

ICESat-2 Early Adopters

Early Adopter	Science Theme	Regions	Early Adopter Title	End-User(s)	Applications
<p>Andrew Roberts, Naval Postgraduate School</p> <p>Alexandra Jahn, University of Colorado at Boulder</p> <p>Adrian Turner, Los Alamos National Laboratory</p> <p>SDT/Project Office Partner: Ron Kwok</p>	Sea Ice	Central Arctic analysis domain	An ICESat-2 emulator for the Los Alamos sea ice model (CICE) to evaluate DOE, NCAR and DOD sea ice predictions for the Arctic	U.S. Department of Energy (POC: Elizabeth Hunke); National Center for Atmospheric Research (POC: Marika Holland, Jennifer Kay); U.S. Department of Defense (POC: Wieslaw Maslowski, Ruth Preller); University of Colorado Boulder (POC: John Cassano)	Sea ice forecasting; national defense environmental forecasting; coordinated disaster response: oil spill mitigation, field campaigns; improved climate projections at all latitudes
<p>Andy Mahoney, Geophysical Institute, University of Alaska Fairbanks</p> <p>SDT/Project Office Partner: Sinead L. Farrell, Ron Kwok</p>	Sea Ice	Alaska's Northern Coastline; Arctic Coastal System	Repeat altimetry of coastal sea ice to map landfast sea ice extent for research and operational sea ice analysts	NOAA National Weather Service Ice Desk, POC(s): James Nelson, Meteorologist in Charge, (james.a.nelson@noaa.gov) Rebecca Heim, Ice Forecaster, (Rebecca.Heim@noaa.gov)	Operational ice charts/navigation; coastal deliveries; monitoring habitat of marine wildlife; offshore oil and gas industry roads; travel/transportation
<p>Birgit Peterson, USGS Earth Resources Observation and Science Center</p> <p>SDT/Project Office Partner: Amy Neuenschwander</p>	Vegetation	United States	Evaluation of ICESat-2 ATLAS data for wildland fuels assessments	U.S. Forest Service's Wildland Fire Assessment System (POC W. Matt Jolly, mjolly@fs.fed.us, Project Manager)	Wildfire decisions; fire behavior modeling variables
<p>Bradley Zavodsky, NASA Marshall Space Flight Center/Short-term Prediction Research and Transition (SPoRT) Center</p> <p>SDT/Project Office Partner: Tom Neumann</p>	Sea Ice; Ice Sheets	Alaska	ICESAT-2 Land and Sea Ice Depth Observations to Support Operational Weather Forecasting in Alaska	National Weather Service, Alaska Region Headquarters, (POC: Carven Scott)	Commercial fishing and offshore oil; Operational use by Alaska forecasters
<p>Charon Birkett, ESSIC, University of Maryland</p> <p>SDT/Project Office Partner: Mike Jasinski</p>	Hydrology	Global (requirement: observations of lakes/reservoirs at least down to 10km2 target sizes)	The Application of Altimetry Data for the Operational Water Level Monitoring of Lakes and Reservoirs	USDA/FAS (POC: Dr. Curt Reynolds, Office of Global Analysis)	Hydrological drought; agricultural drought; monitoring of high water (flood) levels; monitoring of crop condition and production.
<p>G. Javier Fochesatto, Geophysical Institute University of Alaska Fairbanks</p> <p>Falk Huettmann, Institute of Arctic Biology, University of Alaska Fairbanks</p> <p>SDT/Project Office Partner: Lori Magruder</p>	Vegetation	Arctic Tundra and Boreal Forest; Interior Alaska	Using ICESat-2 prelaunch data in high latitude terrestrial ecosystems to allow for continuous monitoring of boreal forests and Arctic tundra	USDA Forest Service PNW Research Station (POC: Dr. Hans-Erik Andersen)	Land Management and monitoring over large regions (Arctic Tundra, Boreal Forest)
<p>Greg Babonis, SUNY at Buffalo</p> <p>SDT/Project Office Partner: Alex Gardner</p>	Ice Sheets; Solid Earth	Subglacial volcanic events in areas such as Antarctica, Iceland, and in southern Andean ice fields.	Applications of ICESat-2 in Volcanic and Geohazards-related research	Volcano Observatories, Vhub user group, UB GMFC (Geophysical Mass Flow Group)	Volcanic hazard mitigation, monitoring, and forecasting.
<p>Guy Schumann, Joint Institute for Regional Earth System Science & Engineering, University of California, Los Angeles (UCLA)</p> <p>SDT/Project Office Partner: Mike Jasinski</p>	Hydrology	California Bay Delta; Niger Inland Delta	Assessing the value of the ATL13 inland water level product for the Global Flood Partnership	Global Flood Partnership (GFP) (POCs: Dr. Florian Pappenberger; Global Flood Service and Toolbox Pillar; Dr. Guy Schumann, member of the Global Flood Partnership)	Prediction and managing of flood disaster impacts and global flood risk.

