



**United States Group on Earth Observations
Committee on the Environment
National Science and Technology Council**

2022 Annual Report



INTRODUCTION

The United States Group on Earth Observations (USGEO) coordinates Federal Earth observation activities in cooperation with domestic stakeholders, fosters improved Earth system data management and interoperability, identifies high-priority needs and uses for Earth observation data, and coordinates the nation's positions for the international Group on Earth Observations (GEO).

USGEO serves as the formal interagency mechanism for determining and coordinating policy and decisions to ensure United States (U.S.) global leadership in Earth observation (EO) activities, operations, research, and connections with the Earth Observations Enterprise.

Sixteen Departments and Agencies are members of USGEO, along with components of the Executive Office of the President (OSTP and the Office of Management and Budget (OMB)). USGEO is chaired by OSTP and three agencies – National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), and United States Geological Survey (USGS).

USGEO maintains four standing working groups:

Assessment Working Group: Conducts assessments of civil Earth observing systems to assist USGEO's efforts to coordinate, plan, and enhance Federal Earth observation activities.

Data Management Working Group: Fosters the implementation of an interagency framework for life cycle data management, stewardship, and preservation for Earth observation data. Strengthens interagency access and sharing of Earth observation data to extend and maximize agency investments made in data management and stewardship.

Satellite Needs Working Group: Conducts biennial collections of multi-agency satellite observation needs for NASA to consider as part of its satellite systems engineering and budgeting processes.

International Activities Working Group: Coordinates U.S. participation in international Earth observation activities, tracks U.S. activities related to GEO and the GEO Work Programme, and prepares U.S. personnel and positions for GEO meetings and events.

USGEO stands up *ad hoc* Task Teams for focused, time-bound activities.

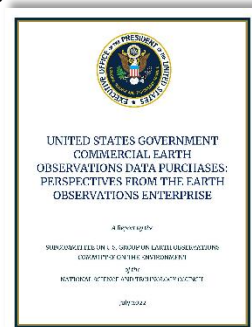
HIGHLIGHTS FROM 2022

The past year was a productive one for USGEO. All parts of the subcommittee were active and achieved significant advancements in furthering Earth observations.



USGEO continued its active outreach and engagement with the U.S. Earth Observations Enterprise (EOE or Enterprise). In July, the White House Office of Science and Technology Policy released the USGEO-developed report *United States Government Commercial Earth Observations Data Purchases: Perspectives from the Earth Observations Enterprise* through the National Science and Technology Council. This study examines Federal government approaches to acquiring and working with commercial Earth observation data to complement Federally

collected data. The study reflected perspectives from companies, intergovernmental organizations, academia, policy experts, and legal experts, and captured key challenges. The report examined how the Federal sector can coordinate activities as the private sector continues to transform and improve public-private collaborations, especially for small- and medium-sized companies. The report presents thirteen recommended practices for consideration. Link: [Commercial EO Purchases Report](#)



USGEO launched the Fourth cycle of its Federal agency Satellite Needs Process in 2022. This process provides non-weather-related satellite needs for NASA review to identify cost effective information products to provide to the community. In February, USGEO hosted a workshop of subject matter experts (SMEs) to review the Third cycle and collect information to refine the process for the Fourth cycle, which kicked off in June. From August to September, five Federal departments and two independent executive agencies submitted 117 inputs. NASA began its review and analysis of this information in September, with completion of the Fourth cycle expected by June 2023. Link: [Satellite Needs](#)

USGEO led U.S. participation in the 2022 AmeriGEO Week in Asuncion, Paraguay. Hosted by Agencia Espacial del Paraguay, this 8th AmeriGEO Week focused on the theme of *Human Migration in Focus: Earth Observations for Resilience and Equitable Development*. Many Latin American countries expressed interest in creating formal national GEOs for their countries, similar to the U.S.'s USGEO. Over 200 in-person attendees and many more online engaged across the multiple sessions and side events, including one on the Latin American and Caribbean Climate Assessment Initiative, which is a U.S.-led effort with USGEO and the U.S. Global Change Research Program. Link: [AmeriGEO 2022](#).



