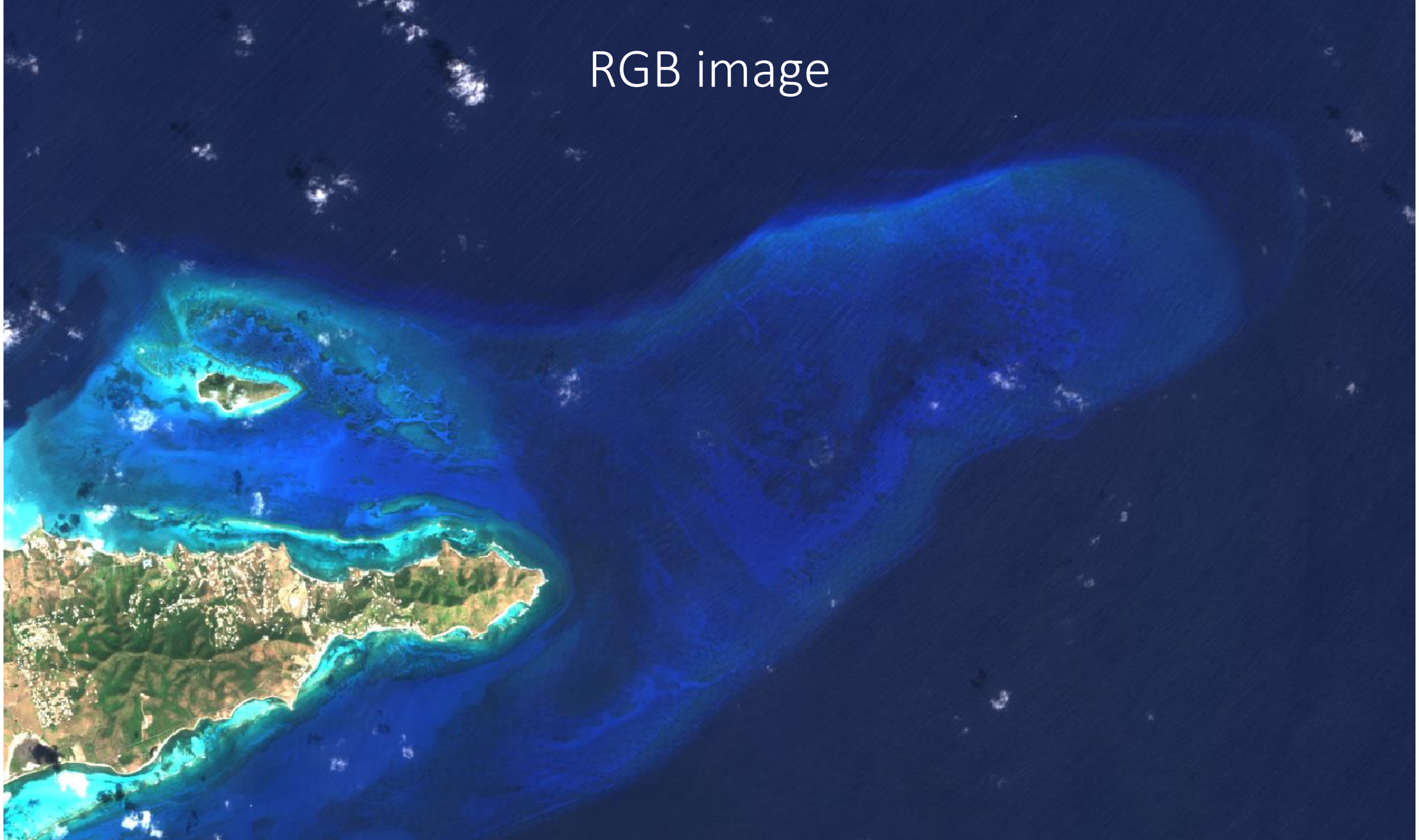
Sensor radiance, red band



