

Leveraging Geospatial Infrastructure for Climate Actions

UN WGIC
Hyderabad

Dean Angelides, Corporate Director

Our World Has Many Challenges

Humans Are Living Recklessly . . .

. . . Out of Balance with Nature

Creating Conflicts and Instability



The Central Problem of Our Time

Lack of *Understanding* . . .
and Failure to *Collaborate* . . .

We Must Address This Problem
. . . ***Urgently***



Mapping

. . . and The Geographic Approach

Are Powerful Means for . . .

Creating Understanding . . .

Exploring Alternatives . . .

Finding Solutions . . .

and Reaching Agreement



Mapping Common Ground Requires We Consider All the Factors



The Geographic Approach

A Way of Thinking and Problem Solving
That Integrates Geographic Science & Information

An Inclusive and
Multidisciplinary Process

Holistic

Collaborative

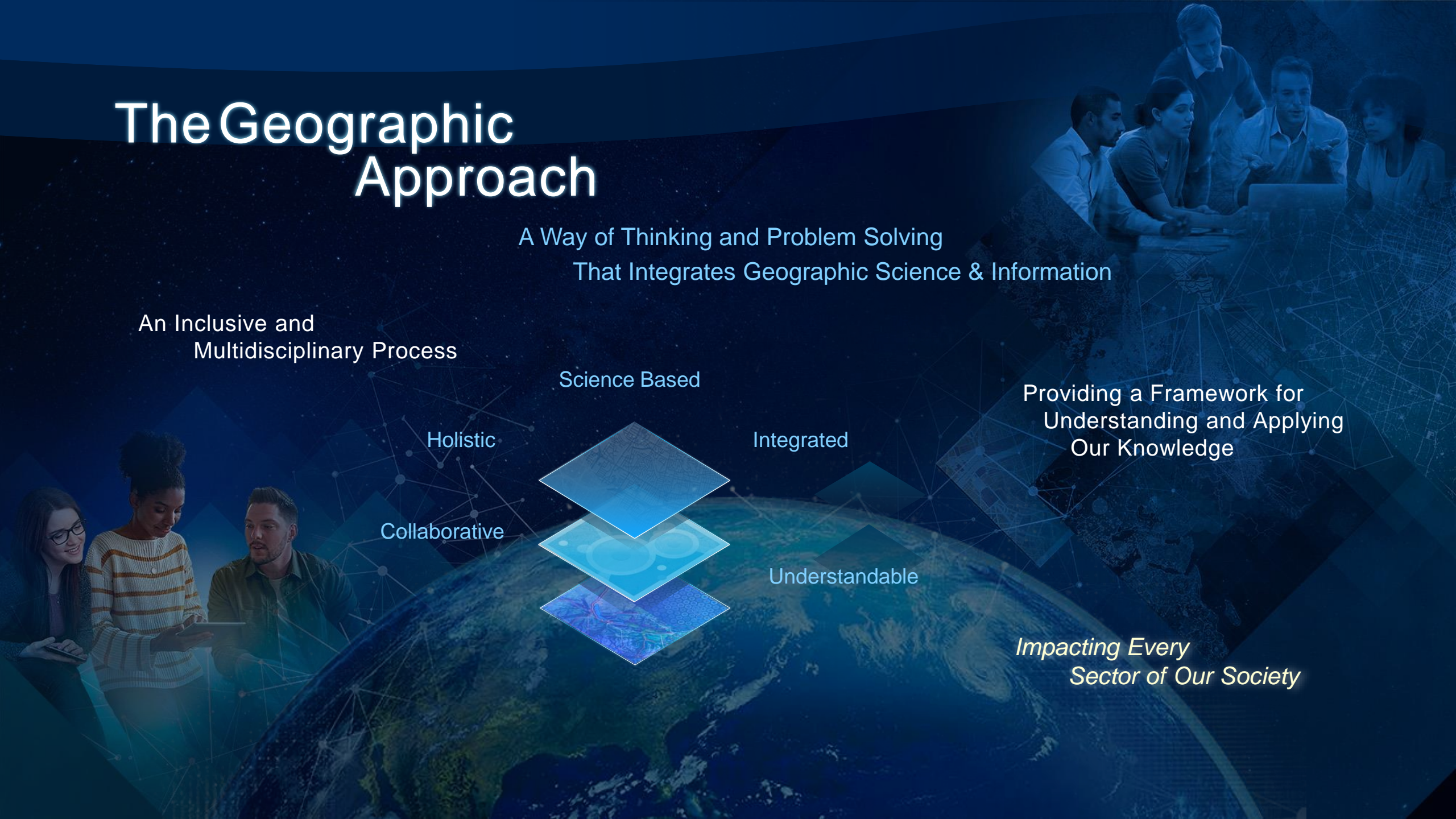
Science Based

Integrated

Understandable

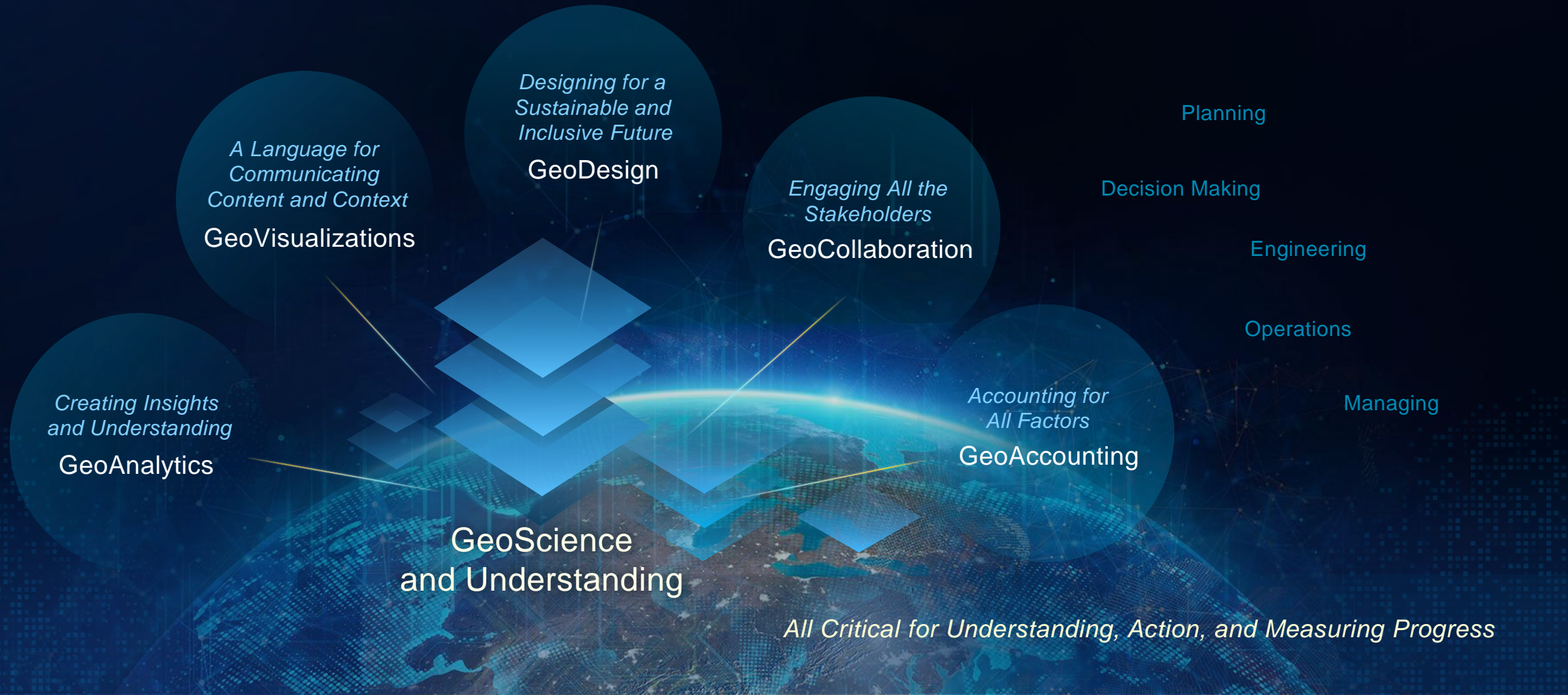
Providing a Framework for
Understanding and Applying
Our Knowledge

