



# EARTH SCIENCE TO ACTION STRATEGY 2024-2034

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## We Are at a Pivotal Moment

The challenges we face are steep, but we stand at the precipice of a golden age of Earth observation. We are currently either flying or building the tools that humankind can use to meet these challenges. In fact, we have more data and information available to us than ever before – so much so that decisionmakers cannot access or act on it fast enough, creating a gap between what’s available and what people can do with it.

Our new strategy is designed to bridge that gap and accelerate and advance the impact of NASA’s Earth science to meet this moment for the benefit of all humankind.

## Our Vision

A thriving world, driven by trusted, actionable Earth science.

## Our 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.

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## ES2A Strategic Goal

Within a decade, we will advance and integrate Earth science knowledge to empower humanity to create a more resilient world.

## ES2A Objectives



### Holistically Observe, Monitor, and Understand the Earth System

Using the power of science, cutting edge technology, engineering, modern tools and infrastructure, partnerships, and space-based observations, NASA will build a global framework that will allow constructing a comprehensive digital description of the Earth system. This approach will include the Earth environment's physical and geological systems, including surface and interior, biologic, and chemical components, as well as human and other relevant systems. The outcome will help answer challenging science questions posed by the community and allow a thorough understanding and monitoring of the Earth system and its interconnected nature. It will also allow the emergence of new applications and discoveries to benefit society.



### Deliver Trusted Information to Drive Earth Resilience Activities

Based on our history of understanding Earth as a system and its various applications, we will coalesce and cultivate the diverse communities of Earth science, including working across sectors and across agencies, to generate the science-based decision support information needed by users. When appropriate, we will build efficient and interactive end-to-end tools, models, and assessment systems with the needed latencies, at the appropriate temporal and spatial scales, and with the appropriate uncertainty quantification to serve people, communities, decision- and policy-makers, enabling them to take science-based actions. These activities will support efforts to build Earth resilience, including the development of strategies for mitigation, adaptation, and the assessment of various risks and contingencies associated with global change and its impacts. This approach will also include the investigation of potential risks due to crossing thresholds for climate tipping points and the possibilities for cascading environmental and societal impacts.

## Our Approach

We will tap into the NASA Earth science community'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.

