AI for Earth

Azure Award Grantees

ABOUT

The Microsoft AI for Earth program makes advanced Microsoft Azure cloud computing resources and powerful AI tools, as well as AI expertise and training, to individuals and organizations working on environmental and conservation programs aimed towards transforming the way we are currently managing complex environmental challenges.

These awards are intended to drive exploration and discovery by providing innovative data science, spatial analysis, and visualization tools to organizations that are focused on finding solutions to climate change, loss of biodiversity, agricultural cost and yield, and increased water scarcity. Learn more about environmental sustainability at Microsoft.
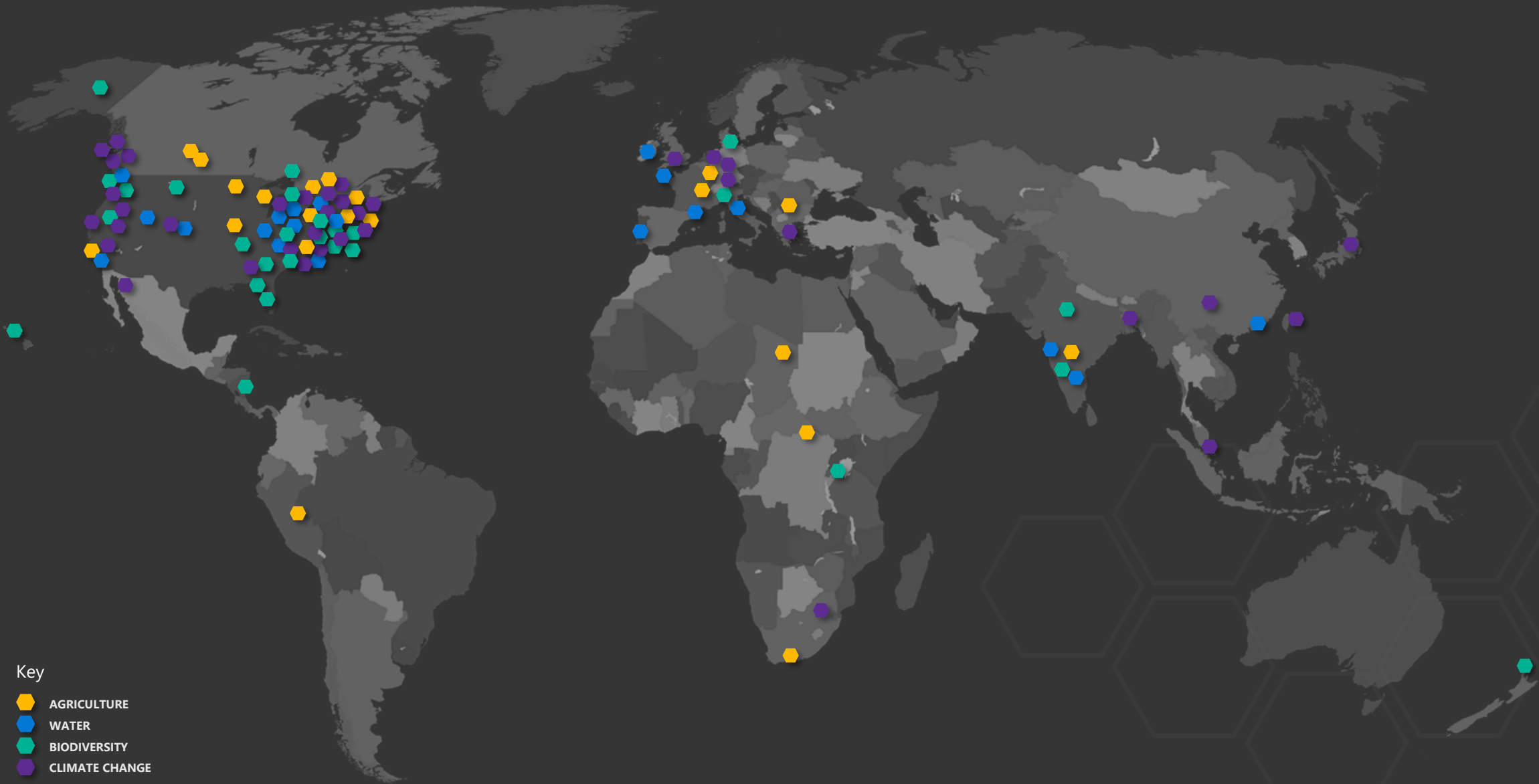
TO DATE AI FOR EARTH HAS:

Awarded more than 111 grants to individuals and organizations in 27 countries.