*Impacting Every
Sector of Our Society*



The Geographic Approach

Integrates and Supports Powerful Methodologies



Geospatial Professionals Are Already Mapping Common Ground

Mapping All the Factors

Creating Understanding . . .

Facilitating Collaboration . . .

Reducing Violence

Prioritizing Investment

Conservation Planning

Applying Science

Finding Equitable Outcomes

Addressing Drug Addiction

Organizing Communities

Planning for Sustainability

Community Planning

Resolving Conflicts

Environmental Assessment

Helping Homeless

Siting Renewable Energy

Managing Resources

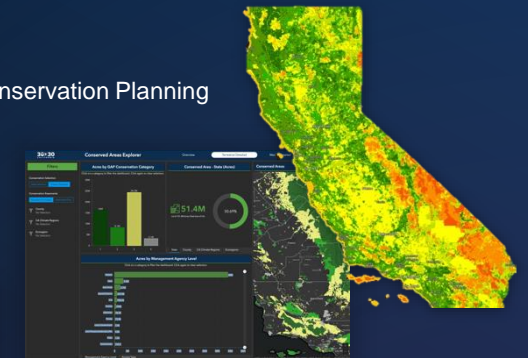
UN Global Sustainable Development Goals (SDGs)



Community Planning



Conservation Planning



Addressing Homelessness



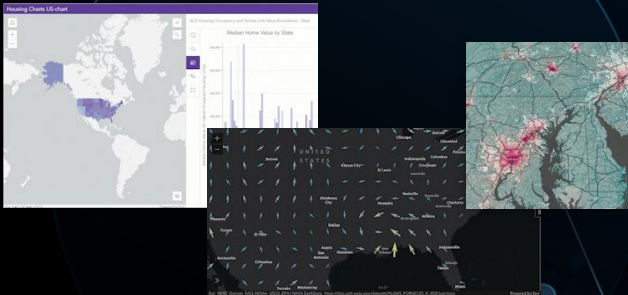
Leveraging GIS Technology
At Many Scales . . .

GIS Innovations

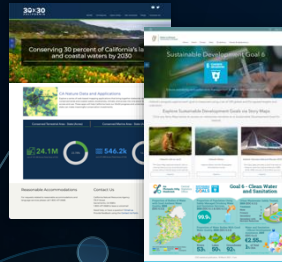
Are Advancing Our Collective Ability

To Understand, Communicate and Create Solutions . . .

