



National Aeronautics and  
Space Administration

# NASA earth

## Welcome from the NASA Water Resources Program

**Perry Oddo**

Program Coordinator | Water Resources Program

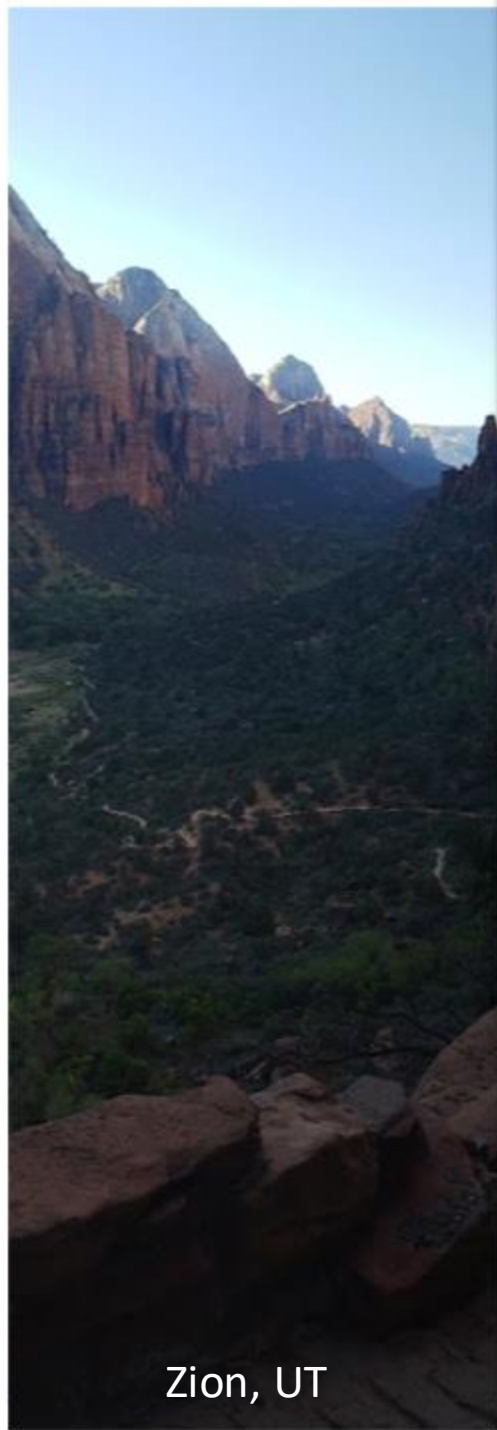
NASA Earth Action | Earth Science Division