AI for Earth

Azure Award Grantees

Aalborg University (Denmark)
High-resolution spatialized population projections.
Climate Change

Aker Technologies Inc. (US)
AI for Earth/Esri
Agriculture

ATREE (India)
Bioresources ATLAS of northeast India.
Biodiversity

Audubon Society (US)
Using cloud-based, high-throughput image classification solutions to conserve biodiversity in response to extreme weather events and rapid landscape change.
Biodiversity

Binghamton University (US)
Wetland mapping and monitoring using geospatial big data and deep learning.
Water

Boston University
Cloud-based urban climate action planning.
Climate Change

Brigham Young University (US)
Improved streamflow forecasting service for flood and drought prediction at a local and global scale.
Water

Brown University (US)
Assessing surface water sensitivity to permafrost extent using CubeSat imagery and machine learning.
Climate Change

Carnegie Mellon University (US)
Improving patrol strategy to combat poaching using deep reinforcement learning.
Biodiversity

Carnegie Mellon University (US)
Vehicle counting with deep convolutional neural networks for sustainable freight transportation.
Biodiversity

CEDO Intercultural (Mexico)
Climate change communications in the Gulf of California, Mexico.
Climate Change

Center of Safety Excellence gGmbh
ARTEM: An Advanced Reactor and Storage Tank Emission Model.
Climate Change

Centro Alexander Von Humboldt (Nicaragua)
Forest monitoring platform of deforestation in two forest districts of Nicaragua.
Biodiversity

Cetaqua (Spain)
A prescriptive analytics approach for orchestrating agricultural, urban and industrial uses of water from watersheds.
Water

Chinese Academy of Science, Kunming Institute of Technology (China)
Simulation to curb climate change in a collectivist society.
Climate Change

City University of Hong Kong
Benthic habitat imaging and mapping for exploring and monitoring mesophotic coral ecosystem in Pearl River Delta
Water

Claremont Graduate University (US)
Deep learning for early detection, identification, and mapping of cassava diseases using multispectral aerial imagery.
Agriculture

Columbia University (US)
Keeping a close watch on our trees: large-scale forest ecological surveys via a data science workflow using high-resolution imaging and remote sensing data.
Biodiversity

Columbia University (US)
Real time earth
Climate Change

Columbia University (US)
What if they fail? AI to assess the hazard of aging dams and levees
Water

Conservation Science Partners (US)
Forest disturbance detection and hydrologic response in the western United States.
Climate Change

Cornell University (US)
Artificial intelligence driven yield and crop cover forecasting utilizing real-time precision agriculture data.
Agriculture

Deltares (Netherlands)
A climatology-based approach for landslide identification and generation of hazard maps.
Climate Change

Duke University (US)
Developing cloud-based workflows for mapping and censusing seabird breeding colonies at scale with Unmanned Aircraft Systems and machine learning.
Biodiversity

Duke University (US)
Modeling below ground biomass for carbon sequestration applications.
Climate Change

EcoHealth Alliance (US)
Identifying and mitigating global pathogen risks posed to humans, animals, and ecosystems.
Biodiversity

EcoHealth Alliance (US)
Improving understanding of global pathogen biodiversity and distribution using text analytics and natural language processing.
Biodiversity

ETH- Zurich (Switzerland)
Fighting deforestation with deep learning and smart contracts.
Biodiversity

Florida Agricultural (US) and Mechanical University
An integrative cloud and AI-based strategy for collaborative, multiscale resource management.
Biodiversity

Fraunhofer Society for the Advancement
SynErgie
Climate Change

Georgia Institute of Technology (US)
Deep learning for fine-scale population maps.
Climate Change

Georgia Institute of Technology (US)
Supporting conservation planning using mathematical optimization.
Biodiversity

Ghent University (Belgium)
Applying ML and AI to ultimately turn agricultural data into automated animal health and welfare monitoring tools.
Agriculture

Global Environment and Technology Foundation (US)
Machine Learning for Improved Water Services.
Water

Harvard University (US)
Assessing the potential for climate change and forest insects to drive land-use regime shifts.
Biodiversity

ICDDRB (Bangladesh)
Climate-change driven Cholera early warning system.
Climate Change