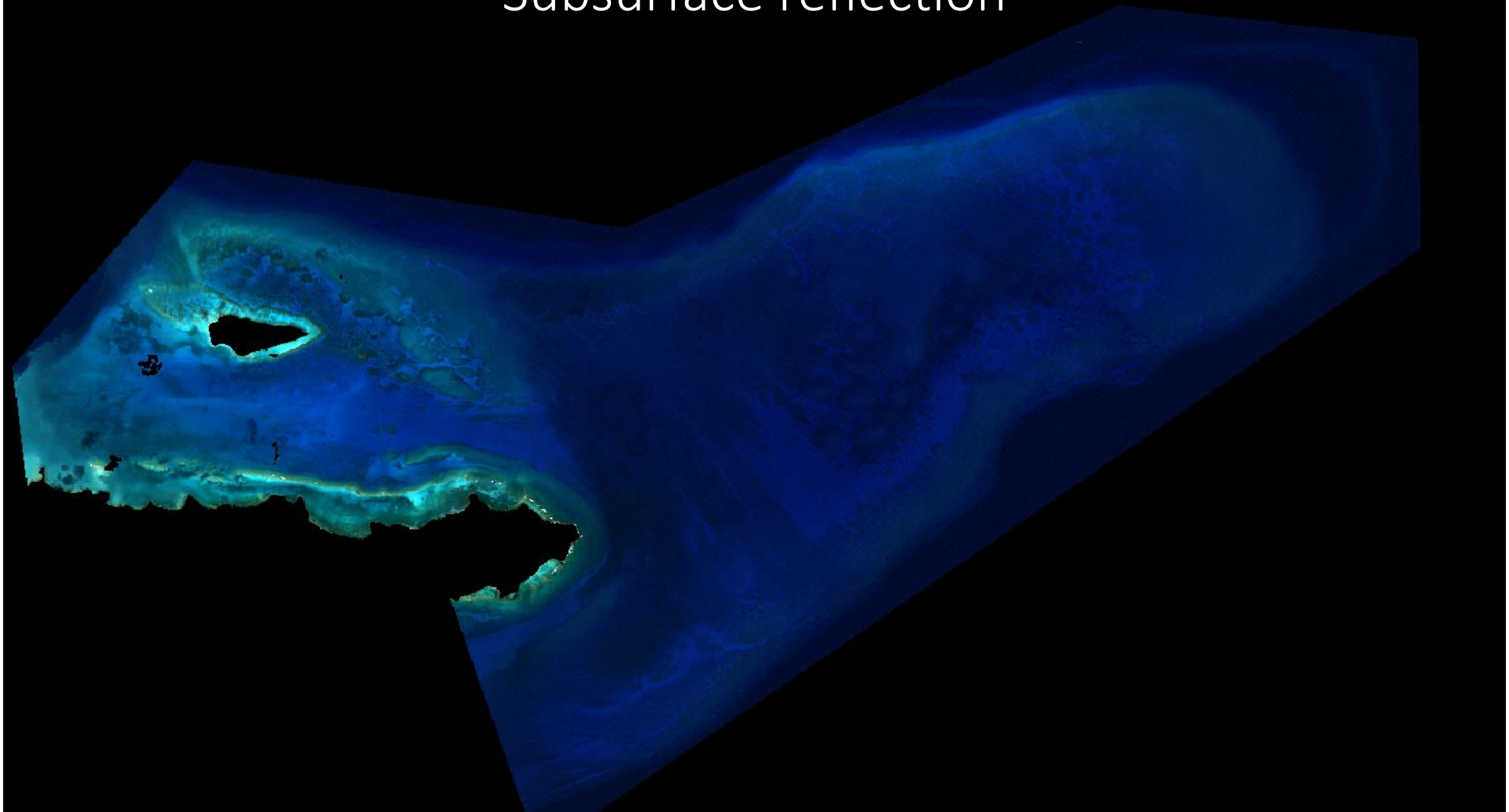
Adjacency corrected sensor radiance, red band



