National Aeronautics and
Space Administration

NASA earth

Earth Action Overview for BDEC Team Meeting
May 27, 2025

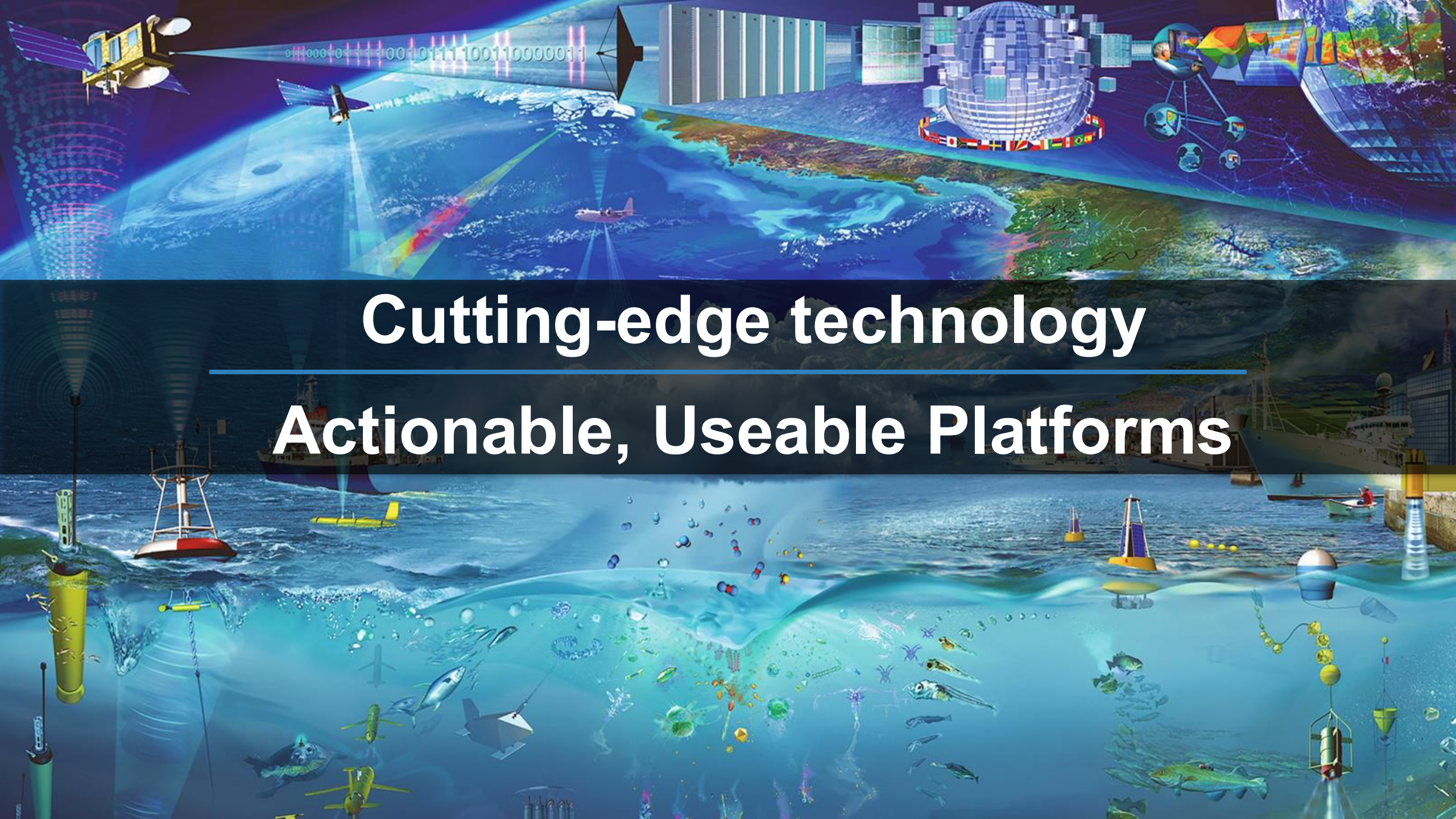
Tom Wagner, PhD
Associate Director for Earth Action
Earth Science Division