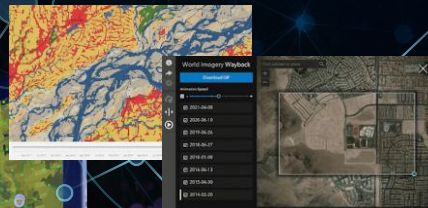
Interactive &
Real-Time Maps



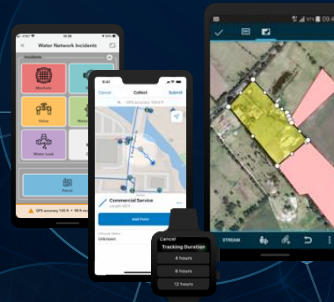
GeoCollaboration Hubs



Imagery & Remote
Sensing



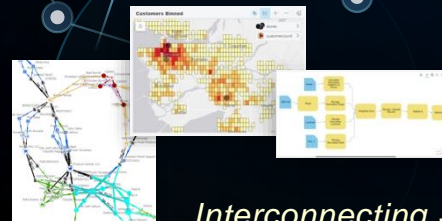
Pervasive &
Connected Apps



3D Visualization



Analytics



Geodesign



Reporting &
Storytelling



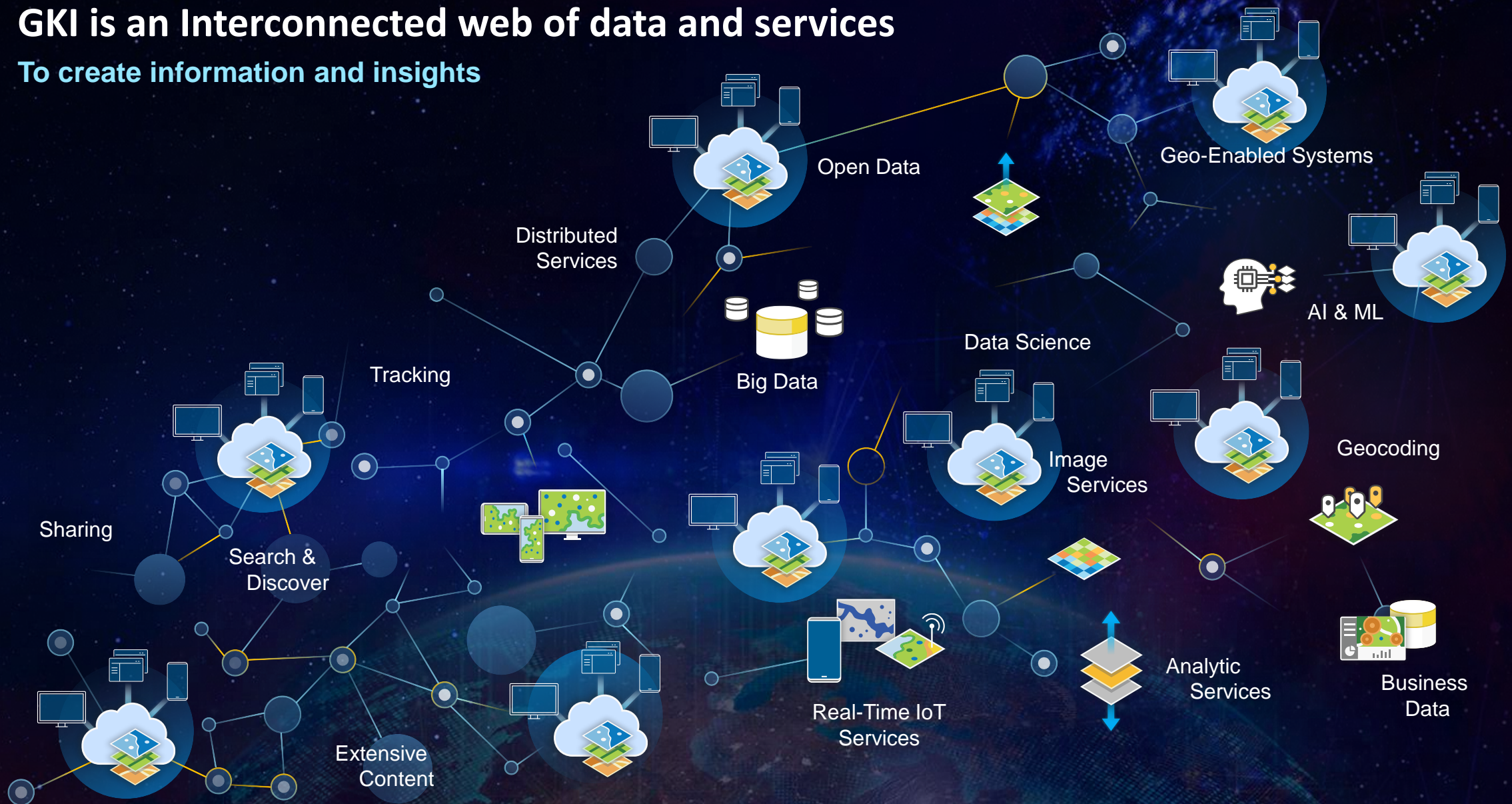
Cloud Computing



Interconnecting Systems – Enabling Geospatial Infrastructure
Opening Up and Extending the Application of GIS

GKI is an Interconnected web of data and services

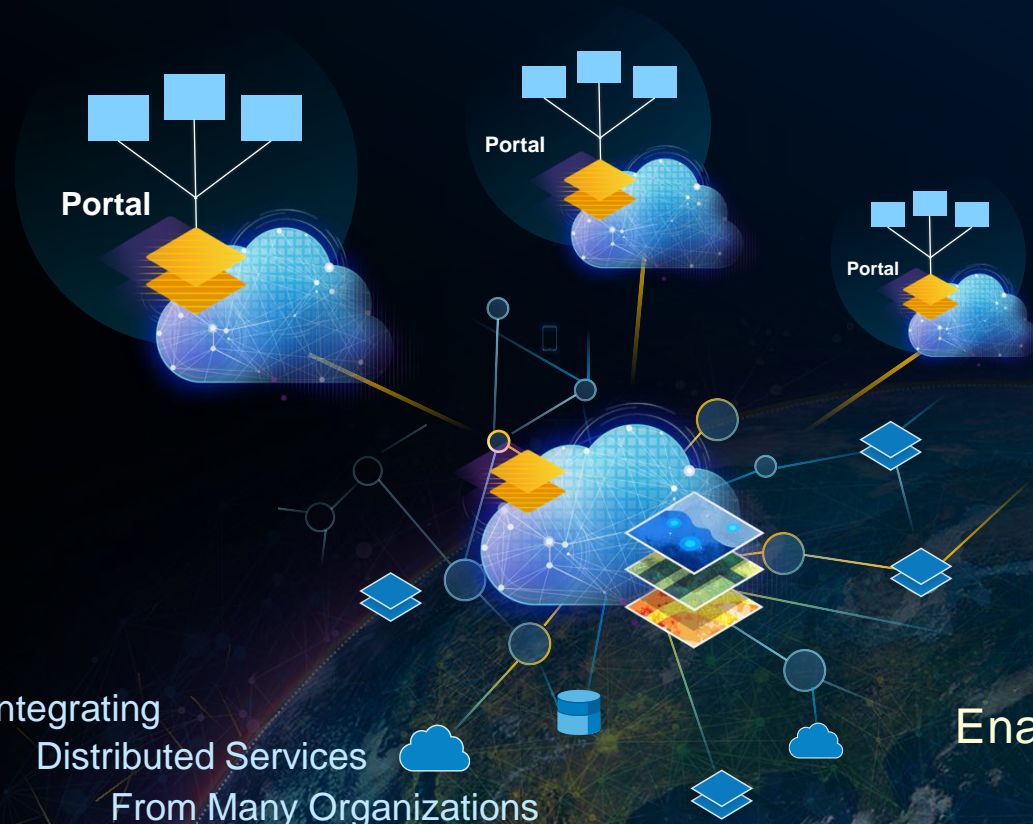
To create information and insights



GIS Portals Are a Key Aspect of Geospatial Infrastructure

Organizing and Making Available Content and Capabilities

Supporting Multiple
Communities & Initiatives



Integrating
Distributed Services
From Many Organizations



Enabling Dynamic Integration and Collaboration . . .
Transforming Organizations

Geospatial Professionals Are Creating Geospatial Infrastructure . . .