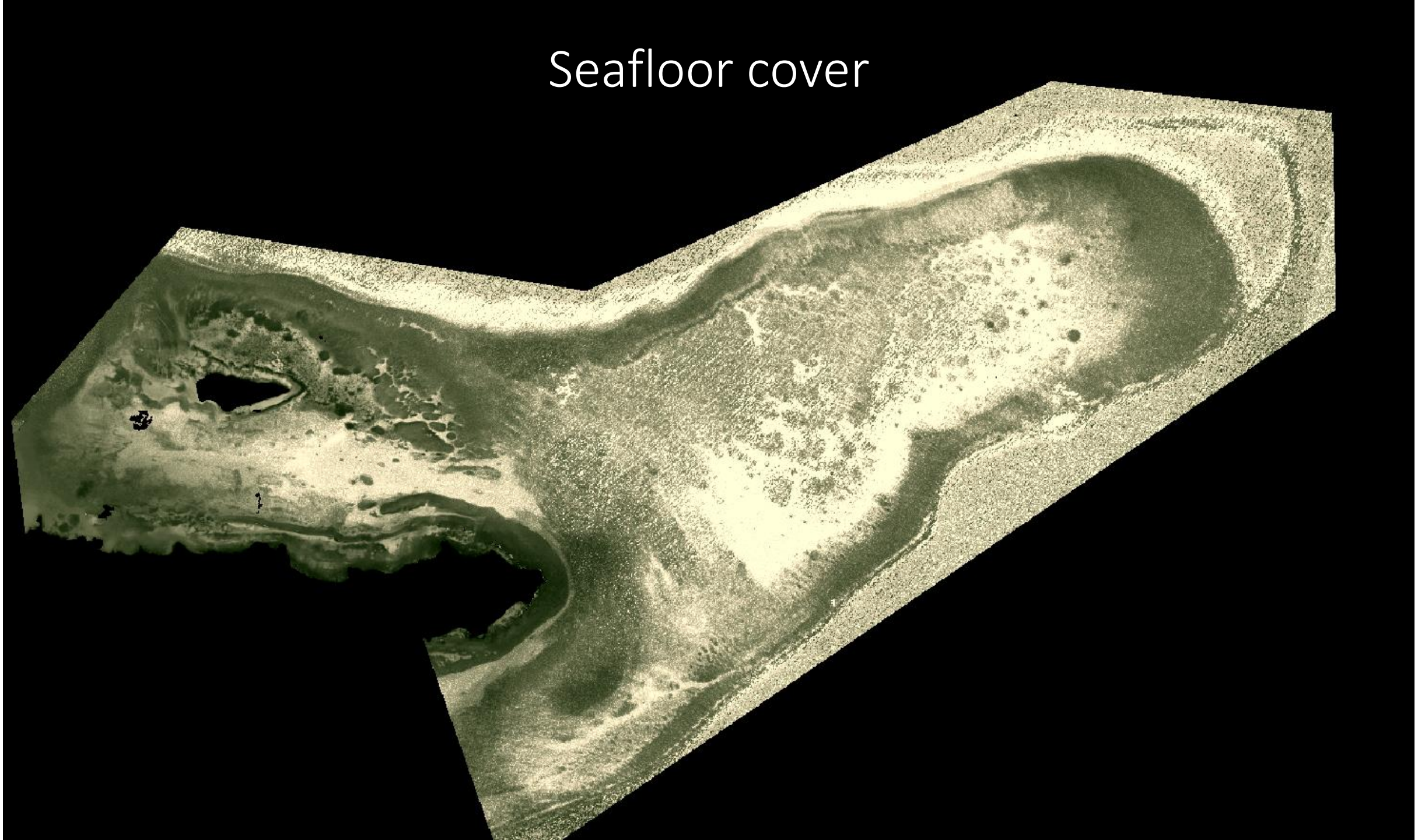
RGB image



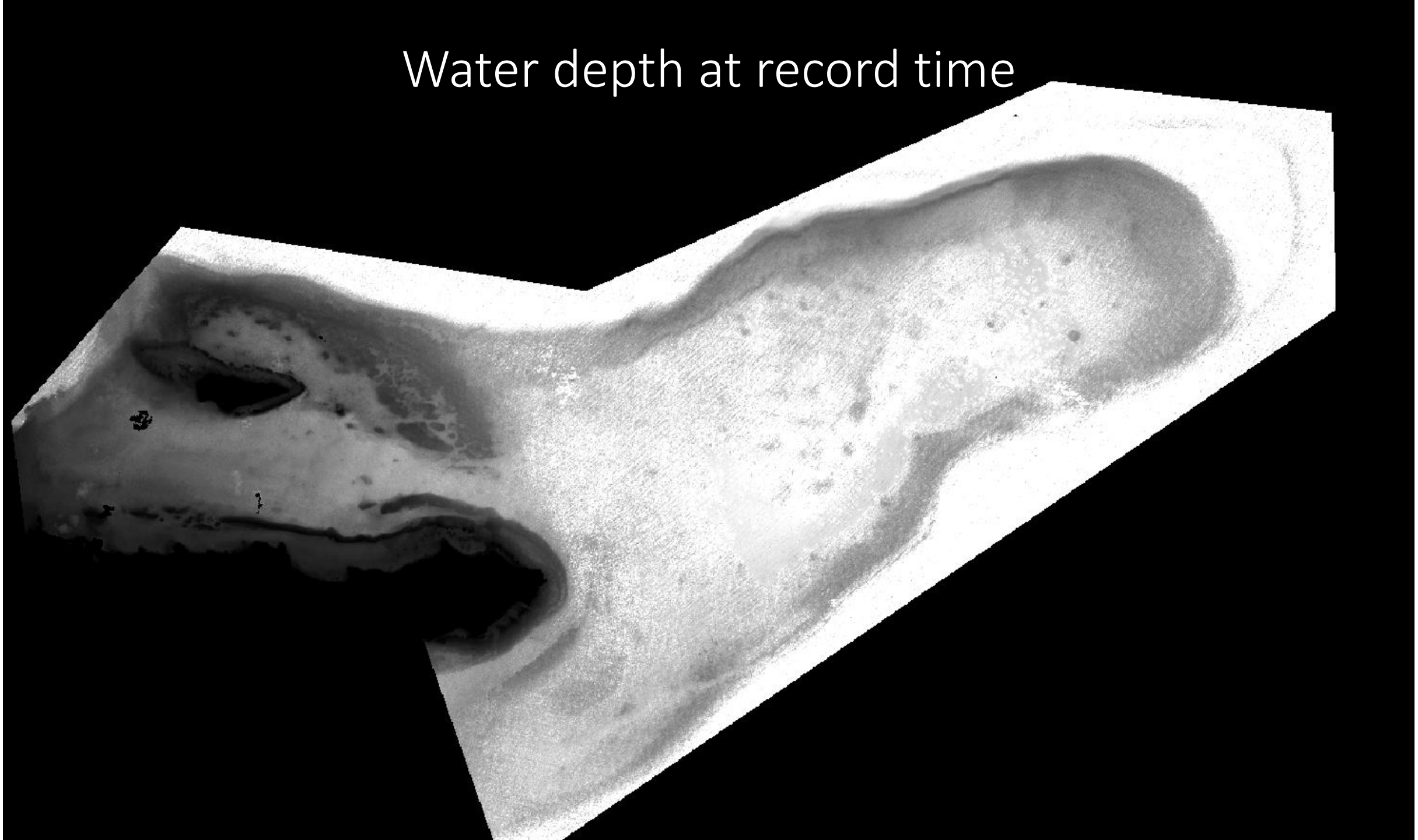
Subsurface reflection