USGEO continued its engagement with the Earth observations community through organized events at major technical and scientific meetings. In January, USGEO organized a panel discussion at the 2022 American Meteorological Society (AMS) annual meeting. This panel on “Does More Data Equal More Use?” explored the use of

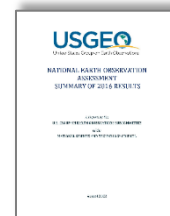
Earth Observation data and how it is changing as technology shifts and data stocks grow. USGEO repeated a similar discussion in February at the 2022 Ocean Sciences meeting. In December, USGEO held a town hall at the American Geophysical Union's (AGU) Fall meeting, fielding numerous questions covering *in situ* observations, the Initiative for Enhancing Capacity for Climate Risk Assessment and Catalyzing Partnerships to Inform Decisions in Latin America and the Caribbean (LACI), the Global Earth Observation System of Systems, and the next National Plan for Civil Earth Observations.

In March, a special task team of USGEO and the Interagency Council for Advancing Meteorological Services (ICAMS) completed a rapid assessment of wildland fire activities and the observing systems supporting them in the pre-, active, and post-fire phases. Drawing on interviews with 99 SMEs, the report *Observation and Information Shortfalls in Support of Wildland Fire and Related Activities* included 21 recommendations across multiple agencies to inform future agency planning.



The U.S. had a strong presence of public and private organizations as part of the GEO Week 2022 in Accra, Ghana. USGEO organized the U.S. Government's preparations and presence, including speakers in multiple sessions and side events, numerous interventions, and an exhibit booth, among many other activities. The week yielded Land Degradation Neutrality as a new GEO Flagship activity, best practices for National GEOs, and commitments toward an ecosystem extent product. The Democratic Republic of Congo joined as GEO's 114th Member Country. A strong presence by African representatives in science- and policy-oriented sessions strengthen the AfriGEO community of practice. Link: [GEO Week 2022](#)

In August, USGEO released a summary report on the results of the 2016 National Earth Observation Assessment (EOA). This EOA report provided a quantitative assessment of the relative reliance of Federal civil agencies on Earth observing systems for public services, products, and research. The Global Positioning System and the Landsat optical sensors were the two most impactful systems across the 13 societal benefit areas examined. Link: [Assessment Report](#)



Major activities initiated in 2022 and on-going in 2023 include:

- USGEO kicked off activities to develop a 2023 National Plan for Civil Earth Observations
- USGEO coordinated with the GEO Indigenous Alliance to begin development of a USGEO Tribal Engagement Strategy, including a workshop session at the 2022 National Adaptation Forum
- USGEO initiated the next EOA, with a focus on climate and agriculture, including forestry
- USGEO representatives engaged in the development of GEO's Post-2025 Strategic Plan, as well as leadership for the 2023 GEO Ministerial Summit

PRIMARY USGEO ACTIVITIES

As its over-arching activities, USGEO coordinates Federal Earth observation activities in cooperation with domestic stakeholders, fosters improved Earth system data management and interoperability, identifies high priority needs and uses for Earth observation data, and coordinates activities and engagement with the international community. Across all of these activities, USGEO engages with the Earth Observations Enterprise.

National Plan for Civil Earth Observations

USGEO continued efforts to lead the nation in implementing the 2019 National Plan for Civil Earth Observations. This National Plan included 3 Goals and supporting objectives along with 32 specific actions.

2019 National Plan Goals

1. Support & Balance the Portfolio of Earth Observations
2. Engage the Earth Observations Enterprise
3. Improve the Impact of Earth Observations

Commercial Task Team

A key development in 2022 involved the completion and release of a study examining Federal government approaches to commercial Earth Observations data. Addressing actions in Goals 1 and 2, this study – *United States Government Commercial Earth Observations Data Purchases: Perspectives from the Earth Observations Enterprise* – examined Federal government approaches to acquiring and working with commercial Earth observation data to complement Federally collected data. The study identified a range of challenges, such as accessing and sharing data, usage and license agreements, ground truthing, and coordination of data across agencies, organizations, and sectors. The report supported descriptions of how the Federal government uses commercial Earth observations data and articulated 13 recommended practices on topics including data acquisition, data sharing, licensing, and legal considerations.

The study gathered perspectives from companies, policy experts, and legal experts. The report contains information gathered via a Federal Request for Information, public listening sessions, and a tabletop exercise focused on fusion of commercial and government data sources. A USGEO Commercial Task Team involving 19 authors representing 10 Federal agencies conducted the study, engaging with 73 external participants to produce findings and recommendations.