A Growing Network of Distributed Shared Services

Millions of Users

Sharing 10s of Millions of Datasets

Serving Billions of Maps Daily

Reaching Billions of People . . .
. . . with Stories About Our World

*Enabling . . .
Shared Understanding,
Collaboration and Efficient Action*





Leveraging GKI for Climate Action





Addressing Climate Change

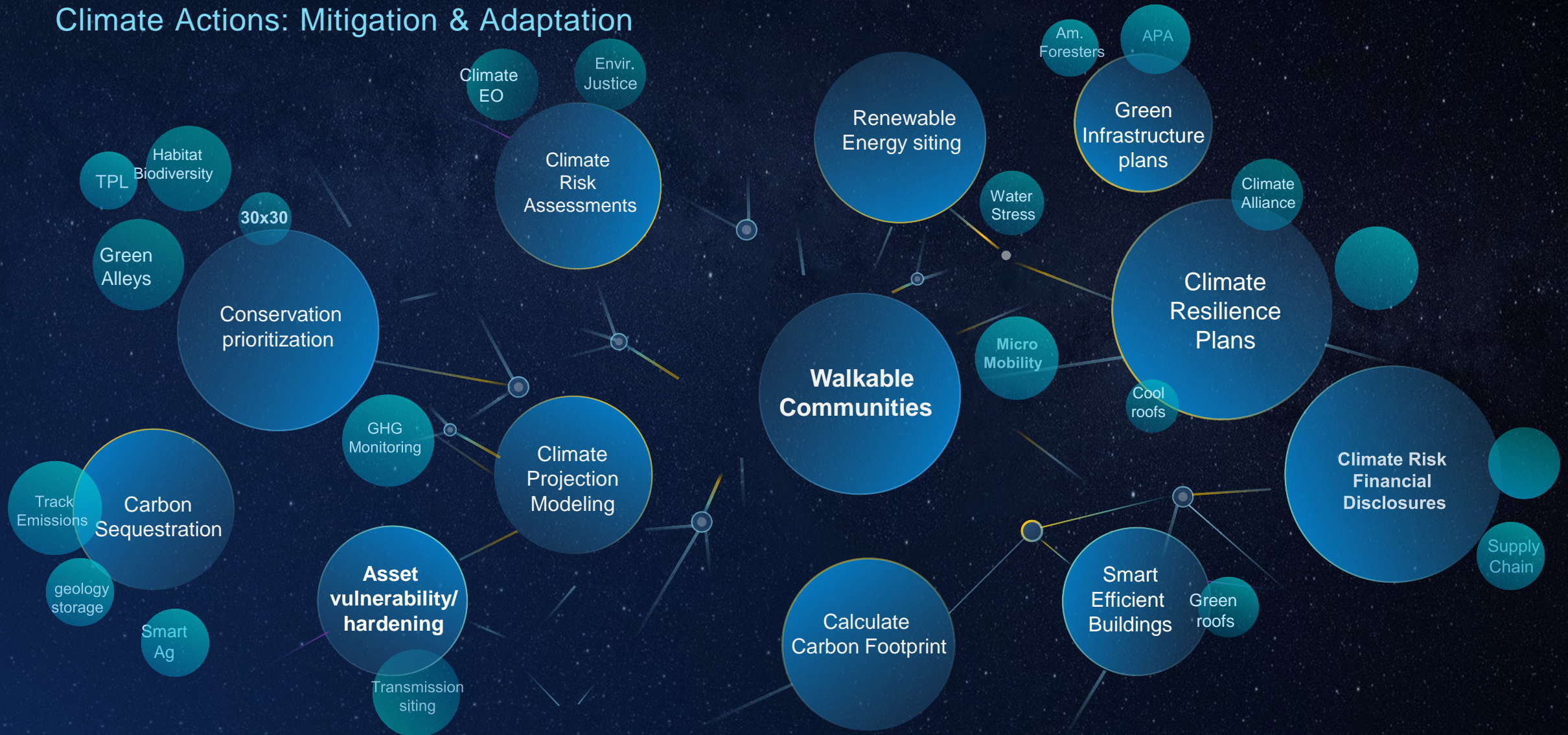
Cuts Across All Sectors,

Impacts All Regions

**...But Requires
Understandable Data and
Shared Knowledge**

GIS Has Been Proven Effective Against Environmental Challenges . . .

Climate Actions: Mitigation & Adaptation



GKI is key in the fight of climate crisis

Gaining Participation from all Sectors

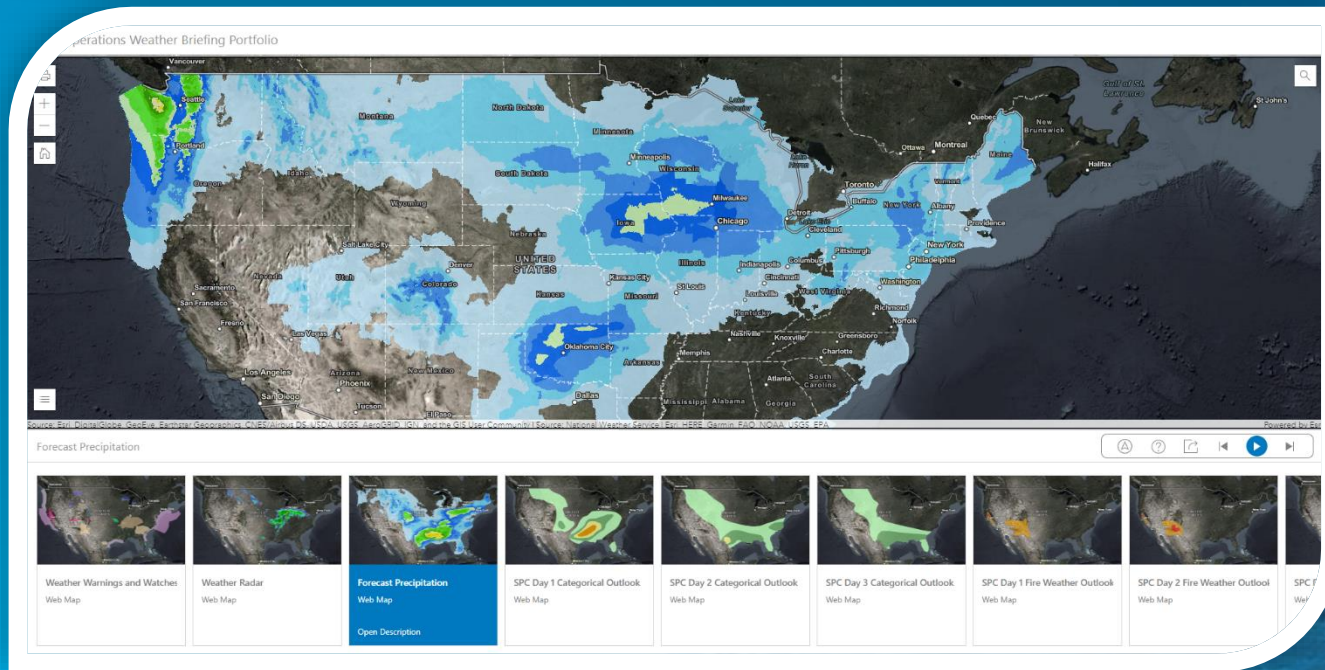


Supporting a Whole of Society Approach to Combating Climate Crisis

Adding Context and Usability to Scientific Data

Scaling use through Easy Access, Education and Raising Awareness

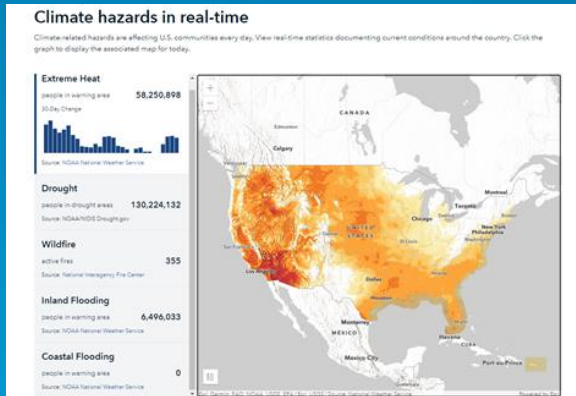
Openly Accessible Live Feeds of Weather Data



Scaling Impact: Education with Climate Data

The screenshot shows the 'Climate Change in the UK' teaching resource page. The page features the logos for 'esri UK' and 'Met Office'. The title 'Climate Change in the UK' is prominently displayed, followed by the subtitle 'A detailed look at climate change in the UK created in partnership with the Met Office'. Below the title, there is a section titled 'Teaching Resources' with the text 'Everything you need to help your learners explore the current climate of the UK, how it could change over the course of the 21st century and the impact it will have on our lives in the UK.' The page includes three images: a landscape with trees, an industrial facility with smokestacks, and a large fire. Below these images, the section 'Climate Change, Impact & Adaptation' is highlighted, with the text 'Explore the impacts that climate change will have on our lives in the UK.' At the bottom, there are three more images: a wildfire, flooding, and agriculture.