*WWAO Annual Meeting | 5.13.25*





Death Valley, CA



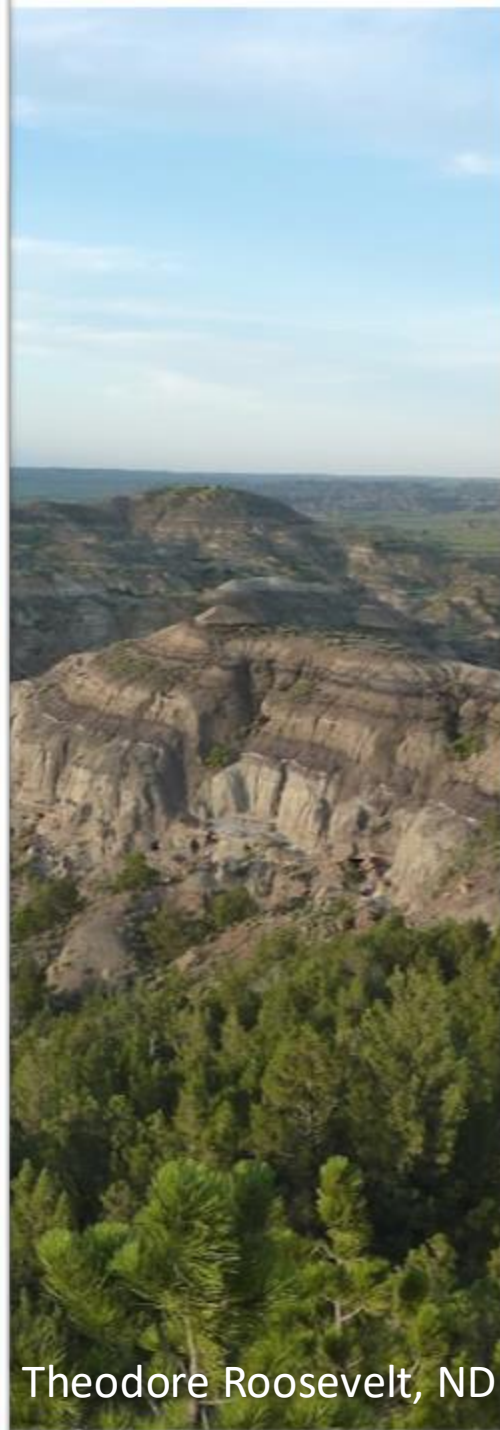
Zion, UT



Grand Canyon, AZ



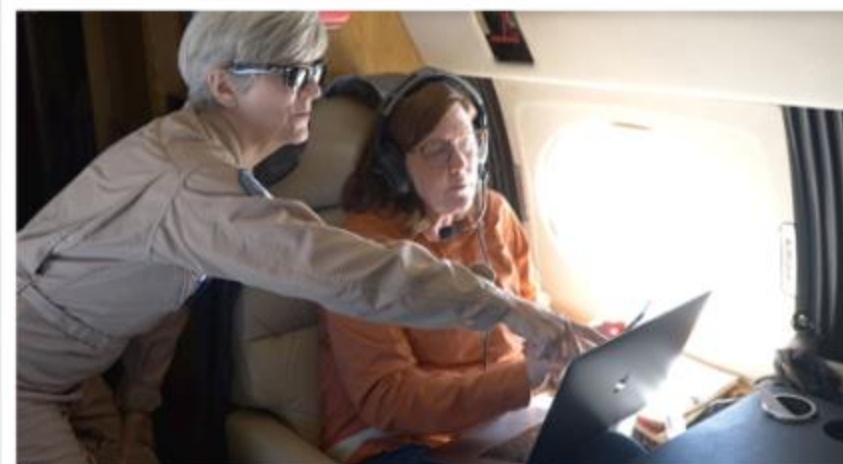
Glacier, MT



Theodore Roosevelt, ND



**Working with partners,  
within communities, is the  
cornerstone of NASA's  
mission to support water  
management needs.**





**“We forget that the  
water cycle and the life  
cycle are one.”**

*-Jacques Yves Cousteau*

**As water resources become scarcer, water resource information  
will become more critical.**

NASA Earth observing satellites offer unprecedented data for accurate assessments of water resource quality, supply, and demand, crucial for addressing future challenges.



# NASA Water Resources Program

*The goal of the Water Resources Program is to advance the use of NASA Earth science data for sustainable, adaptable, and informed water resources management.*



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## Program Objectives

1. Enhance Water Use Efficiency
2. Improve Water Quality Monitoring and Management
3. Strengthen Water Resources Resilience
4. Foster Awareness and Empower Communities

# Program Pillars



## Portfolio of Applied Research Projects

- Enable & support individual applied research
- Capacity building
- Transfer of technology or information to decision-makers
- Interface with Earth Science Missions



**Western Water  
Action Office**

## Water for Impact Partnerships

- Contribute to Interagency & International Working Groups
- Engage with private and public entities to amplify the benefits of EO
- Targeted engagement activities (WQ/coastal)
- Cross ESD, EA, Mission activities