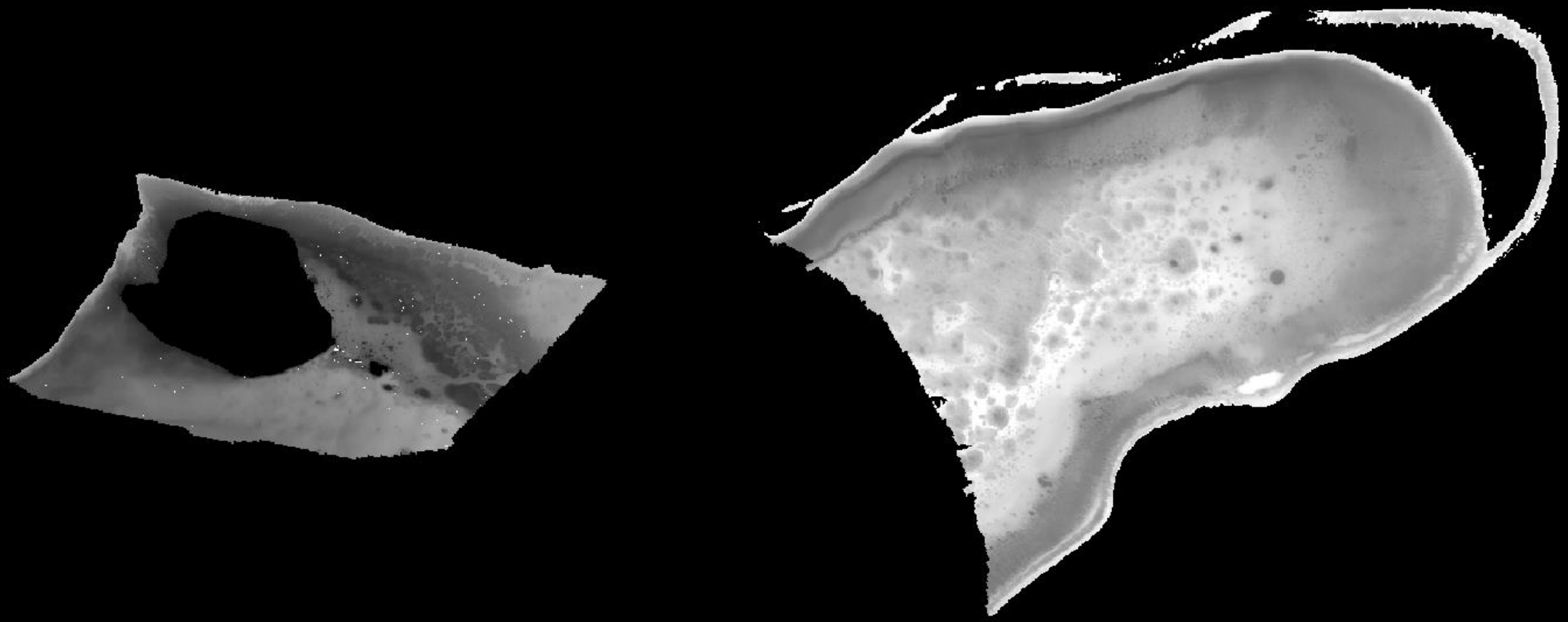
Seafloor cover



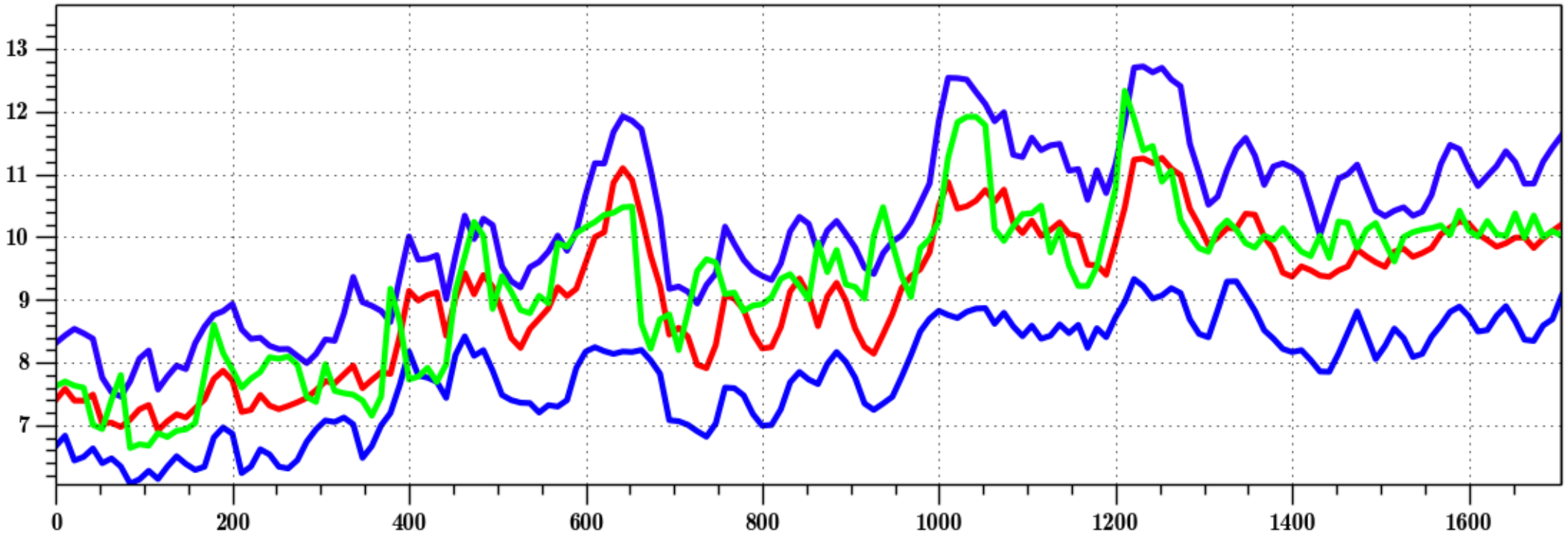
Water depth at record time



NOAA water depth

