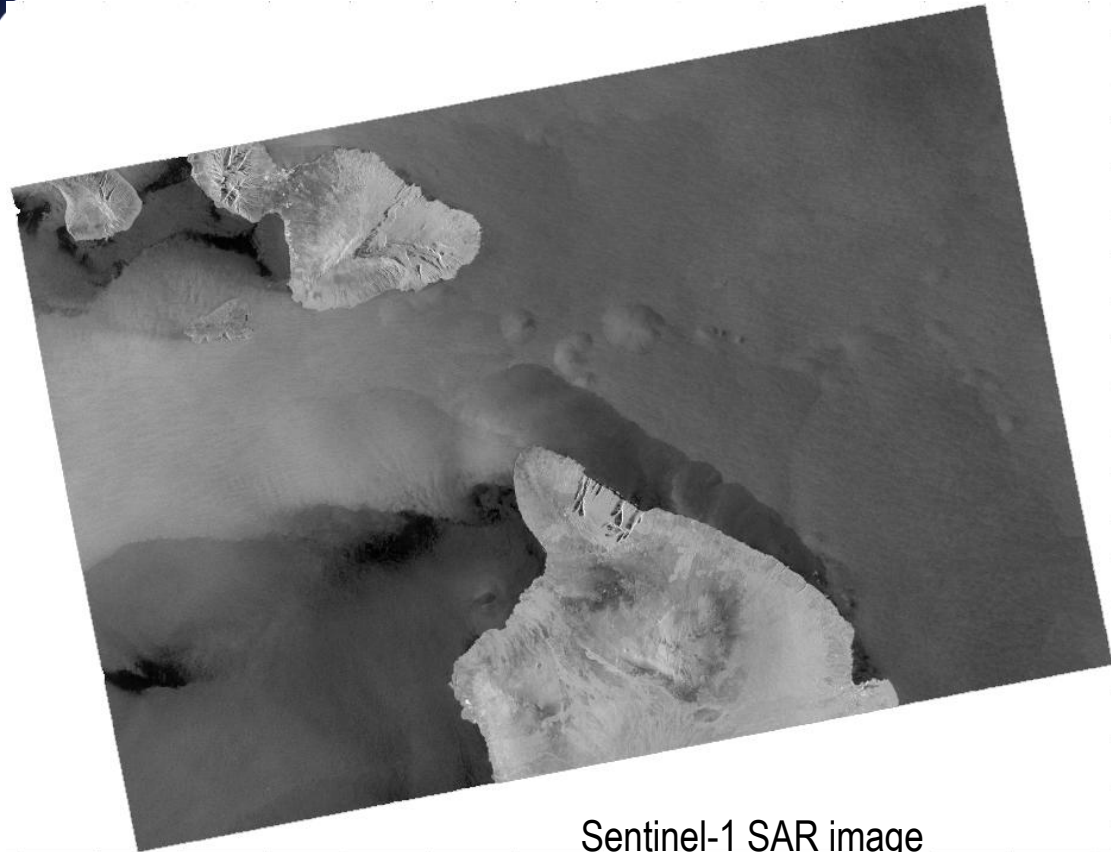




Synthetic Aperture Radar (SAR)

Module 2: Product Availability & Access NOAA Coastwatch Satellite Course



Sentinel-1 SAR image
Hawaii 29 May 2022 04:31 UTC

Last Updated: 07/08/2026

coastwatch.info@noaa.gov



The CoastWatch Synthetic Aperture Radar instructional series

The CoastWatch Synthetic Aperture Radar (SAR) instructional series consists of three (3) training modules:

Module 1: An overview of SAR

Module 2: Descriptions of available SAR products and where to find them (this module)