Climate Mapping for Resilience & Adaptation



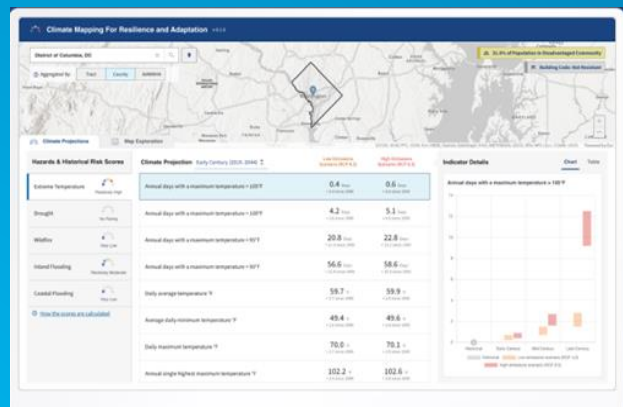
Climate Hazard Dashboards



Resilience.climate.gov



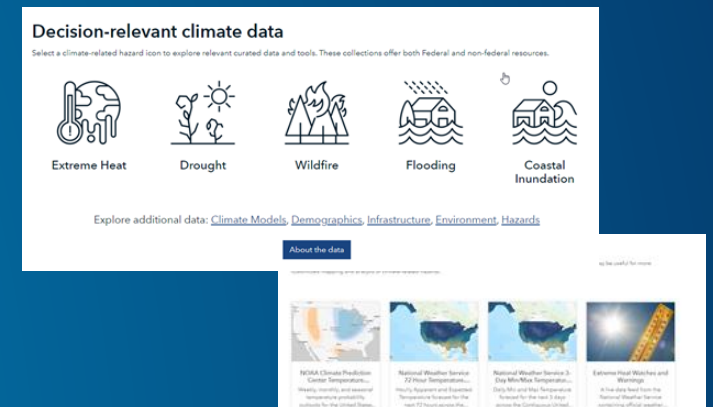
Climate Resilience Policy



Climate Assessment tool



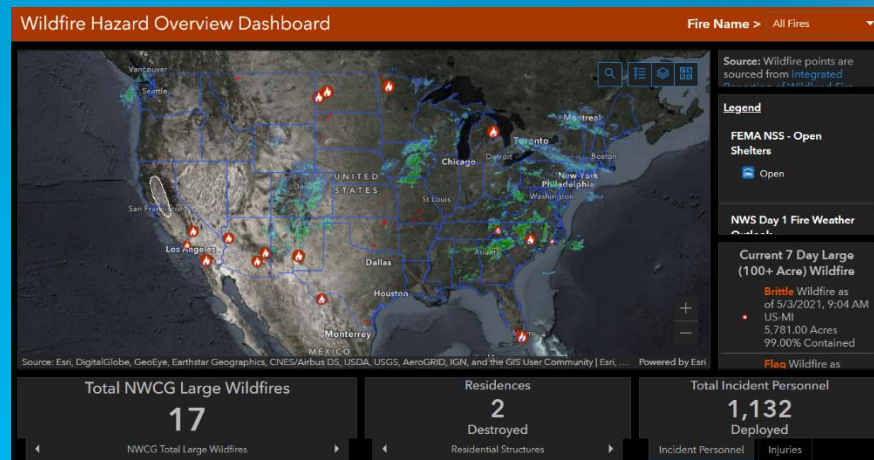
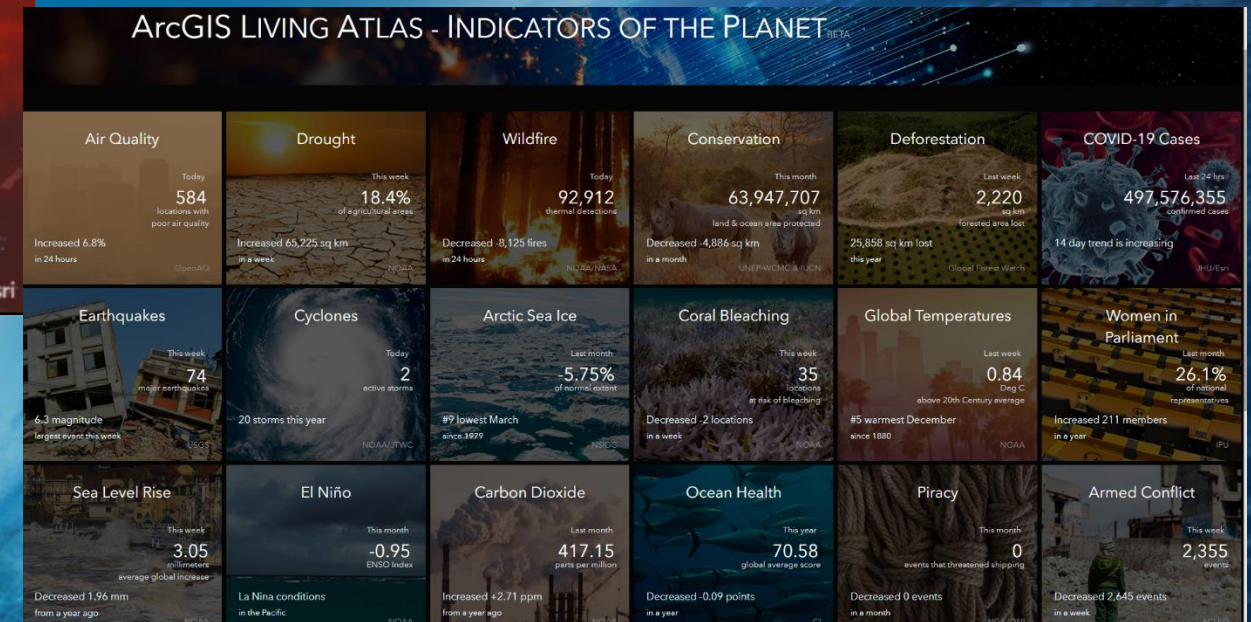
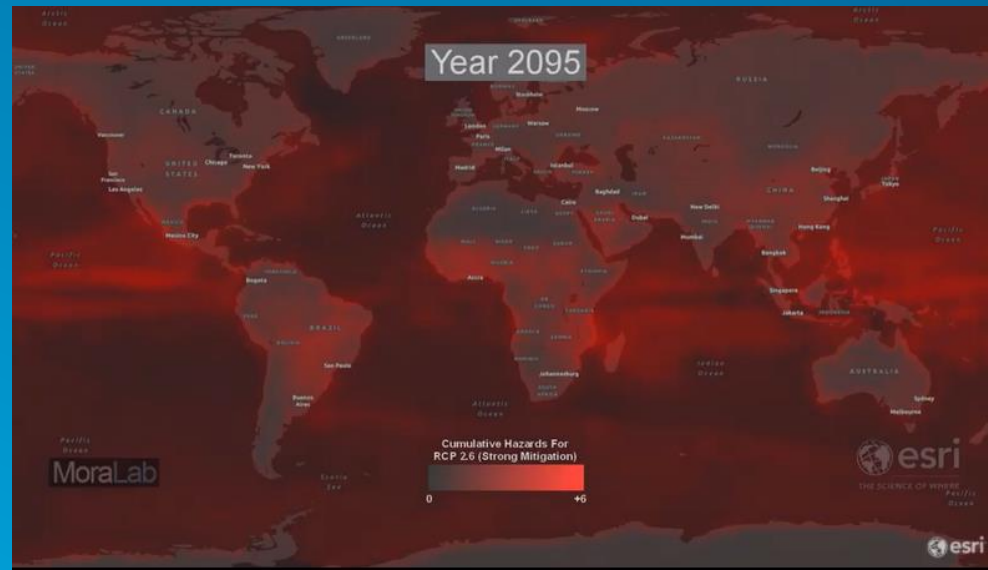
Climate Hazard Info



Open Data


Smart Maps & Dashboards Show Executives the Impact of Climate Change

Demonstrating the impact of climate change is essential to bring in businesses and private sector




Policies Motivate Climate Action Around the Globe

There is a Societal shift in climate change awareness requiring action in Mitigation & Adaptation

Menu


IPCC Sixth Assessment Report
Impacts, Adaptation and Vulnerability

ipcc



Climate Change 2022: Impacts, Adaptation and Vulnerability


The Working Group II contribution to the IPCC Sixth Assessment Report assesses the impacts of climate change, looking at ecosystems, biodiversity, and human communities at global and regional levels, and the natural world and human systems.