Revolutionizing Maritime Safety

Saving the whales

Supporting Costal Economies

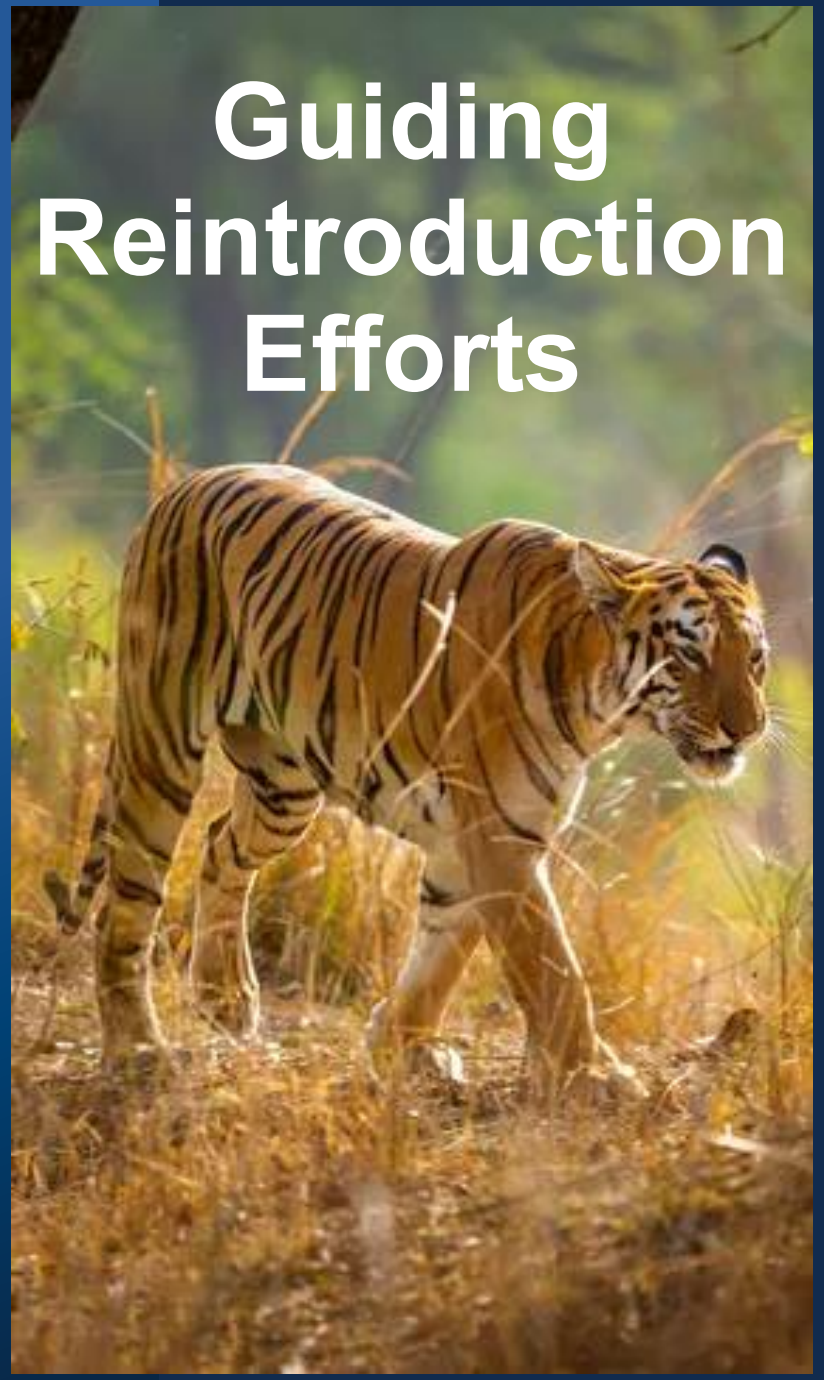
Protecting Endangered Species



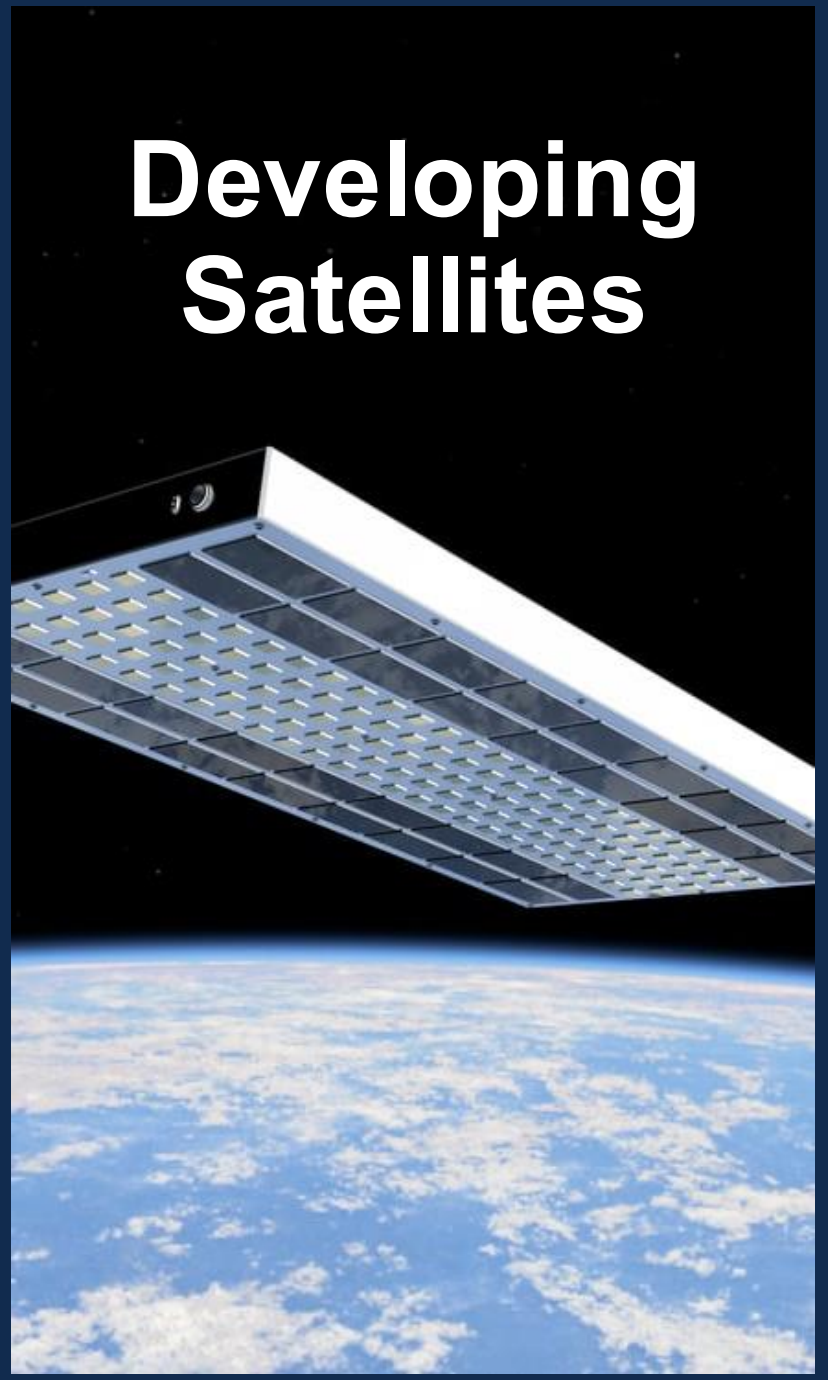
Cutting-edge technology

Actionable, Useable Platforms

Guiding Reintroduction Efforts



Developing Satellites



Discovering Crucial Patterns

Earth Science to Action: an overview

The strategy taps into ESD's end-to-end capability as an open enterprise to incorporate innovation, scientific discovery, and emerging user needs to accelerate the use of Earth science and inform the next iteration of programs, missions, and initiatives.

Objectives:

- Holistically observe, monitor, and understand the Earth system
- Deliver trusted information to drive Earth resilience activities

What do we mean by “action”?

Our definition of action is accelerating the use of Earth science to support policy and decision-making for society’s well-being

- **Scale up:** Scale up existing efforts to get NASA science and data into hands of end users to solve real-world challenges
- **Build bridges:**
  - Build structural and cultural bridges between research, technology, flight, data, and Earth action elements
  - Identify and remove barriers to collaboration
- **Be user centered:** Prioritize info exchange with end users to allow their experiences to inform future programs

We are aligned with the Administration's Priorities

- Tools to empower state, local, tribal governments to become more resilient to a range of risks
- AI to increase efficiency in applications
    - GeoAI may enable much broader use of our data
    - Interested to hear how you are using it
- Focusing on economic growth and enabling the private sector to use our data and tools