Module 3: Examples of how various phenomena appear in SAR imagery

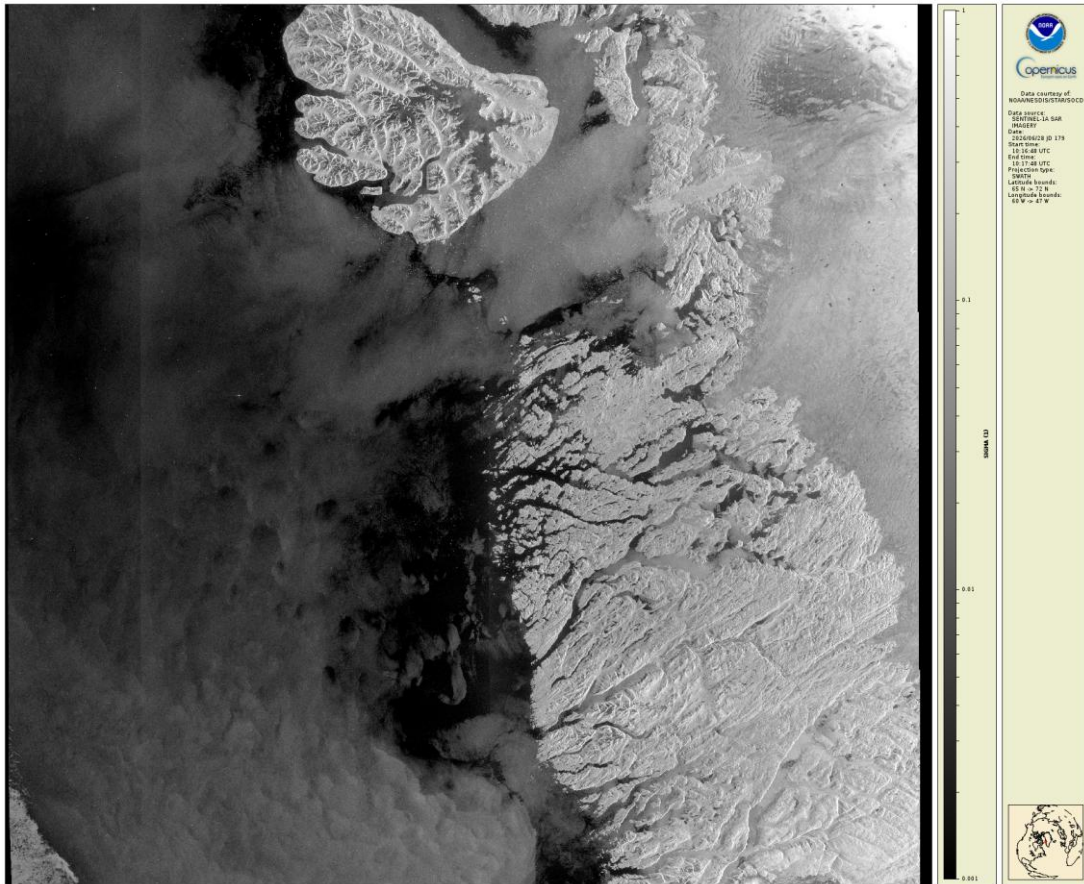


Products

- Normalized Radar Cross Section (NRCS)
 - Backscatter primarily for sea ice classification
 - 100m resolution Level-2
 - 1km mapped resolution (polar)
- Wind Speed
 - surface microwave radar reflectivity
 - 500m resolution

