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TOWARDS SPACE-ENABLED EARTH ACTION FOR CLIMATE RESILIENCE: EVOLUTION AND
TRANSFORMATION IN THE DEVELOPMENT OF NEXT GENERATION CLIMATE-RELATED
SERVICES

Abstract

Space systems and Earth science have been at the forefront of understanding the nature and implications of Earth's changing climate, and they continue to be positioned at the forefront of emerging responses to the deepening climate crisis. With economic and social impacts already being felt and public urgency for climate action growing, space agencies are increasingly on the front lines of climate discussions and issues. In 2021, NASA Administrator Bill Nelson discussed how NASA data can contribute to enabling climate resilience and announced a new initiative that became the Earth Information Center. The Earth Information Center is part of a broader NASA vision toward an Earth Action strategy focused on the scaling of NASA science and tools for response to climate and other changes, leveraging national, international, and commercial partnerships. Potential themes for an Earth Information Center, such as sea-level rise and coastal impacts, wildfires, and water resources, have significant potential to support climate resilience efforts across the nation and across the planet.

As the Earth Information Center develops, NASA data, tools, and knowledge can play a critical role in supporting climate resilience efforts. And while NASA capabilities are strong, planning and preparing for climate-related impacts are predominantly undertaken and organized locally, at the State-level, County-level, and City-level. The demand for this support is vast and planning for future climate will require data and expertise from numerous governmental and non-governmental organizations. This paper will describe a potential framework for thinking about space-enabled climate resilience efforts and the role of collaboration with external organizations. The ultimate goal of this framework will focus on working with communities to address their climate-related challenges and to help aid those on the ground seeking to utilize space-enabled capabilities to support climate resilience efforts.