Framework for Interagency Coordination

Fulfilling an action in Goal 1 of the National Plan, USGEO reached agreement on a framework and guiding principles to improve interagency coordination of Earth observation investment decisions. The framework specifically addressed what to do when a Federal agency is considering a major change in its Earth observation portfolio, such as the decommissioning of a system, change in the delivery from a system, or replacing public observational capabilities with commercial products. The framework also involves five steps to support coordination and provide a forum for discussion on the impacts of a loss of data, opportunities for collaboration on new data, and potential development of solutions and courses of action to mitigate the impacts or exploit the opportunities.

Impacts of Earth Observations

In 2022, USGEO representatives made significant progress in advancing efforts to characterize the benefits and impacts of Earth observations in decision-making. Multiple USGEO activities addressed Goal 3 of the 2019 National Plan (“improve the impact of Earth observations”):

Joint NASA, NOAA, and USGS Effort on Socioeconomic Assessments

Recognizing the importance of assessing the societal benefits of Earth observations, NASA and NOAA co-sponsored an \$8.5 million award focused on expanding the methodologies, literature, and the capacity for assessments of the socioeconomic value from Earth science information for real-world decisions and operations. USGS is a key collaborator in this activity and sponsor of the Earth Observations (EO) Societal Benefits Repository. USGS will host the outputs, materials, and results of the awarded activity in the repository. This effort will build an interdisciplinary and diverse network to develop and test new ways of valuing EO and their contributions to society alongside other forms of information, exploring different evaluation methods and different types of values, and will draw from areas of expertise such as impact assessment frameworks, macroeconomics, machine learning, behavioral psychology, and cultural anthropology.

USGEO National Civil Plan for Earth Observations and the Earth Observation Assessment

The three EO agency leads on the value of EO are also coordinating closely with other aspects of USGEO to ensure the upcoming National Civil Plan for Earth Observations and the Earth Observation Assessment meaningfully incorporate socioeconomic connections and impact-focused program decisions. Furthermore, they are encouraging USGEO leads in these topic areas to develop useful information for social, behavioral, and economic scientists and external decision makers. The agency leads are also coordinating with the [OSTP effort on Natural Capital Accounting](#) to identify how USGEO can support this activity.

GEOValue: an International Community with Focus on the Value and Socioeconomic Impacts of Geospatial Information for Decision-making

USGS, NOAA, and NASA also serve as members of [GEOValue](#), an international consortium also focused on valuing EO. GEOValue is organized under the international [Group on Earth Observations](#) (GEO) and is currently transitioning from a peripheral community activity to a foundational task within GEO’s Work Programme. GEOValue seeks to develop tools and advance the methodology and literature through which the value of EO can be demonstrated. GEOValue would like to align the valuation of EO within the experiences and interests of GEO community members. GEOValue has multiple ongoing activities to address these goals to better understand Earth observation societal benefits. The activities include:

GEO Repository for Societal Benefits of Earth Observations Literature

Understanding the need for a repository of literature related to the value of EO extends beyond the United States. USGS, NOAA, and NASA have organized the 2019 Civil Plan directives under GEOValue. The GEOValue community formed an interdisciplinary subgroup to:

1. Collect socioeconomic study metadata pertaining to author, institutional support, EO parameters, societal benefit areas, and economic approaches
2. Synthesize the state-of-knowledge on the economic value of EO, including return-on-investment, ability to accelerate innovation, and contributions to economic growth; and
3. Develop a catalog of ways to quantify the social and economic value of EO

USGS will host the repository on its interagency Human Dimensions ([HDgov](#)) website and is funding its software development. The GEOValue working group recently developed a beta version of the societal benefits repository and will have a public-facing website by September 2023.