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Huilin Gao, Texas A&M University SDT/Project Office Partner: Mike Jasinski	Hydrology	Lake Mead Case Study; EA methods, results, and the end-to-end strategies will be transferable to other reservoirs	Developing ICESat-2 Based Lake Bathymetry Product for Improved Reservoir Managemen	TBD [NOTE: attempted reaching out to Lower Colorado Region of Reclamation and Nevada Water Center]	Reservoir Management; Water resources management; Operational lake bathymetry
Kuo-Hsin Tseng, SUNY at Buffalo SDT/Project Office Partner: Mike Jasinski	Hydrology	Ganges-Brahmaputra-Meghna (GBM) river basin covering India, Nepal, China, Bhutan, and Bangladesh	Using ICESat-2 Ground and Water Level Elevation Data towards Establishing a Seasonal and Flash Flood Early Warning System in the lower Ganges-Brahmaputra-Meghna River Basin	Institute of Water Modelling (POC: Zahirul Haque Khan), Bangladesh Water Development Board (POC: Engr. Zahirul Islam), Bangladesh Inland Water Transport Authority (POC: Md. Mahbub Alam)	Water resource management; observation of freshwater storage change
Lucia Mona, National Research Council of Italy - Institute of Methodologies for Environmental Analysis (CNR-IMAA) SDT/Project Office Partner: Steve Palm	Atmospheric Sciences	Polar Region	APRIL - Aerosol optical Properties in polar Regions with ICESat-2 Lidar	NASA, policy makers at local (Polar regions) and global (climate change) scale Examples: Aerocom, WMO	Climate; Air quality (effects on health and environment); Volcanic Hazards
Lynn Abbott, Virginia Polytechnic Institute and State University SDT/Project Office Partner: Sorin Popescu	Vegetation	Not specified (global)	Detection of ground and top of canopy using simulated ICESat-2 lidar data	American Forest Management, POC: John Welker; USDA Forest Service, POC: John Coulston	Monitor forest-related harvesting and land use
Nancy Glenn, Boise Center Aerospace Laboratory (BCAL) SDT/Project Office Partner: Amy Neuenschwander	Vegetation	Semiarid regions; western U.S.	Improved Terrestrial Carbon Estimates with Semiarid Ecosystem Structure	USDA (US Forest Service and Agricultural Research Service, POC Dr. Stuart Hardegree); DOI (BLM, POC: Anne Halford; including the Great Basin Landscape Conservation Cooperative (LCC), and USGS, POC: Dr. Matt Germino) DoD (Charles BaunIdaho Army National Guard) Regional partners (Great Basin Research and Management Partnership and Joint Fire Sciences Program)	Long-term land management. Use estimates of aboveground biomass to quantify carbon, fuel loads, and monitor change in semiarid regions.
Pamela G. Posey, Naval Research Laboratory SDT/Project Office Partner: Sinead L. Farrell	Sea Ice	Full Arctic Region	Use of ICESat-2 data as a Validation Source for the U.S. Navy's Ice Forecasting Models	U.S. Navy, POC: Bruce McKenzie, Naval Oceanographic Office U.S. National/Naval Ice Center, POC: Sean Helfrich, Science and Applied Tech. Dept. Head; NOAA/NESDIS/OSPO Snow and Ice Product Area Lead	Navigation; Arctic shipping
Rodrigo C.D. Paiva SDT/Project Office Partner: Mike Jasinski	Hydrology	Congo, Amazon, and Niger River Basins	Improved river hydrodynamics estimates from ICESat-2 for hydrology predictions	Brazilian National Water Resources Agency (ANA; POC: Adalberto Meller Brazilian Geological Survey (CPRM; POC: Daniel Medeiros Moreira International Commission for Congo Oubangui and Sangha Basin (CICOS)	Flood monitoring
Stephen Howell, Environment Canada SDT/Project Office Partner: Ron Kwok	Sea Ice	Canadian Arctic	Use of ICESat-2 Data for Environment Canada observational applications and prediction systems	Climate Research Division (POC: Howell); Canadian Meteorological Centre (POC: Belair); Canadian Ice Service (POC: Arkett); Canadian Centre for Climate Modelling and Analysis (POC: Derksen)	Climate data records; operational sea ice forecasting for Arctic shipping; sea ice info for mariners; weather hazards; prevention/mitigation of atmospheric catastrophes
Subrata Nandy SDT/Project Office Partner: Sorin Popescu	Vegetation	Mangrove forest (Indian Sunderban), Evergreen forest (Namdapha), moist-deciduous Sal forest (Uttarakhand) of India	Forest carbon stock assessment and monitoring: A study in Indian tropical forest using ICESat-2 data	Forest Department, Government of Assam, India (POC: Parshant Dhanda, IFS, Divisional Officer)	Forest mapping and monitoring.

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Sudhagar Nagarajan, Florida Atlantic University	Ice Sheets	Global	Incorporation of simulated ICESat-2 (MABEL) data to increase the time series and accuracy of Greenland/Antarctica Ice Sheet DDEM (Dynamic DEM)	Center for Environmental Studies, POC: Dr. Leonard Berry (works with local, national, and international government organizations on sea level rise)	Sea level rise monitoring/forecasting
Wenge Ni-Meister, Hunter College, The City University of New York , SDT/Project Office Partner: Sorin Popescu	Vegetation	Global	Mapping Vegetation with On-Demand Fusion of Remote Sensing Data for Potential Use of U.S. Forest Service Inventories and Fire Fuel Estimates	U.S. Forest Service	Forest inventories and fire fuel mapping