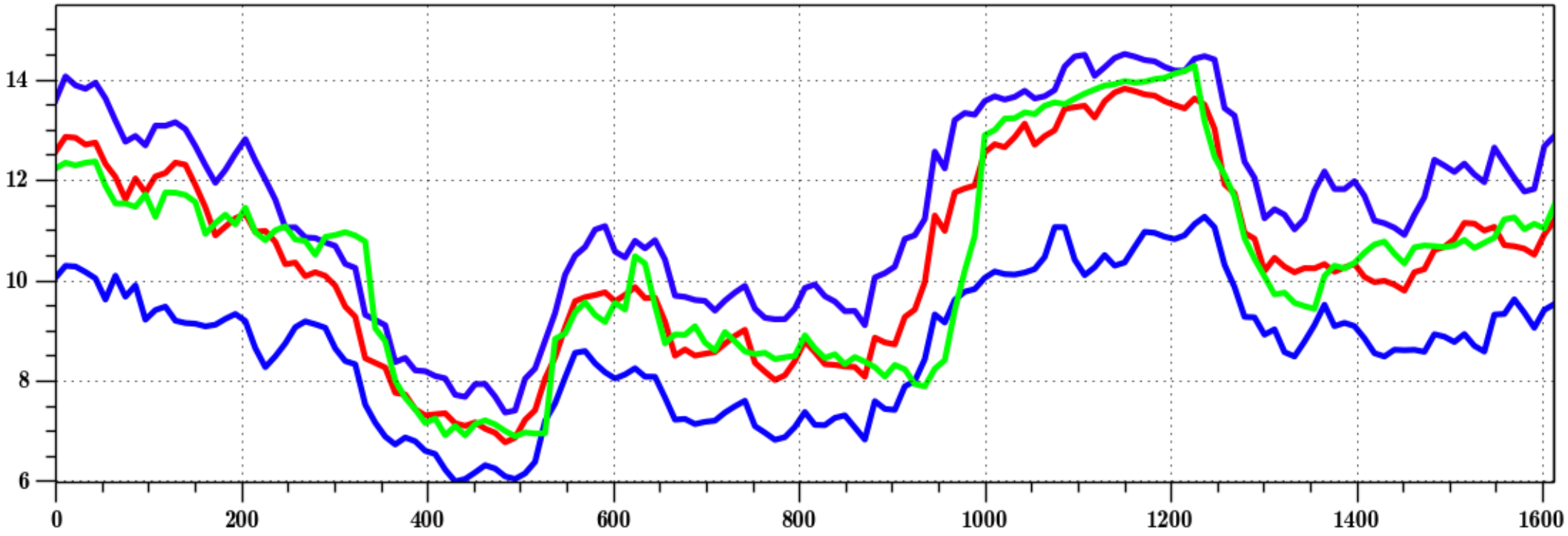


Comparison: independent fully physics based versus NOAA



Green: NOAA data | Red: EOMAP