74% of Fortune 100 companies use NASA Earth data

Biomass and related products are popular…

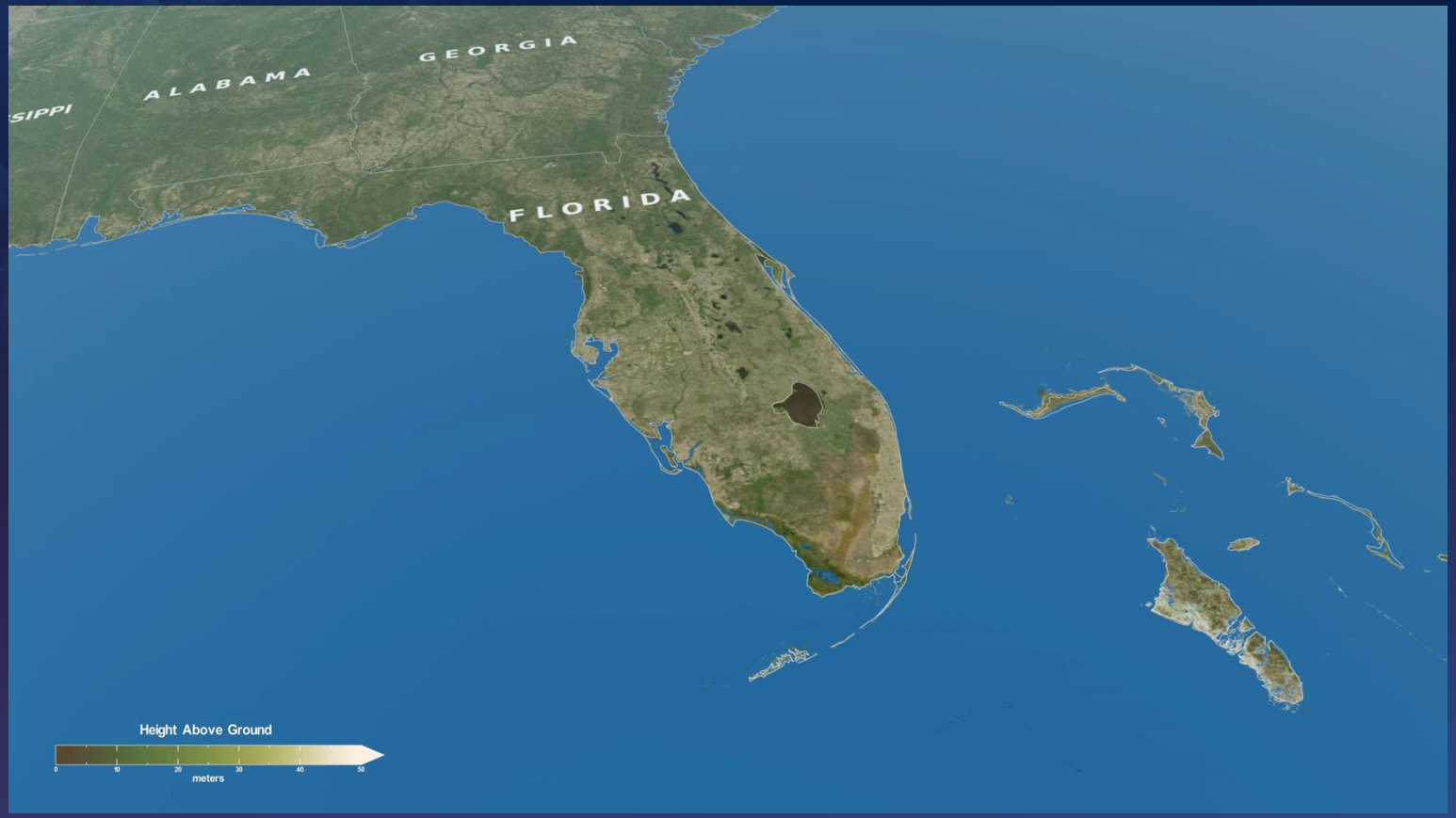
Lessons Learned from Private Sector Discussions

- NASA's unique value
  - Open-source data policy
  - Data reliability, continuity, and coverage
  - Cal/Val/foundational capabilities
  - Learning material
- Highly noted missions/capabilities
  - Landsat, HLS, MODIS, VIIRS, GDDP, FIRMS, Black Marble, Prithvi Foundation Model
- Looking forward to...
  - Integrated products (e.g., HLS+)
  - NISAR
  - Frequent elevation data
  - Better forecasting/projections
  - Downscaled climate projections
  - S2S forecasting
  - Hyperspectral (SBG, Landsat Next)

