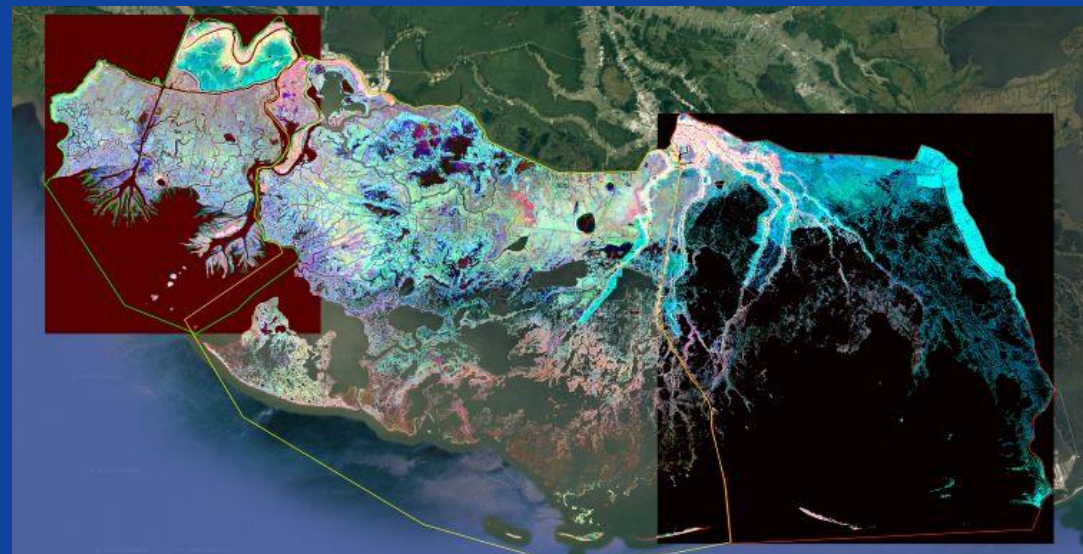


Delta-X Data Access and Archival at the Oak Ridge National Laboratory Distributed Active Archive Center (ORNL DAAC)

Delta-X Open Data Workshop and Science Team Meeting

June 5th, 2023

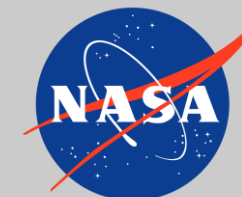
Matt Donovan, Geospatial Data Analyst
Yaxing Wei, Lead Scientist



The Oak Ridge National Laboratory Distributed Active Archive Center for Biogeochemical Dynamics operates under an interagency agreement between NASA and the U.S. Department of Energy