Convening Two Conference Sessions Focused on the Value of EO

- 22nd *William T. Pecora Memorial Remote Sensing Symposium (Pecora 22)*. GEOValue members organized two panel sessions during [Pecora 22](#). The first panel, “Qualifying and Quantifying Earth Observation Value,” explored and highlighted the broad range of approaches and perspectives for measuring the socioeconomic impacts of EO through a diverse and inclusive interdisciplinary panel. This discussion combined traditional EO perspectives with those of Tribal communities to understand how EO can support decisions surrounding climate and environmental change, create sustainable development, and reduce the risk from natural disasters. The second panel, “Imagining Innovation: The Next 50 Years of Earth Observations - Value and Benefits,” was a round table of international agencies and providers of Earth observation data that brought their views on possible needs and innovations. This was envisioned through a broad lens of societal impacts to better understand the multiple aspects of the value of satellite EO data. The panelists discussed how the vision for the future of EO and EO science will serve people and society. The panel included EO agency executives from the Canadian Space Agency (CSA), European Space Agency (ESA), Japan Aerospace Exploration Agency (JAXA), NASA, NOAA, USGS, and Geoscience Australia (GA).
- *GEO Week*. GEOValue members also organized and hosted a side event during [GEO Week 2022](#). This GEOValue side event focused on exchanging views on the usefulness and value added by different types of impact assessments. The session provided the most recent works in GEOValue and offered an open discussion to learn how impact assessments could be developed for GEO activities at large and to understand and address the EO valuation gaps within GEO Work Programme activities.

2023 National Plan for Civil Earth Observations

USGEO kicked off efforts to develop the next National Plan with a projected release in 2023. Throughout the year, the USGEO leadership and membership discussed objectives for the next National Plan, reviewing and drawing lessons from the previous two National Plans released in 2014 and 2019. USGEO considered results of the Working Groups and *ad hoc* Task Teams, such as the Commercial Task Team’s report (see above) and a 2021 analysis of observing systems likely to be at risk in the near term.

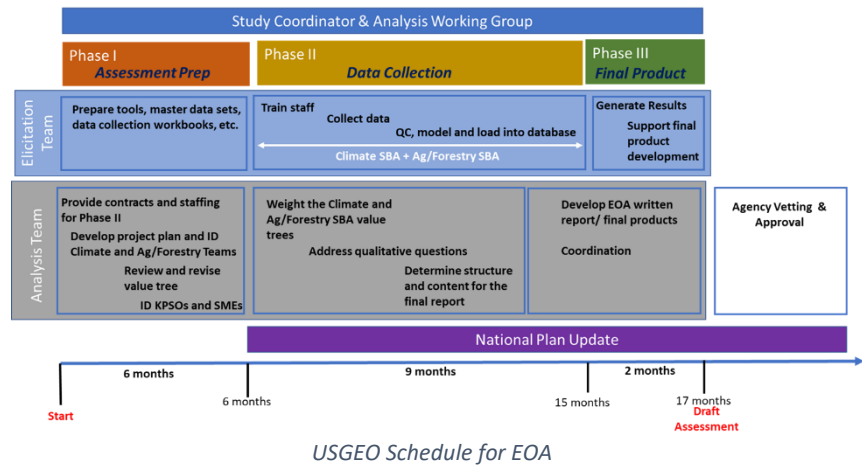
By the end of 2022, USGEO had charted a course for the National Plan’s approach and structure. Six meetings between June and December scoped the objectives and writing process, developed a first draft outline, and laid the groundwork for the development of targeted statements of work for the writing teams in early 2023. These meetings identified the importance of taking a thematic approach, pairing recommended actions with options for implementation, being in dialog with broader policy conversations, fostering connectivity across the entire Earth Observation Enterprise, targeting a 5-10 year time horizon, and adequately addressing concerns around equity, accessibility, and diversity. The Plan will provide recommendations for U.S. leadership to leverage Earth observations to address the range of challenges facing the nation and world through identifying priorities and enabling investments to meet Administration and societal goals. The majority of the activities begin in 2023.

Earth Observation Assessment

As part of its efforts to develop the next National Plan, USGEO initiated efforts for an Earth Observation Assessment (EOA). This EOA will be the third since 2013 to review the portfolio of civil Earth observing systems that support public services, products, and research, with the results supporting systems planning and priority setting. USGEO decided to focus this EOA on two societal benefit areas (SBAs) – Climate and Agriculture/Forestry.

USGEO determined that the EOA will include two parallel, interrelated paths to generate both quantitative and qualitative assessments. The EOA will assess the observing systems used to support delivery of information for public services and research and will assess the relative impacts of these systems across the EOE. Overall, the final product will include both an assessment of observing systems and datasets, and an evaluation of the entire value chain from sensor to societal benefit.