depth | Blue: 90% uncertainty band

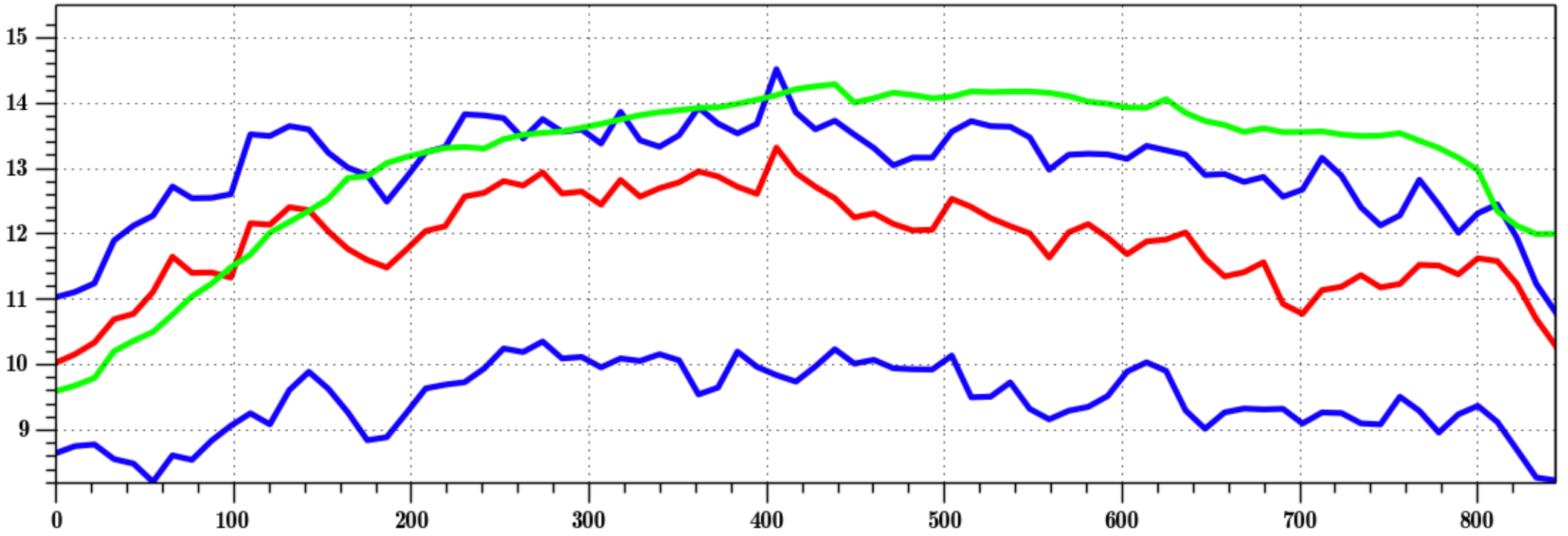
Comparison: independent fully physics based versus NOAA