European Commission

Home > Strategy > Priorities 2019-2024 > A European Green Deal

A European Green Deal

Striving to be the first climate-neutral continent


THE WHITE HOUSE

MENU


BRIEFING ROOM

Executive Order on Tackling the Climate Crisis at Home and Abroad

JANUARY 27, 2021 • PRESIDENTIAL ACTIONS



No Return to Normal: Climate Change and the Threat of a Global Humanitarian Crisis

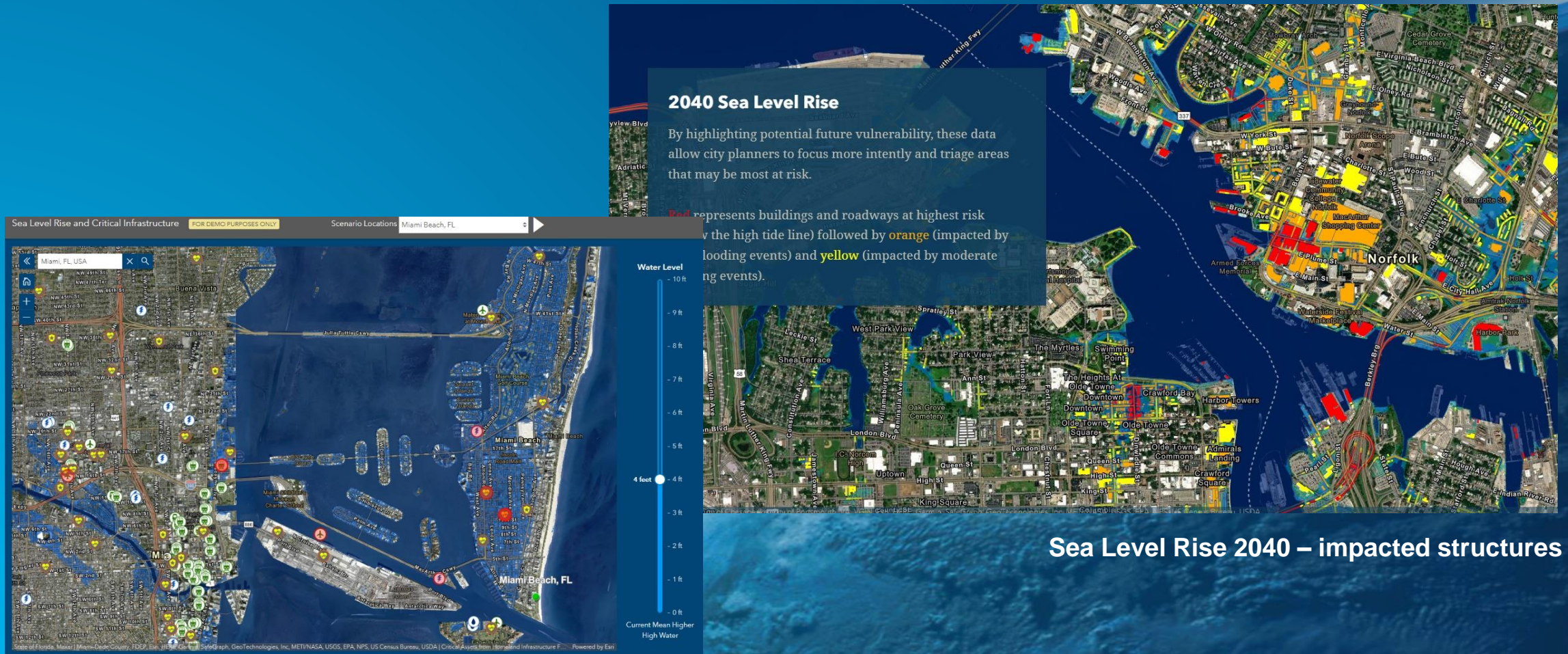


CLIMATE CHANGE IN AUSTRALIA

Climate information,

Global Modeling and Predictions Inform Local Actions

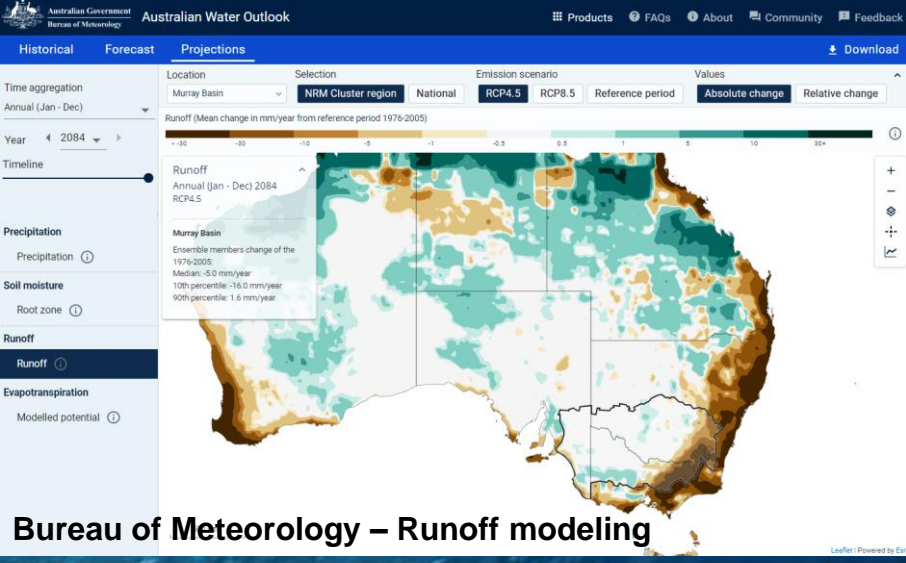
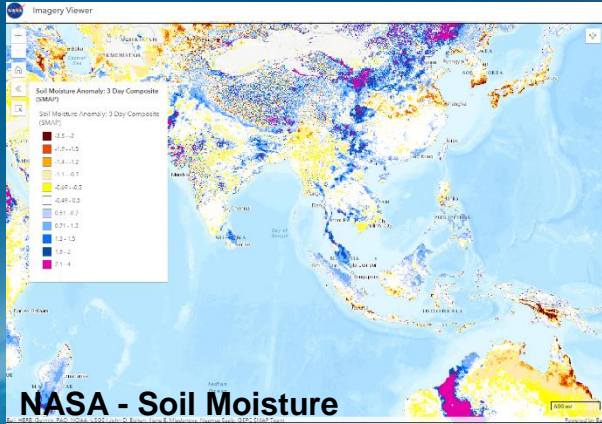
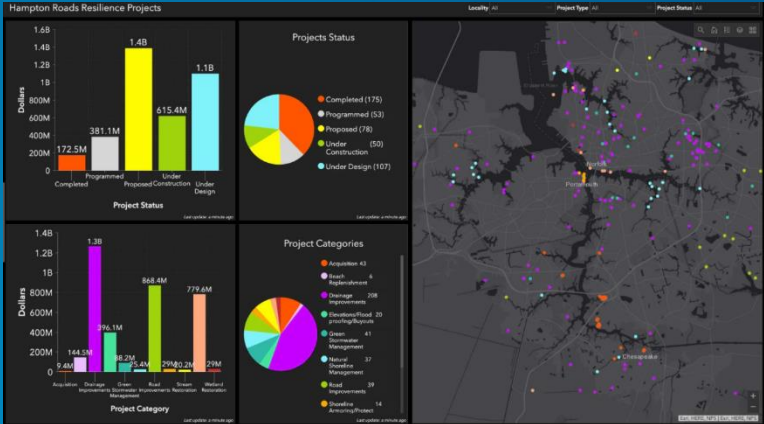
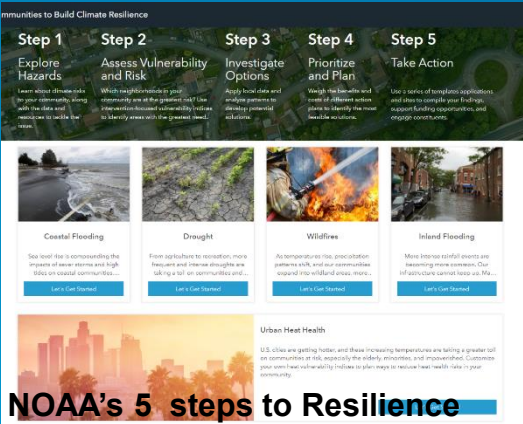
Visualization tools expose vulnerable buildings and infrastructure