USGEO decided on a three-phased approach for this EOA. Phase 1, *Assessment Preparation*, includes defining the scope of the assessment, refreshing the value tree for the two SBAs, updating the Master Data Source List, establishing workflows, and recruiting and training the elicitation support staff. Phase 2, *Data Collection and Analysis*, involves the structured elicitation of data from SMEs about the use of Earth observations for climate or agriculture/forestry, weighting of the value tree, completing the qualitative assessment, and structuring the final report. Phase 3, *Final Product*, involves completing the quantitative assessment and delivering the report for review.



By the end of 2022, USGEO had largely completed Phase 1. USGEO formed the Agriculture/Forestry team, involving 32 people from 14 Federal agencies and led by Everett Hinkley/USFS and Melanie Vanderhoof/USGS. This team identified four primary “Sub-Areas”: Food Supply, Productivity and Conservation, Resilience, and Regulatory Requirements; each Sub-Area has 4-7 “Key Objectives” (KOs). USGEO formed the Climate team, involving 19 people from 6 Federal agencies and led by Jessica Snowden/NOAA, Adam Terando/USGS, and Stinger Guala/NASA. The Climate team identified four primary Sub-Areas: Climate System, Human and Natural Influences, Effects, and Societal Responses; each Sub-Area has 4-7 KOs.

Earth Observations Data and Information

Earth Observations Data Management in the Cloud

In 2022, USGEO examined the topic of Earth observations data management in a cloud environment. The USGEO Data Management Working Group led efforts to explore opportunities and challenges associated with data management in the cloud. The findings and recommendations of this work are in the process of being compiled in a summary report slated for release to the internal USGEO community (Federal agencies) in 2023. The working process entailed contacting subject matter experts from member agencies for content contributions, as well as sending out a Federal agency data call for review of, and additional contributions to, a mature draft of the report. Topics addressed by the report include cloud-optimized formats to enable rapid analysis, cost management mechanisms and data egress concerns, multi-cloud and cross-region challenges, and security.

Data Products

Throughout 2022, agencies used USGEO meetings as a forum to share information about substantial changes to Earth observations systems and data product availability. For example, USGS representatives reported on changes to the way USGS would handle data from the Sentinel-2 satellite constellation, which is part of the European Copernicus Programme. Given reprocessing plans for all Sentinel-2 data in 2023 and the availability of the data through other means, USGS announced it would cease to provide new Sentinel-2 data starting on October 1 and stop providing older Sentinel-2 data soon after.

In addition, NASA representatives shared information about the drift in mean local crossing times of the Terra, Aqua, and Aura satellites, affecting the nature of the data collections from the sensors on each satellite. Given the high use of data from these satellites, especially the Moderate Resolution Imaging Spectroradiometer (MODIS) sensor on Terra and Aqua, NASA informed USGEO about two workshops for community input for NASA's end-of-line planning for these satellites. One workshop in 2022 examined the drifting orbits for the opportunities and impacts created for research and applications. A second workshop planned for 2023 would address the continuity plans for data products from each satellite's sensors.

Earth Observations Priorities

Satellite Needs

USGEO oversees a biennial Satellite Needs Process (SNP) in which agencies identify priority needs for non-weather-related satellite data and information products and submit them to NASA. NASA assesses the inputs to identify cost-effective information products to provide the community.

In 2022, USGEO and NASA announced the results of the Third SNP cycle in 2020-2021. The Third SNP cycle led to ten priority needs, including:

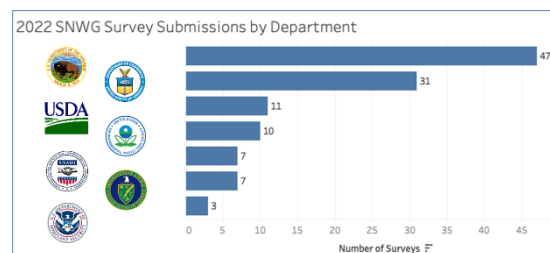
- Near-real-time air quality program from the upcoming Tropospheric Emissions: Monitoring of Pollution ([TEMPO](#)) mission
- Global Harmonized Landsat Sentinel-2 Derived Vegetation Indices Suite
- Expansion of Pandora air quality observations for more precise air quality forecasts
- Merged GNSS-RO/Atmospheric Sounder Measurements for Planetary Boundary Layer Products
- Production of 2m Digital Elevation Models products: Elevation Mosaic and Strip Products
- Addition of sea ice flag to existing sea surface salinity products
- Uplift to existing license with RapidEye for U.S. Government-wide access and distribution
- Uplift to existing license with PlanetScope for U.S. Government-wide access and distribution

- Access to hyperspectral products from the German Aerospace Center (DLR) Earth Sensing Imaging Spectrometer
- Improvements to NASA data search tools to discover and access both NASA and commercial data using the same search tool

More information about the Third SNP Cycle is available [here](#).