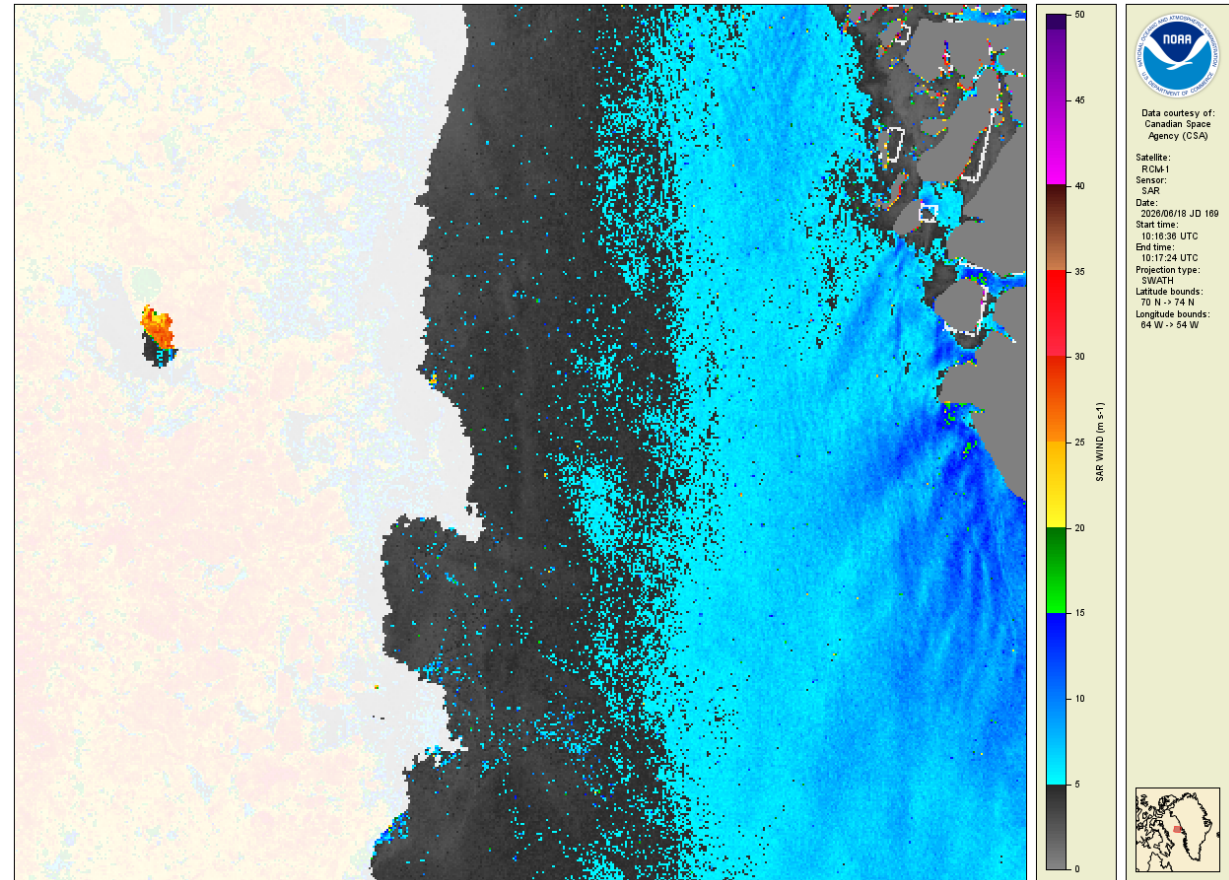


Products



Normalized Radar Cross Section (NRCS) from Sentinel-1A

Modified Sentinel-1A data. Data courtesy of the Copernicus Program

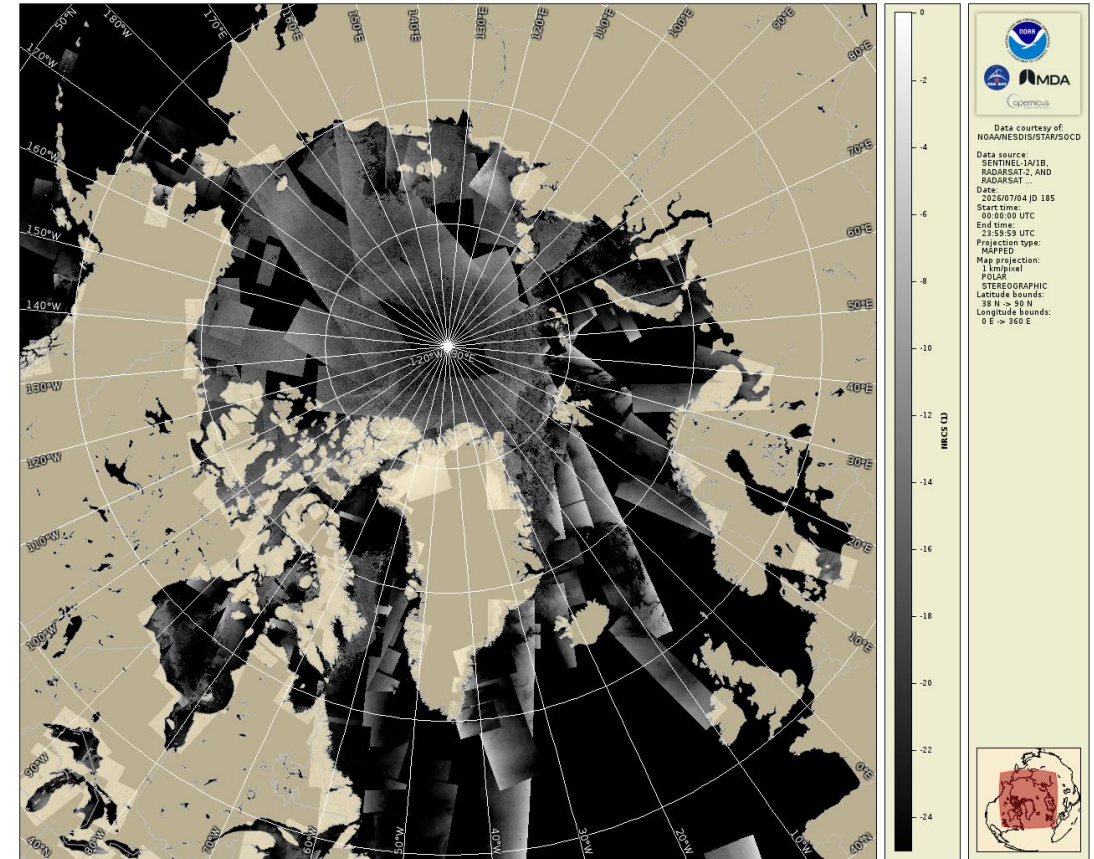


Ocean Surface Winds from RCM-1