NASA-ISRO Synthetic Aperture Radar (NISAR) Mission

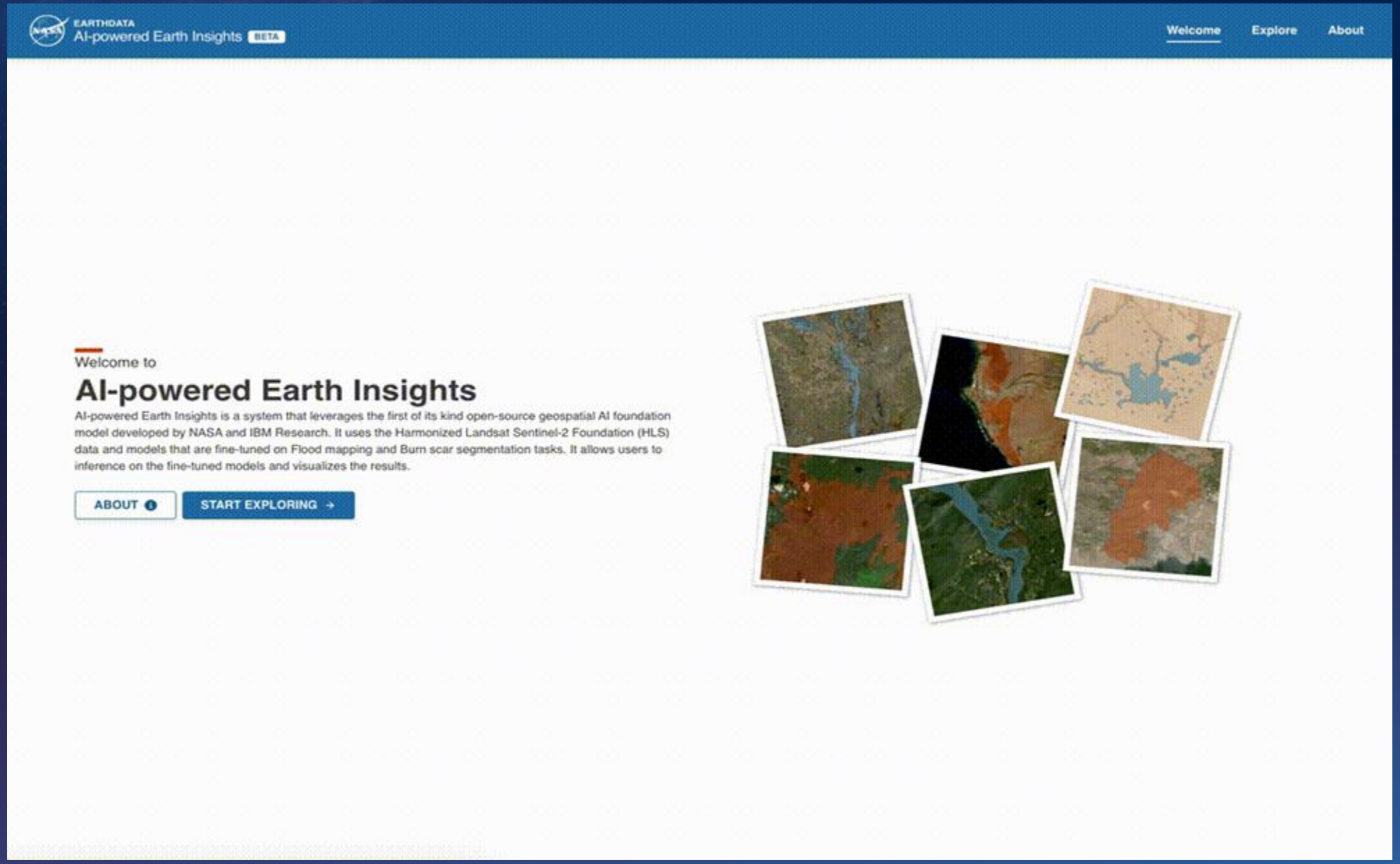
Global coverage with short revisit

- NISAR will measure above-ground biomass every 12 days at high resolution
- Supports forest health monitoring, habitat mapping, and biodiversity tracking
- Useful for detecting deforestation, ecosystem changes, and conservation planning



Close up view of the GEDI forest height data collected over Florida between 2018-19 [NASA SVS]. The fusion of GEDI and NISAR data will deliver high-resolution, frequent biomass maps, vital for assessing things wildfire risk and monitoring forest degradation.

What’s next: GeoAI and Foundation Models

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