

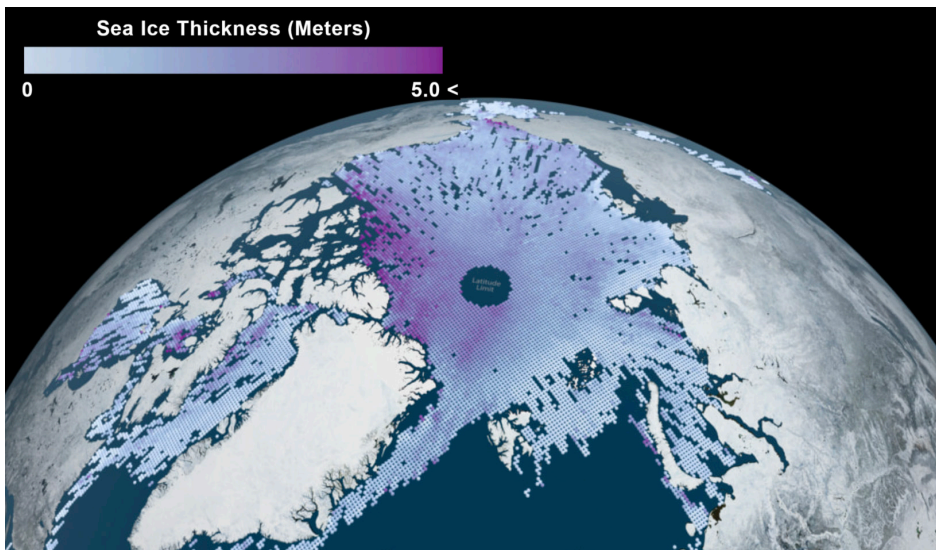
Ice, Cloud, and Land Elevation Satellite-2 Quick Look Products

Satellite Needs Working Group - Solution Fact Sheet

The Ice, Cloud, and Land Elevation Satellite-2 (ICESat-2) mission provides global elevation data using the Advanced Topographic Laser Altimeter System (ATLAS). With ATLAS measurements, ICESat-2 provides detailed elevation information about many of Earth's features, including ice sheets, glaciers, vegetation, clouds, oceans, and land surfaces. The SNWG enabled the production of ICESat-2 Quick Look products that provide a reduced latency (~3 days) for a variety of measurements including sea ice height and freeboard.

Recent ICESat-2 measurements allow scientists to determine the thickness of very thin sea ice. As sea ice thins with increasing global temperatures, ICESat-2 data will become critical for evaluating polar region evolution. (March 2022)

Credit: Kel Elkins, NASA's Science Visualization Studio



Societal Benefit

- Expedite latency of sea ice freeboard thickness measurements for navigation, commerce, and safety
- Measure variability in ice sheet height to study effects on sea level rise and support sea ice forecasting
- Calculate vegetation height to investigate fluctuations in biomass
- Inform decisions regarding land-surface deformation and surface water and flooding



Ice, Cloud, and Land Elevation Satellite-2 Quick Look Products

| Quick Look (QL) ICESat-2 Data Products | ATL07QL | ATL08QL | ATL09QL | ATL10QL | ATL13QL |
|--|---|----------------------------|-----------------------------------|-------------------|-----------------------------|
| Scientific Parameters | Sea Ice Height | Land and Vegetation Height | Atmospheric Layer Characteristics | Sea Ice Freeboard | Inland Surface Water Height |
| Processing Level | 3A | | | | |
| Temporal Coverage | Quick-look data: Most recent months Full mission data: October 2018 - present <i>Note that quick-look data are replaced with final data when available.</i> | | | | |
| Temporal Resolution | 91-day repeat cycle, 15 orbits per day (the orbit's sub-cycle achieves monthly global coverage) | | | | |
| Latency | ~72 hours | | | | |
| Spatial Coverage | Global | | | | |
| Spatial Resolution | Varies (~10 - 300 m) | | | | |
| Data Format | HDF5 | | | | |

How do I access this data?

ICESat-2 data is maintained by NASA's NSIDC, including algorithm technical details, data access, and training examples.



NASA NSIDC

Where can I find more information?

More information on the ICESat-2 Quick Look products is available on this solution's webpage.



ICESat-2
Quick Look Webpage

Background Image Credit: Operation IceBridge Arctic 2011