IMT Atlantique
Bridging physically-driven and data-driven schemes for the identification, forecasting, and reconstruction of ocean dynamics.
Water

Indian Institute of Science (India)
Scalable analytics for equitable water distribution in mega cities.
Water

Indiana University-Purdue University Fort Wayne (US)
A real-time water body monitoring system.
Water

Indraprastha Institute of Information Technology (India)
Intelligent tool for monitoring monkey population.
Biodiversity

International Center for Tropical Agriculture (Uganda)
Enhancing food and nutrition resilience in Africa through a Nutrition Early Warning System (NEWS).
Agriculture

International Crops Research Institute for the Semi-Arid Tropics (India)
Plant pest prediction models and farm advisory.
Agriculture

Jane Goodall Institute
Using the power of Azure cloud to identify chimpanzee habitat connectivity and conservation priorities in Africa.
Biodiversity

Lakehead University (Canada)
Development of a forest resource inventory by utilizing deep learning for automated tree species identification, stand delineation and land classification.
Biodiversity

Long Live the Kings (US)
Water, climate, and food web effects on the survival of Puget Sound salmon: bolstering marine ecosystem modeling with Azure cloud computing.
Biodiversity

Marshall University
Pure Life: Understanding the Rationale of Harmful Algal Blooms (HABs) in Aquatic Ecosystem
Water

Massachusetts Institute of Technology (US)
Hardware-enabled AI for the future of sustainable indoor agriculture.
Agriculture

Massey University (New Zealand)
Automating photo identification of marine mammals using deep learning.
Biodiversity

McGill University (Canada)
Climate change mitigation for smart cities.
Climate Change

Michigan State University (US)
Complexity as a holistic path to sustainability, not a roadblock.
Climate Change

Microsoft India R&D (India)
Cloud backbone for farmer information services in India.
Agriculture

National Oceanography Centre
A deep learning approach to predicting the North Atlantic wave sea states
Climate Change

National University of Ireland, Galaway
Stereo imaging of rogue waves.
Water

Northeastern University (US)
The networked digital earth for harnessing complexity and designing policy.
Climate Change

Northeastern University (US)
Risk assessment and sensitivity analysis of climate change on crop models using machine learning and big data analytics.
Agriculture

Peace Parks Foundation (South Africa)
Master Tracker App
Agriculture

Peace Parks Foundation (South Africa)
Transforming anti-poaching in protected areas affected by wildlife crime using the intelligent camera trap solution.
Agriculture

Peace Parks Foundation (South Africa)
Conservation farming app
Agriculture

Pennsylvania State University (US)
Cloud-enabled hydrology mesh workflows.
Water

Politecnico di Milano (Italy)
Deep learning for snow monitoring and predictive water system operation.
Water

Rain for Climate (Slovakia)
Rain for Climate Initiative: holistic water management theory.
Water

Key

🔶 **AGRICULTURE**

🔷 **WATER**

🟢 **BIODIVERSITY**

🟣 **CLIMATE CHANGE**

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Microsoft

Singapore Institute of Technology
Climate Modelling and Weather Forecasting with Deep Learning.
Climate Change

SIT (India)
Smart Environment Information and Management System (SEIMANS).
Water

Snapshot Serengeti
Snapshot Serengeti
Biodiversity

Snow Leopard Trust
Snow Leopard Image Recognition and Population Modeling.
Biodiversity

Southern California Coastal Water Research Project (US)
Using imagery from drones to identify trash in waterways to inform cleanup efforts and determine trash policy effectiveness.
Water

SUNY College of Environmental Science and Forestry (US)
Collaboration for reducing toxic emissions in a warming world.
Climate Change

Symbiosis Institute of Technology (India)
Smart meter data analytics for the reduction of energy consumption and carbon emissions.
Climate Change

Taiwan AI (Taiwan)
Beyond Beauty – Homeland From Above.
Climate Change

Technical University of Munich (Germany); Indian Institute of Technology (India)"
Low-cost handheld plant health monitoring device for resource limited regions.
Agriculture

The Nature Conservancy (US)
Catalyzing connectivity assessments and advancing conservation under climate change.
Biodiversity

The Nature Conservancy (US)
Using AI to monitor wildlife in southwest China.
Biodiversity

The Trust for Public Land (US)
The trust for public land Microsoft Azure data science machine pilot concept.
Climate Change

The Pennsylvania State University (US)
Advancing computational and image understanding technologies for better pattern discovery on big weather data.
Climate Change