Modified RCM-1 data. Data courtesy of the RADASAT Constellation Mission and Canadian Space Agency

Product Formats

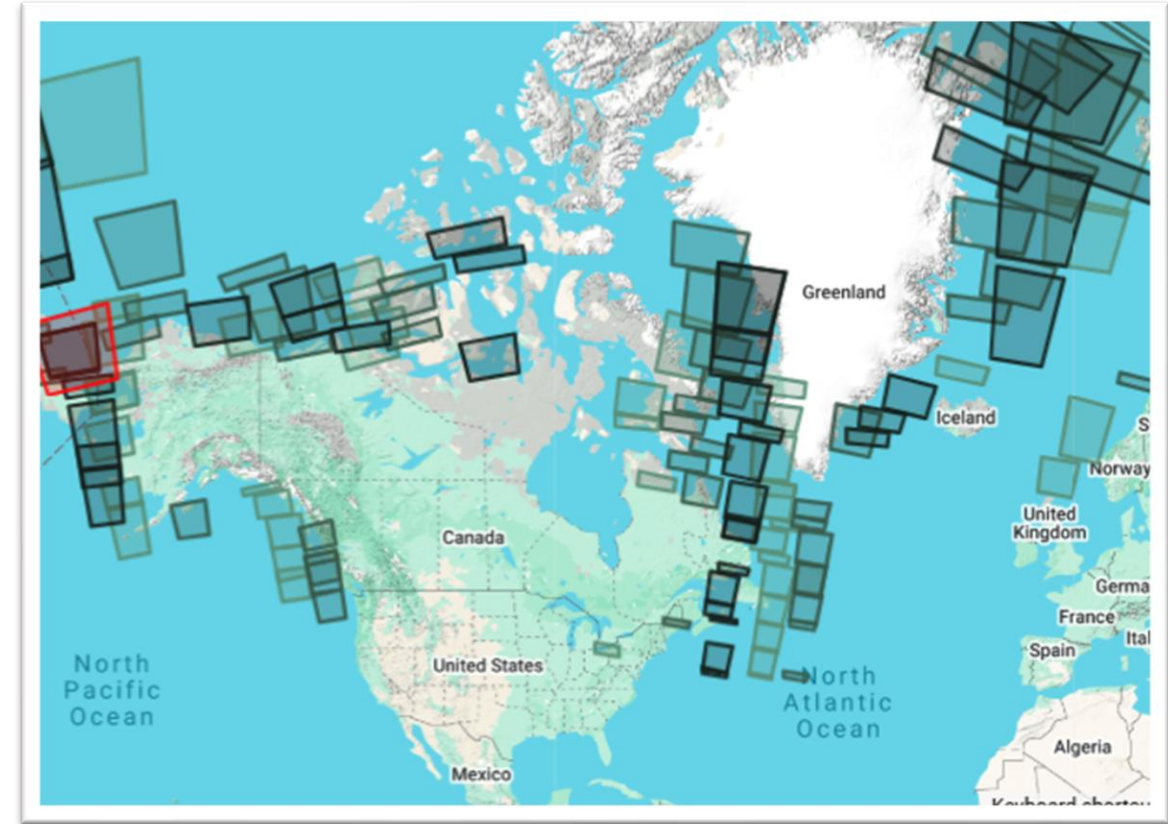
- Image
 - PNG
- Vector
 - Display (JSON)
 - KML/Z
 - Shapefile
- Data
 - GeoTIFF
 - NetCDF