Led by Shaima Nasiri/DOE and Rick Mueller/USDA, the USGEO Satellite Needs Working Group (consisting of 25 member agencies) hosted a Subject Matter Expert Workshop in the interim between the Third and Fourth SNP cycles. This event featured experts who submitted inputs to the Third cycle to share their experiences and success stories and offer suggestions. The Working Group presented a summary of the Third cycle, and NASA representatives presented their review process and analysis of needs. Information from the workshop and discussions with experts supported design of the Fourth Cycle and the survey questionnaire.

The Fourth Cycle kicked off in August. From August to September, five Federal departments and two independent executive agencies submitted 117 inputs, which was consistent with the number of inputs in the Third Cycle. The number of inputs varied from 47 from one department to 3 from another. Approximately 77% of the inputs focused on applications-oriented decision-making activities, and 23% on research-oriented activities. NASA kicked off its SNP activities in September with a plan to complete its activities and deliver results and proposed solutions by the June 1, 2023 deadline.



Wildfires Assessment

In March, a special task team of USGEO and ICAMS members completed a rapid joint assessment of wildland fire activities and the observing systems supporting them in the pre-, active, and post-fire phases. The assessment team collected and synthesized information from SME interviews, publications and reports, and wildfires workshops. While the assessment centered on Federal users, many of the documents and the workshops included state and local perspectives. The assessment team interviewed 99 SMEs with an approximate split of 40% pre-fire, 40% active fire, and 20% post-fire phases.

The team developed a report entitled *Observation and Information Shortfalls in Support of Wildland Fire and Related Activities* to document findings and results. The team developed 21 recommendations, and the information supported agencies in their budget planning decisions. The recommendations addressed topics related to Observations Gaps, Data Continuity, Product Enhancements, Programmatics, New Collaborations, Research, and Systems Development.

International Leadership

In 2022, USGEO continued its strong leadership efforts on the international stage, particularly in coordinating efforts for U.S. engagement with GEO and AmeriGEO. For example, USGEO representatives continued their service on the GEO Programme Board. Some joined a GEO Executive Advisory Group, which looked at the recommendations of the GEO Mid-Term Evaluation, including re-examining approaches to the Group on Earth Observation System of Systems (GEOSS). Others joined the GEO Post-2025 Strategy Working Group to develop the next GEO Strategic Plan and the GEO Ministerial Working Group to organize the 2023 Ministerial Summit. The U.S. completed its one-year service as the Chair of the GEO Executive Committee. Overall, the U.S. was engaged in over 20 Flagships, Initiatives, and Community activities in the GEO Work Programme 2020-2022 and over 10 GEO Working Groups and Boards.

The International Activities Working Group organized a USGEO Workshop in April to align U.S. investments in GEO, addressing priorities, regional efforts, crosscutting activities, and the GEO Work Programme. The information helped prepare the U.S. representatives attending the GEO Symposium in May and U.S. contributions to the proposed GEO Work Programme 2023-2025.



USGEO led U.S. participation in the 2022 AmeriGEO Week in Asunción, Paraguay. Hosted by Agencia Espacial del Paraguay, this event focused on the theme of *Human Migration in Focus: Earth Observations for Resilience and Equitable Development*. Many Latin American countries expressed interest in creating a formal national GEO for their countries, similar to USGEO for the United States. Over 200 attendees in-person and many more online engaged across the multiple sessions and side events, including one on the Latin American and Caribbean Climate Assessment Initiative, which is a U.S.-led effort with USGEO and the U.S. Global Change Research Program.

The U.S. had a strong presence of public and private organizations as part of the GEO Week 2022 in Accra, Ghana. The official U.S. delegation included 30 people, and the U.S. Statement highlighted key advances in Earth observations, such as Landsat's 50th anniversary and the launches of the Joint Polar Satellite System-2 mission and the Surface Water and Ocean Topography mission together with France, Canada, and the United Kingdom. The U.S. Statement also highlighted USGEO's strengths, AmeriGEO coordination, and U.S. contributions to the GEO Work Programme, especially leadership of the GEO Health Community of Practice.