Tohoku University (Japan); University of California, Irvine (US)
Dynamic disaster management cloud service platform based on satellite remote sensing and artificial intelligence.
Climate Change

US Forest Service USDA National Agroforestry Center
Accounting for trees in agricultural landscapes.
Agriculture

University of Akron (US)
Open-source spectrometer for citizen science.
Water

University of Alaska, Fairbanks (US)
Modeling the distribution of the Great Gray Owl in Alaska.
Biodiversity

University of British Columbia (Canada)
Creating forest management solutions for conservation of biodiversity and protection of carbon in forests as climate changes.
Climate Change

University of British Columbia (Canada)
Integrate machine learning and remote sensing for enhancing climate change mitigation and adaptation in agricultural ecosystem.
Climate Change

University of British Columbia (Canada)
Urban greenspace and climate change: how are Canada's 150 cities changing?
Climate Change

University of Bucharest (Romania)
Integrated assessment of the variability of the Urban Heat Island of Bucharest (Romania) using coupled WRF, LSM and satellite imagery.
Climate Change

University of California, Davis (US)
Endangered killer whale medical records and health database.
Biodiversity

University of California, Davis (US)
Data-driven and sustainable ranch management through application of AI for achieving carbon neutrality and improving soil health in cattle farms in California.
Biodiversity

University of California, Irvine (US)
Dynamic disaster management cloud service platform based on satellite remote sensing and artificial intelligence.
Climate Change

University of Copenhagen
Climate change and marine biosphere integrity.
Biodiversity

University of Denver (US)
Developing a GPU cloud-based visual analytics framework and tools for large-scale Earth science data.
Climate Change

University of Iowa (US)
Knowledge discovery, integration and communication for extreme weather and flood resilience using artificial intelligence.
Agriculture

University of Maryland, Baltimore County (US)
Predicting climate change research using dynamic data assimilation for topic modeling.
Climate Change

University of Maryland (US)
Mapping where child nutrition is vulnerable to climate change and where ecosystem services foster resilience.
Climate Change

University of Massachusetts Boston (US)
Advanced machine learning for long-lead precursors identification to extreme weather events.
Climate Change

University of Miami RSMAS
Big data to predict the future of coral reef health and resilience.
Climate Change

University of Missouri (US)
Species Detection from camera trap images.
Biodiversity

University of Montpellier (France)
Isolated seamounts and islands as the last refugia for marine megafauna: revealing the unseen biodiversity using environmental DNA.
Biodiversity

University of New Hampshire (US)
Tracking climate change through humpback whale social sounds.
Climate Change

University of Ottawa (Canada)
AI and satellite Earth observation analytics for agricultural land mapping and monitoring.
Agriculture

University of Oviedo (Spain)
Development of tools for risk assessment in coastal areas with Geographic Information Systems.
Water

University of Pretoria (South Africa)
African SDG hub integration
Climate Change

University of Saskatchewan (Canada)
Image and video analysis for rapid crop phenotyping.
Agriculture

University of Saskatchewan (Canada)
Predicting crop phenotypes from genotypes with deep learning.
Agriculture

University of Ss. Cyril and Methodius (Macedonia)
Cloud based general weed detection service.
Agriculture

University of South Florida
Mapping of Florida's coastal zone for climate change and biodiversity assessments.
Biodiversity

University of Victoria (Canada)
Coastal Climate Explorer
Climate Change

University of Washington (US)
Pioneering the integration of microbial system models and microbial community analysis to advance wastewater treatment technology.
Water

University of Waterloo (Canada)
Using Azure services for integrated environmental monitoring, modelling and decision making.
Agriculture

University of Waterloo (Canada)
Learning forest wildfire dynamics from satellite images using reinforcement learning.
Agriculture

University of Wisconsin-Madison (US)
Development of an automated computer vision system to monitor behavior of dairy calves.
Agriculture

Wayne State University (US)
A cloud-based analytics for real-time monitoring of landfills/superfund sites and the adjacent watershed.
Agriculture

WetDATA (US)
Democratizing access to water data to accelerate innovation through data visualization, predictive analytics and artificial intelligence applications.
Water

Yale University (US) and Wake Forest University's Amazonian Science Research Center (US)
Systematic ground truthing, land classification and crop health.
Agriculture

Yellowstone Ecological Research Center (US)
Integrating AI into ecological predictive modeling.
Biodiversity

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