Green: NOAA data | Red: EOMAP depth | Blue: 90% uncertainty band

Comparison: independent fully physics based versus NOAA data

Example: Area under impact of undercorrected turbidity



Green: NOAA data | Red: EOMAP depth | Blue: 90% uncertainty band

EOMAP’s solution – Integration SDB and single beam

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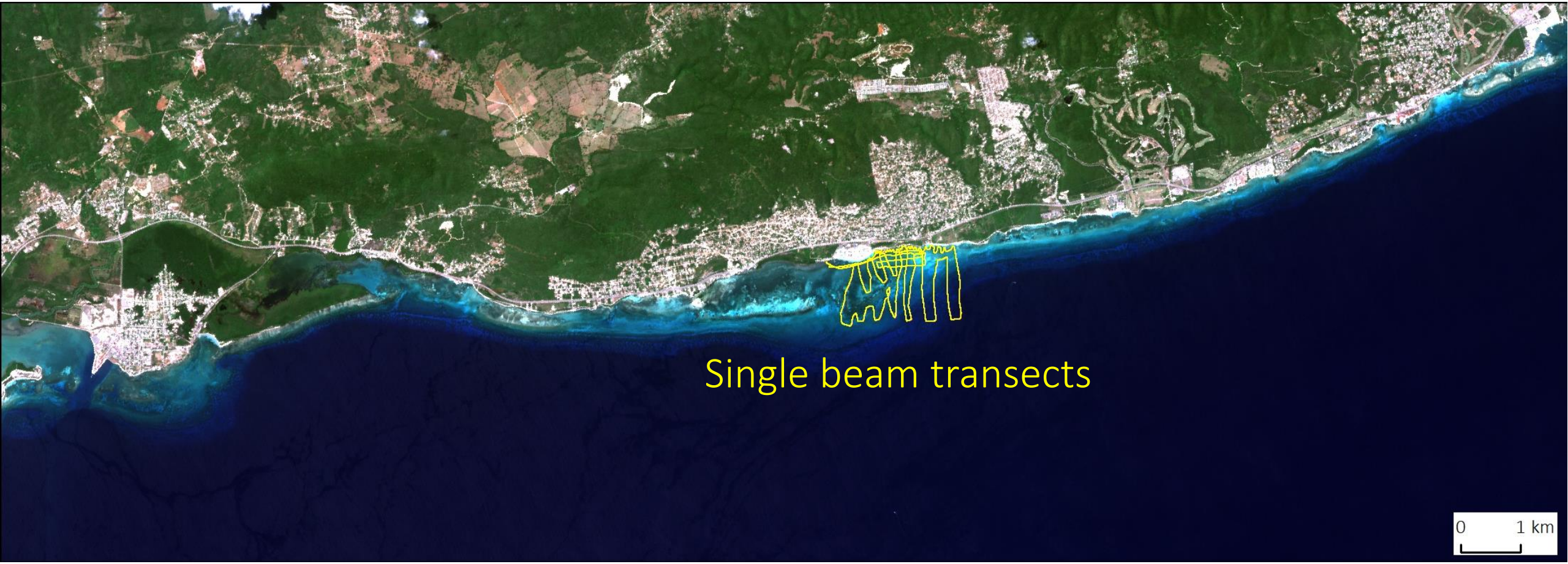
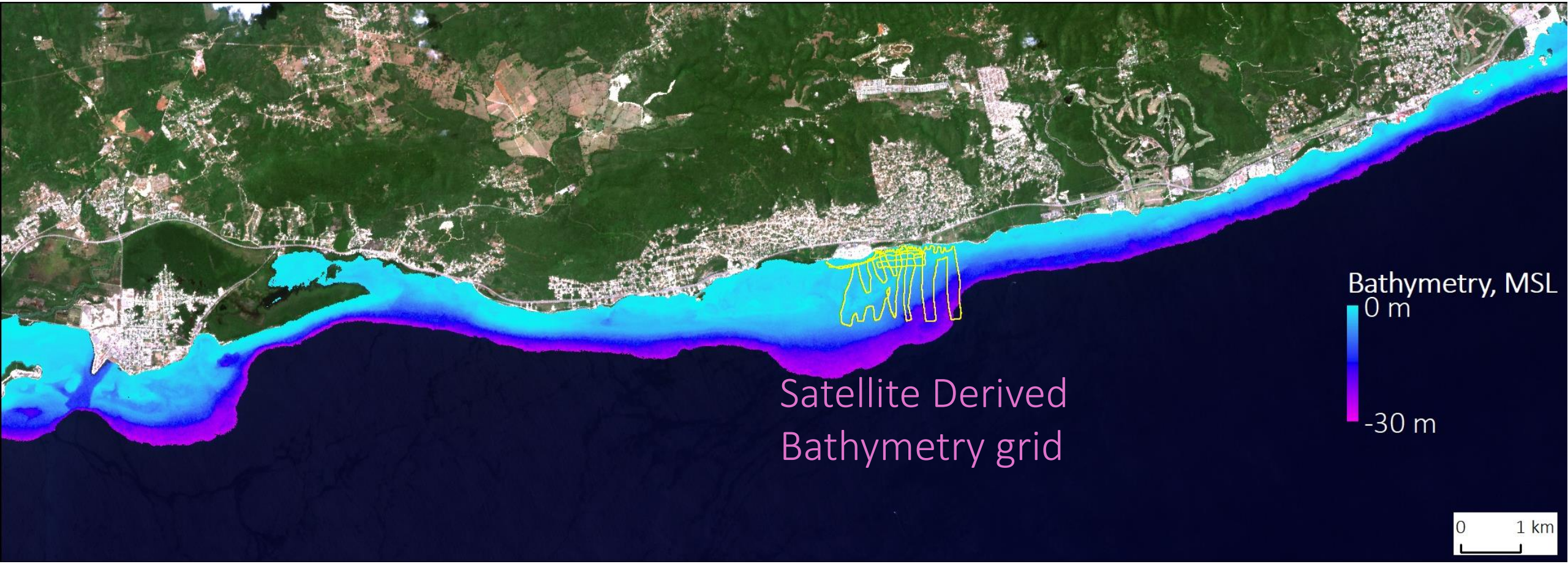
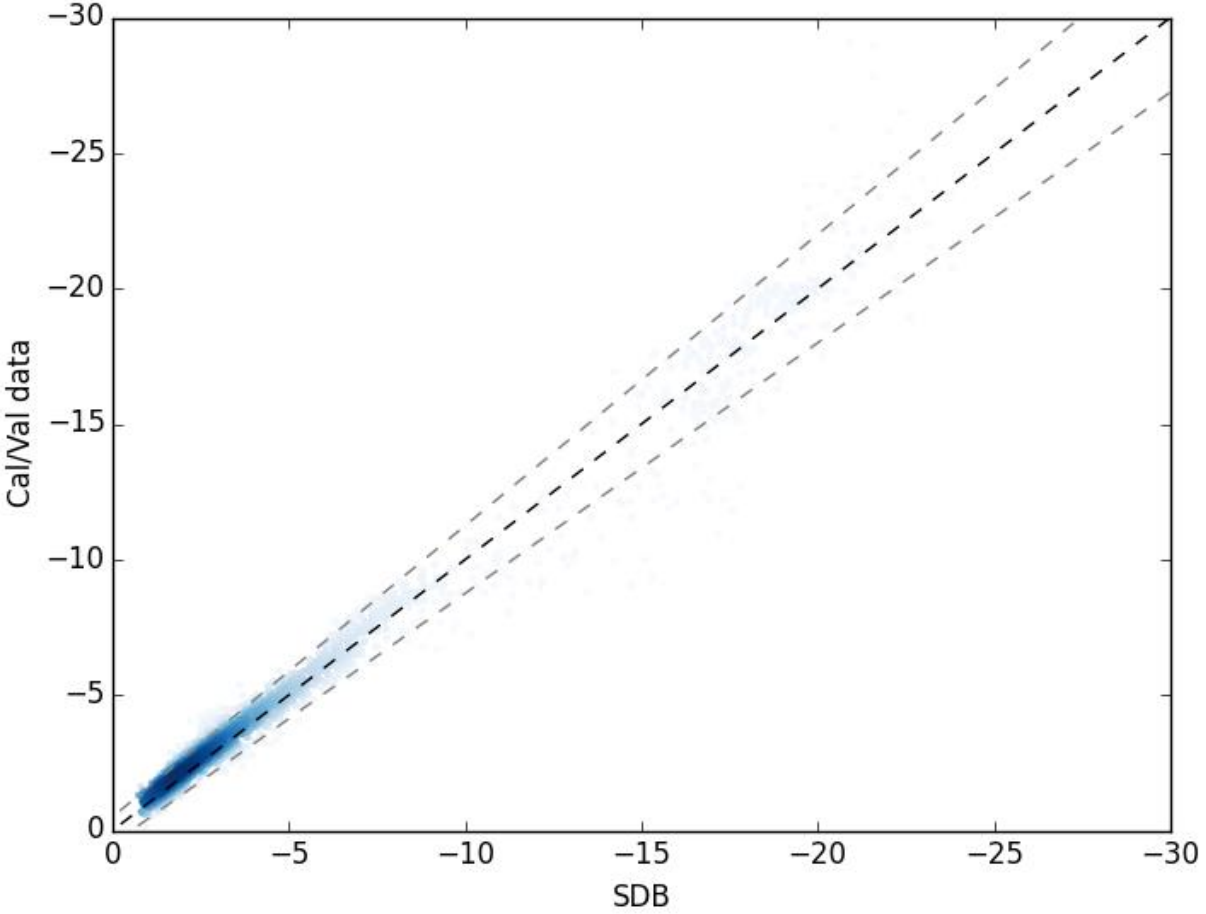


EOMAP's solution – Integration SDB and single beam



Integration SDB and single beam



90% of SDB data within 50cm accuracy compared to single beam transects

Quality assurance for SDB products

Sensors

Data analytics

Production workflow

How to reflect all this in:

Standards ?

Risk management ?

Tendering requirements ?

Fostering improvements & innovation?

Knowledge dissemination & Capacity building?

EOMAP HQ
Schloss Seefeld, DE