Adjustable Sea Level Rise Viewer

Communities Prioritize Climate Resilience ...

... to Better Deliver Services, Protect Community & Lure Businesses



Supporting Renewable Energy and Infrastructure Investments

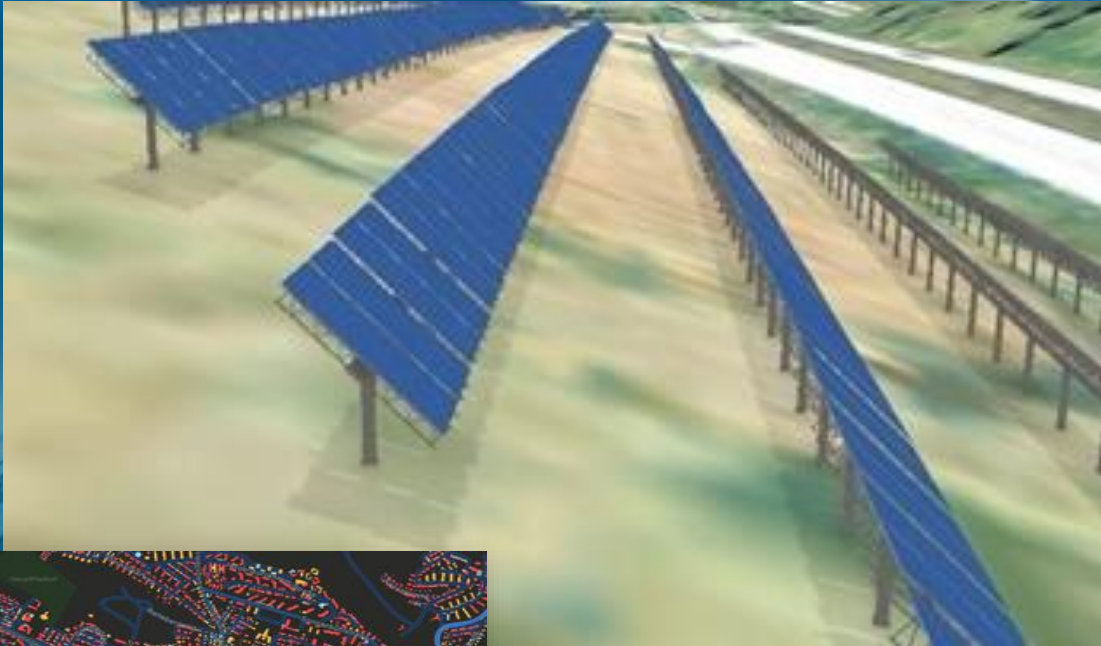
Using Location Intelligence to Drive a Tailored Approach

Monitoring
Wind Generation



Aegean Energy
Group
North America

Designing Solar in
Highway Right-of-Way



The Ray
Iowa

Community-Led Clean Energy
Projects

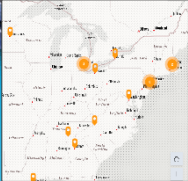


Clean Energy
States Alliance
US

Urban Solar Potential



BARAL Geohaus-Consulting
Constance, Germany



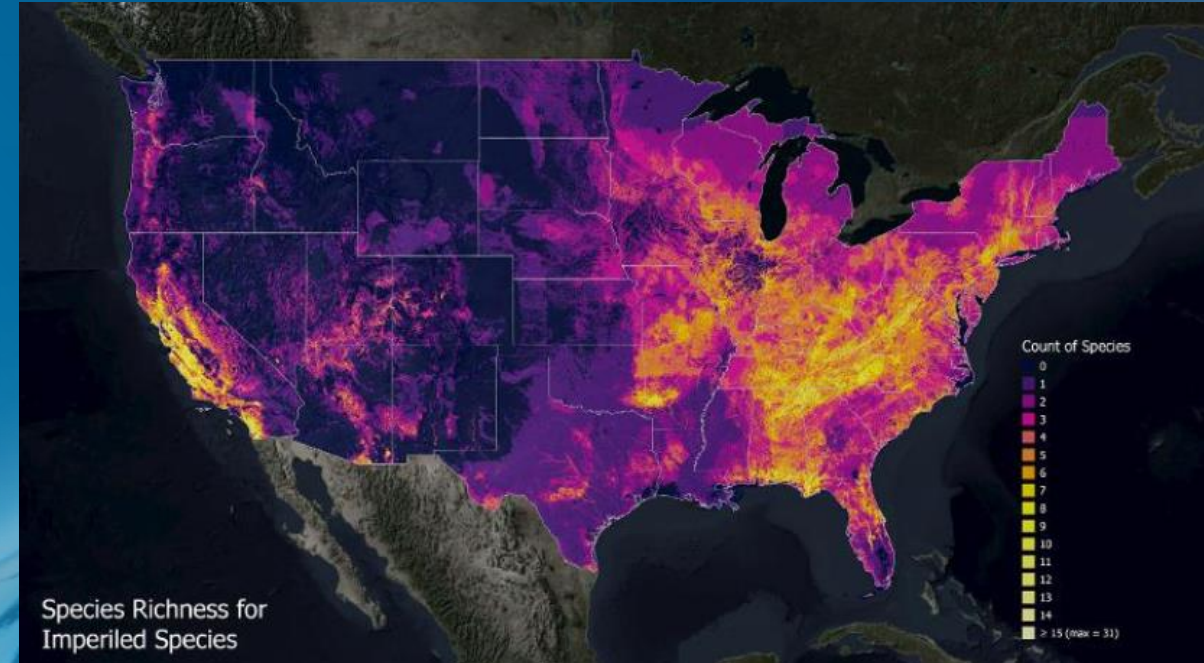
Preserving Critical Green Space and Protecting at-risk Species

A world map illustrating the distribution of 1000 species of plants and animals. The map is color-coded to show the range of each species: green for widespread species, yellow for species with a more limited range, and red for species with a very limited range. The map also shows major geographical features like oceans, seas, and basins, and labels for various countries and regions.