May 12 2025 16:48

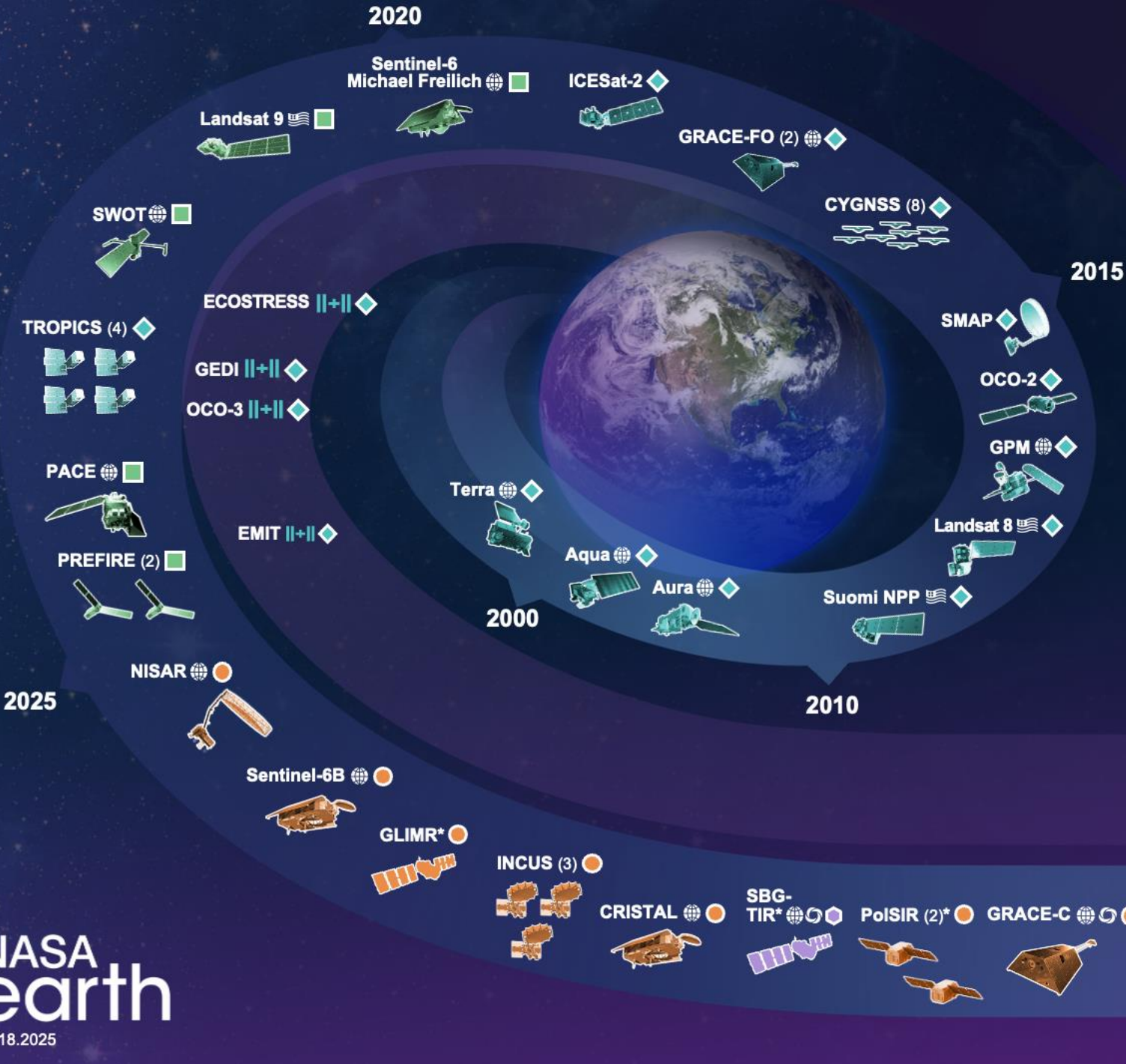
<https://svs.gsfc.nasa.gov/5067/>



# WATER AND ENERGY CYCLE FLEET

## Key

- International Partners
- U.S. Partner
- ISS Instrument
- JPSS Instrument
- Cubesat
- Launch Date TBD
- Earth System
- Observatory Mission
- (Pre) Formulation
- Implementation
- Operating
- Extended

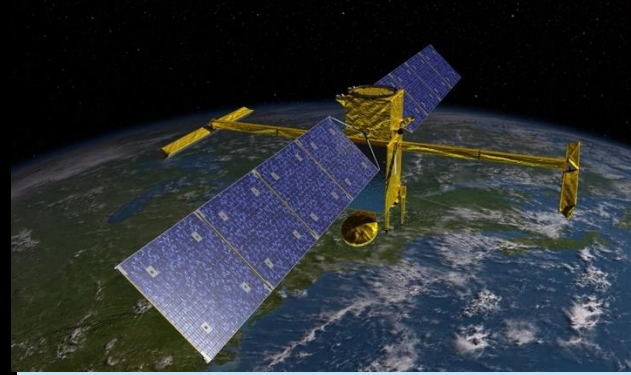


## ISS INSTRUMENTS

## MISSIONS

# The Future of Earth Science for Water

In the next decade NASA is leading an outpouring of information from space!

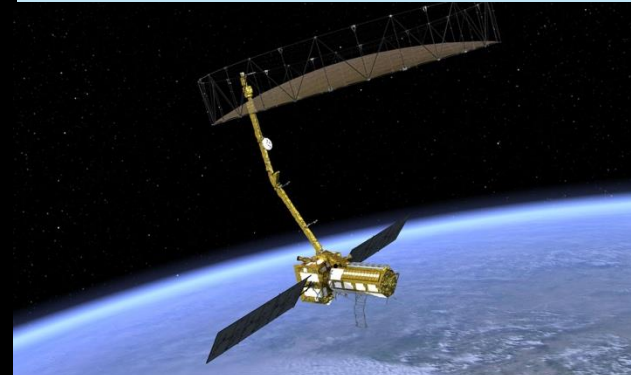


**Surface Water and  
Ocean Topography  
(SWOT)**

**Plankton Aerosol,  
Cloud, Ocean  
Ecosystem (PACE)**



**NASA-ISRO SAR  
(NISAR)**



**Surface Biology &  
Geology Observable  
(SBG)**





# NASA Water Data

- Precipitation
- Snow Cover
- Groundwater
- Water Quality
- Evapotranspiration
- Soil Moisture
- Surface Water

## NASA Water Resources Program

NASA Satellite  
Data



Sustained use of NASA data in  
water resource management  
decisions.