USGEO representatives engaged in multiple sessions and side events. For example, Nancy Searby/NASA moderated a side event on developing national GEOs. Angelica Gutierrez/NOAA presented on a Community-Based Flood Early Warning System in Malawi, showcasing that the service increased the warning time for floods from 3 hours to 15 days. USGEO also organized the U.S. exhibit, which focused on water activities across the national, regional, and global scales.

The 2022 GEO Week included the AfriGEO Symposium, a Youth Track, and an Industry Track. The membership approved the GEO Work Programme 2023-2025, and the week yielded Land Degradation Neutrality as a new GEO Flagship activity, best practices for National



GEOs, and commitments toward an ecosystem extent product. The GEO Plenary discussed the options provided by the Expert Advisory Group on the future of the GEOSS platform. The Democratic Republic of Congo joined as GEO's 114th Member Country. A strong presence by African representatives in science- and policy-oriented sessions strengthen the AfriGEO community of practice.

Earth Observations Enterprise Engagement

USGEO continued its engagement with the Earth observations community with organized events at major technical and scientific meetings. In January, USGEO organized a panel discussion at the 2022 American Meteorological Society (AMS) annual meeting. This panel on "*Does More Data Equal More Use?*" explored the use of Earth Observation data and how it is changing as technology shifts and data stocks grow. Additional presentations at AMS included one on the Satellite Needs Working Group and one on Developing NOAA Enterprise User Needs for the USGEO Satellite Needs Process. At the 2022 Ocean Sciences meeting in February, USGEO reprised the *More-Data-More-Use* panel.

In August, USGEO released a summary report on the results of the 2016 National Earth Observation Assessment. This EOA report provided a quantitative assessment of the relative reliance of Federal civil agencies on Earth observing systems for public services, products, and research. The Global Positioning System and the Landsat optical sensors were the two most impactful systems across the 13 societal benefit areas examined.

In December, USGEO held a town hall at the American Geophysical Union's (AGU) Fall meeting, fielding numerous questions covering *in situ* observations, LACI, the Global Earth Observation System of Systems, and the next National Plan for Civil Earth Observations.

LOOKING AHEAD

The USGEO committee looks to 2023 as a significant year to advance U.S. leadership in Earth observations, engage the Enterprise, coordinate plans, and expand uses of Earth observations to benefit the nation and the world.

The primary focus in 2023 will be the drafting and publication of the third National Plan for Civil Earth Observation (National Plan). After finalizing the scope and design, USGEO will identify and assemble writing teams, complete the draft Plan, and collect and integrate reviews, leading to final document release by the end of the calendar year. The process of developing the EOA will inform the messaging of the Plan. For the EOA, USGEO will finish elicitation design, conduct elicitations, collect results, and complete qualitative activities in 2023, with the final report expected in early 2024.

For the Fourth cycle of the Satellite Needs Process, NASA will complete its analysis of the agency inputs and present results and proposed information products to USGEO, OSTP, and OMB. In addition, USGEO expects to complete and release a report on Earth observation data management in the cloud.

Costa Rica is hosting the 2023 AmeriGEO Week in August. USGEO representatives will have a strong presence there to further advance coordination in the Americas. South Africa is hosting the 2023 GEO Week in Cape Town, including a Ministerial Summit. At this Summit, Ministers from GEO member countries around the world will review and endorse the Post-2025 GEO Strategic Plan. USGEO representatives will help craft the Post-2025 Strategic Plan, as well as serve on the USGEO Ministerial Summit Working Group to shape the agenda and objectives of GEO Week 2023 and associated Plenary and Ministerial events. USGEO will host a booth in the exhibition hall to showcase USGEO domestic and international partnership activities and successes.

USGEO will continue its Enterprise engagement efforts. For example, at the AMS Annual Meeting in January, USGEO will conduct a panel *Reflecting on Two Decades of Earth Observation Advancements: Informing the Future of Civil Earth Observations for the U.S. Weather, Water, and Climate Enterprise*. USGEO will also look to increase engagement with the Earth Science Information Partners (ESIP) Federation and with tribal organizations, further developing its Tribal Engagement Strategy.

Throughout all its activities, USGEO will continue devoting focused attention to, and supporting emerging efforts on, diversity, equity, and inclusion, including advancing efforts within the communities with which we engage.