California 30 by 30 Efforts

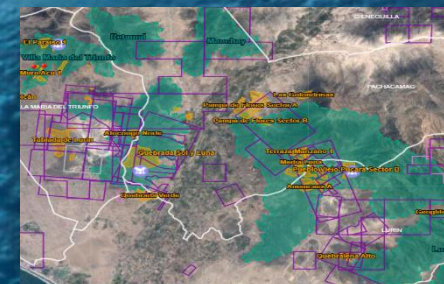


**California Natural
Resources Agency**



Species Richness for Imperiled Species

Ecosystem Conservation



PNUD
Lima, Peru

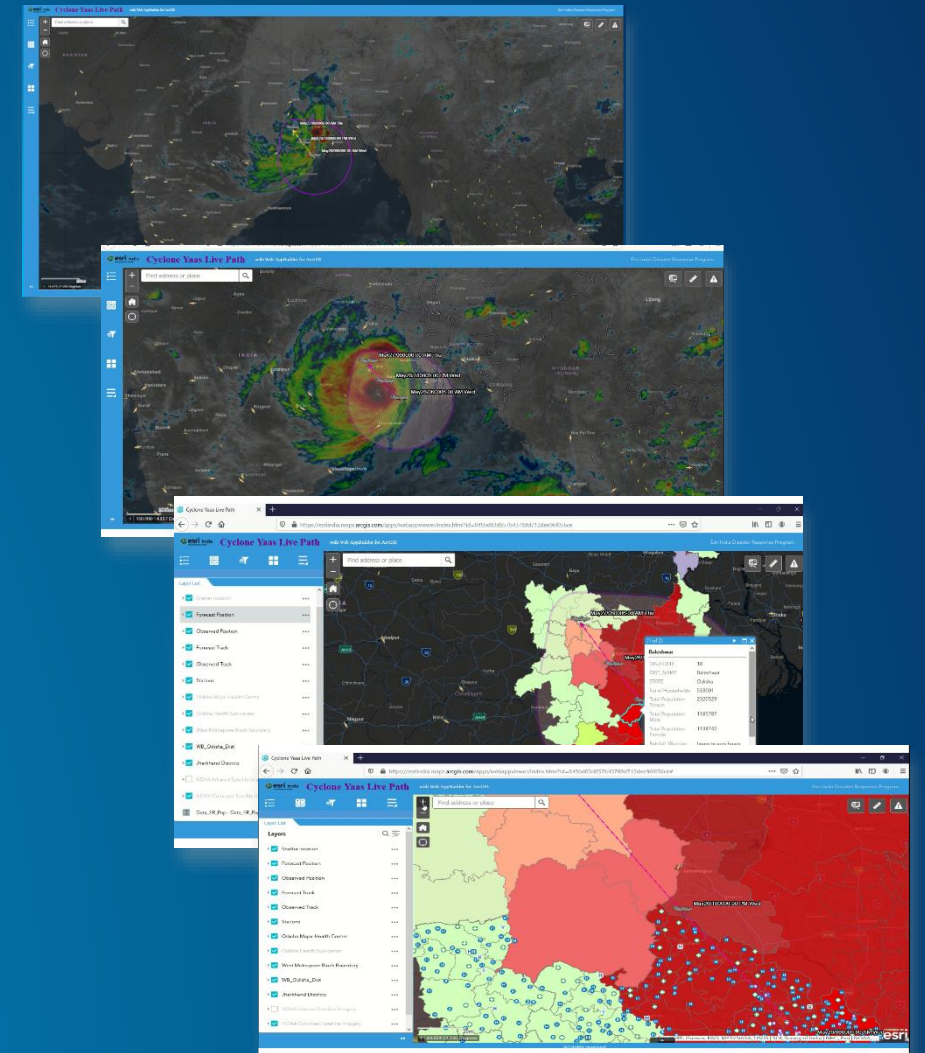
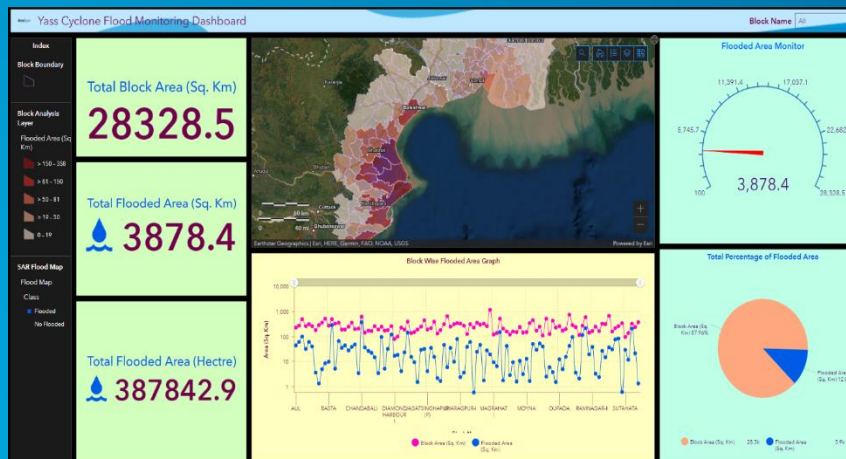
Esri India's Cyclone Yaas Live Path – GIS Based Web Map for Citizens

Cyclonic Storm Yaas - a relatively strong & very damaging tropical cyclone.
Made landfall in Odisha (India) and brought significant impacts to states in Eastern Part of India in May 2021

Multiple Data Sets: Forecast Position, Wind Stations, Weather and Wind Stations, Observed Track, Tropical Storm Force, State Administrative Data, Demographic Datasets

Used for Readiness: Integrated view on the movement and impact of Cyclone Yaas. Used extensively by citizens and agencies for readiness in most affected areas, evacuation planning, shelters, and rehabilitation plans for a timely action for the safety of life and property.

Impact of Map: Over 200k views within 2 days of the launch of this Web Map



Geospatial Professionals

Have Important Responsibilities . . .

Facilitating the Creation of Common Ground

Seeing What's Needed and Wanted

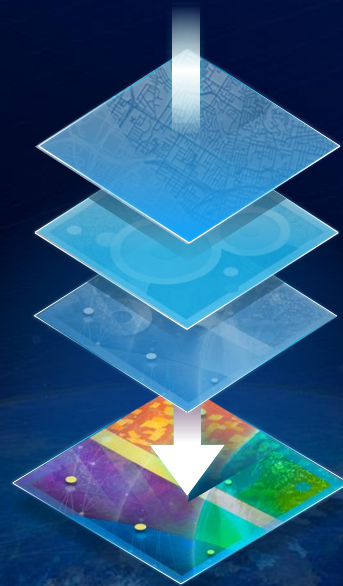
Supporting
Community Engagement
and Collaboration

Connecting Data & Science to
Decision Making

Enabling Holistic Approaches

Maintaining the Public Trust

Listening, Understanding, Resolving Conflict and Creating Solutions





esri

THE
SCIENCE
OF
WHERE