# Collaborating with user communities





## CHALLENGES

Monitoring &  
Managing  
Water Quality

Ensuring Fair  
Water Allocation  
and Distribution

Mitigating Risk &  
Responding to  
Extremes

Designing & Operating  
Sustainable Hydropower  
Systems

Addressing Water  
Scarcity with Efficient  
Irrigation

Managing Wastewater  
& Stormwater Systems

Facilitating Transboundary  
Water Management



**At the heart of NASA's Water Resource Program is a human-centered approach: Working with partners and within communities for co-developing solutions in using Earth science information to support their water management needs.**

## NEEDS

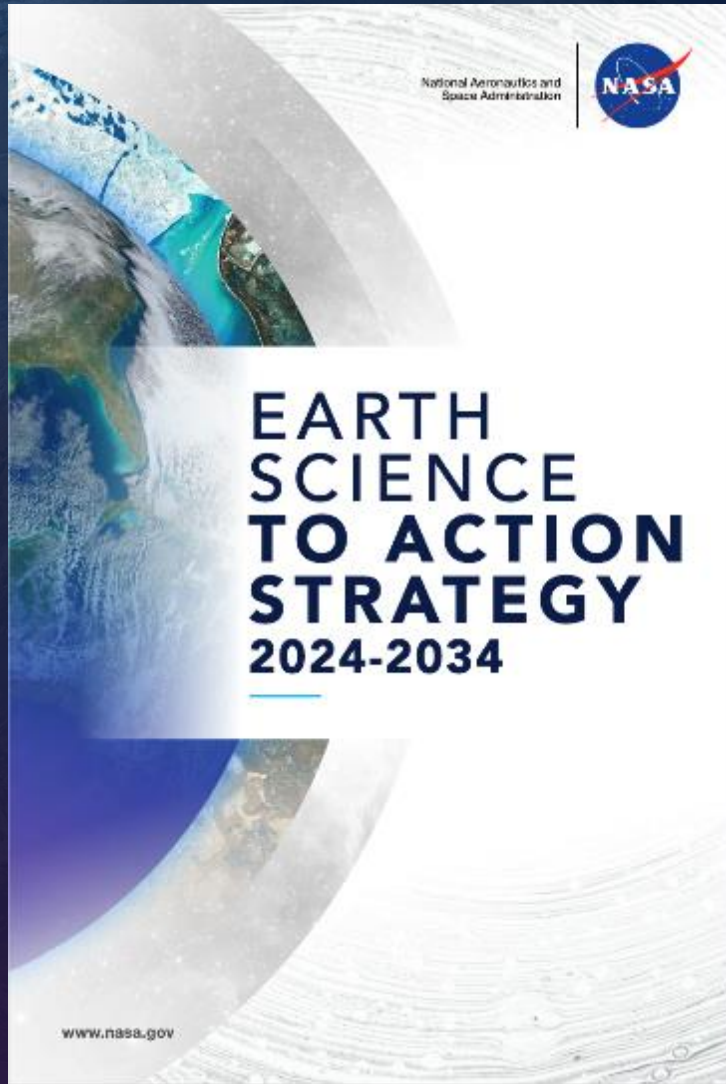
Watershed Health: need rapid  
assessment of freshwater habitat  
to prioritize habitat restoration

Water Quality: need  
comprehensive basin-wide scale  
sediment loading models

Water Availability: need timely  
streamflow predictions at sub-  
basin level

Water Use: need crop  
mapping for irrigation status





# Earth Science to Action

**Vision** A thriving world, driven by trusted, actionable Earth science

**Mission** Compelled by our planet's rapid change, we innovate and collaborate to explore and understand the Earth system, make new discoveries, and enable solutions for the benefit of all

## Objective 1

Holistically observe, monitor and understand the Earth system

## Objective 2

Deliver trusted information to drive Earth resilience activities

## Guiding Principle

Amplify impact and augment our capabilities through enhanced partnerships

# Thank you from the team!

## Program Manager



Erin Urquhart

## Program Coordinator



Perry Oddo

## Associate Program Managers



Kelly Luis



Chris Hain

## WWAO Program Manager



Stephanie Granger



**NASA**  
**earth**

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Your Home. Our Mission.