Daily composite of Sentinel-1, RADARSAT-2, and RADARSAT Constellation Mission normalized radar cross section data in northern polar stereographic projection.

Product Coverage

- Typically higher latitudes (N / S)
- Unmapped
 - Level-2 granule
- Mapped
 - Geographic
 - Polar Stereographic



Snapshot of available SAR Wind data from RADARSAT-2 and RADARSAT Constellation Mission for July 7, 2026.
(https://www.star.nesdis.noaa.gov/socd/mecb/sar/sarwinds_rcm_rs2.php)

SAR Data Access

Organization / Team	Associated Products	Link(s) & Instructions
Office of Satellite and Product Operations (OSPO)	Imagery: Operational SAR Ocean Surface Winds (Rolling 2 week holding) Wind: PNG, KMZ, TIFF NRCS: TIFF	https://www.ospo.noaa.gov/products/ocean/sar/
STAR Water Surface Conditions Team	Imagery: SAR Ocean Surface Winds, NRCS, Great Lakes Ice Classification, Experimental products Wind: PNG, KMZ, TIFF, [NetCDF] NRCS: [PNG], TIFF [Ice Classification] [Great Lakes]	https://www.star.nesdis.noaa.gov/socd/mecb/sar
CoastWatch	Imagery+NetCDF: N Polar NRCS daily composite, NRCS & Ocean Surface Wind granules Wind: PNG, NetCDF NRCS: PNG, NetCDF	https://coastwatch.noaa.gov/cwn/products.html (enter 'synthetic' into Table Search) https://coastwatch.noaa.gov/cw_html/cwViewer.html (Spatial Search or Arctic SAR NRCS Composite Layer)
PolarWatch	N Polar NRCS daily composite, SAR Drift sea ice velocities	https://polarwatch.noaa.gov/stac.html (Enter SAR in search)
CoastWatch West Coast Node	West coast United States daily Ocean Surface Wind composites (ERDDAP)	https://coastwatch.pfeg.noaa.gov/wcn/erddap/griddap/sar_winds_westcoast.graph



Data Usage Requirements

- NOAA Data
 - Data courtesy of NOAA
- Sentinel-1
 - Contains modified Copernicus Sentinel data <year> (https://sentinels.copernicus.eu/documents/247904/690755/Sentinel_Data_Legal_Notice). Sentinel data is obtained from <https://scihub.copernicus.eu/dhus>.
- RADARSAT Constellation Mission
 - RADARSAT Constellation Mission Imagery Copyright Government of Canada <year>. RCM data is obtained from [https://www.eodms-sgdot.nrcan-nrcan.gc.ca/index-en.html](https://www.eodms-sgdot.nrcan.nrcan.gc.ca/index-en.html). RADARSAT is an official mark of the Canadian Space Agency.
- RADARSAT-2
 - RADARSAT-2 Data and Products Copyright MDA Geospatial Services Inc. <year> - All Rights Reserved. RADARSAT is an official mark of the Canadian Space Agency. RADARSAT-2 data is provided by <https://mda.space/en/>.



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