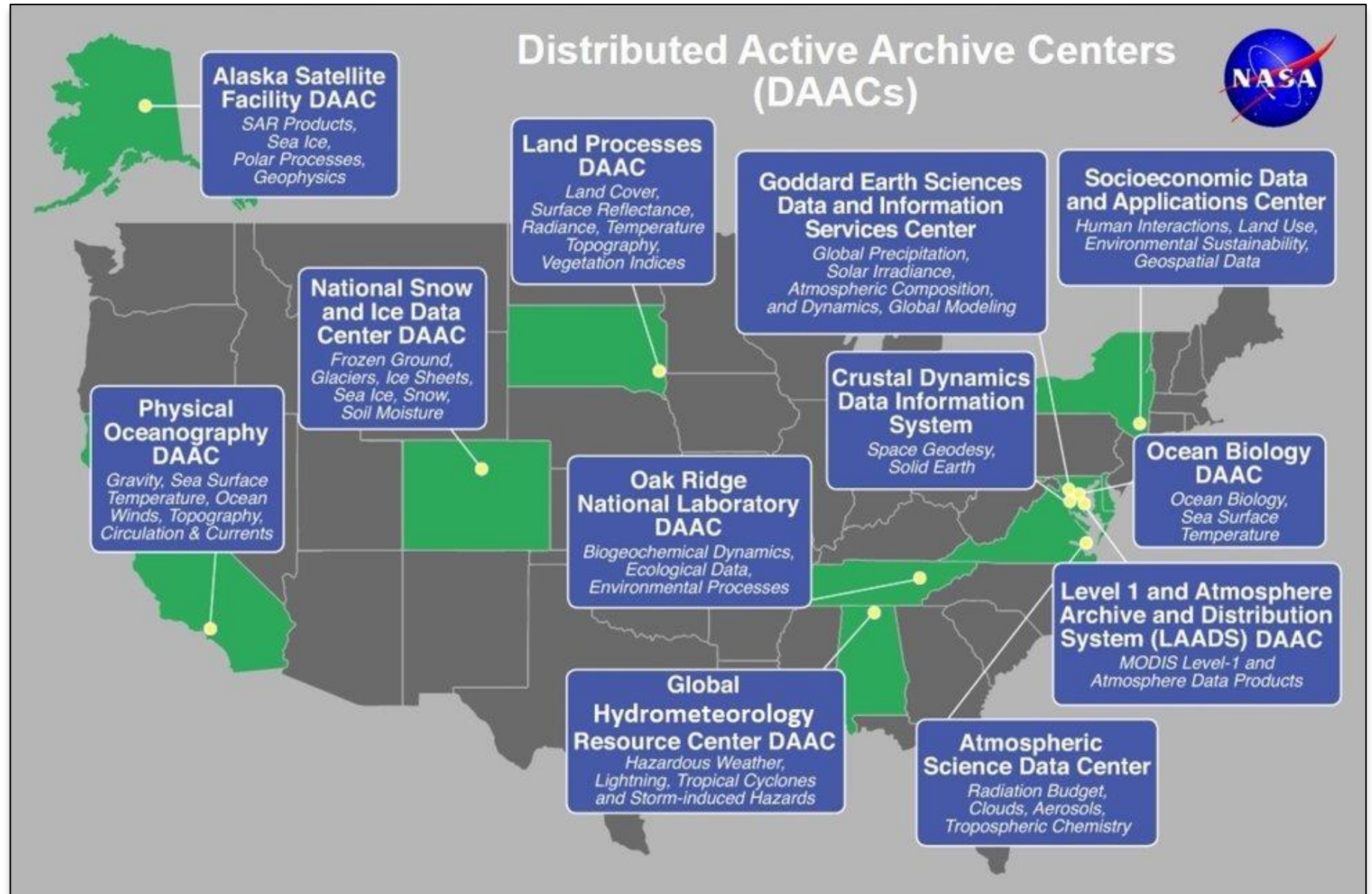


U.S. DEPARTMENT OF
ENERGY



EOSDIS Distributed Active Archive Centers

- EOSDIS = Earth Observing System Data and Information System
- Includes 12 discipline-oriented DAACs



The ORNL DAAC- <https://daac.ornl.gov>

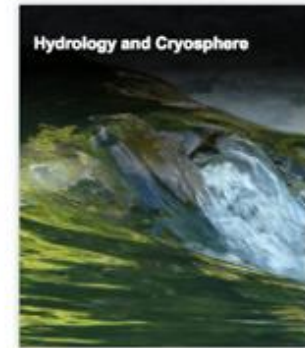
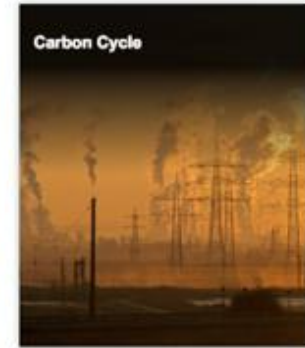
- Publishes and supports NASA data products relevant to Terrestrial Ecology, primarily field and airborne data
- Facilitates use of NASA data in ways that address Terrestrial Ecology needs, particularly those doing site-based studies



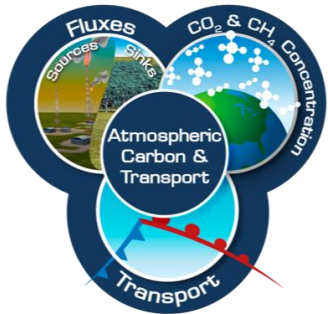
The screenshot shows the ORNL DAAC website interface. At the top, there is a navigation bar with the ORNL DAAC logo, the NASA logo, and a search bar. Below the navigation bar, there is a large map of the world with a color-coded overlay representing carbon storage in tropical forests. Below the map, there is a section titled "Carbon Storage in Tropical Forests" with a brief description. Further down, there are four icons representing different data categories: Field Campaigns (77 Datasets in 12 Projects), Land Validation (23 Datasets in 1 Projects), Regional/Global (23 Datasets in 11 Projects), and Model Archive (11 Models in 1 Project). Below this, there is a "News" section with four articles: "Column-average CO2 Concentrations from ACT-America" (2018-10-30), "Forest Data from the AFRISAR Mission" (2018-10-30), "Maximum NDVI from the ABoVE Campaign" (2018-10-28), and "CO2 Concentrations in the Boston Area" (2018-10-04). At the bottom, there is a footer with a brief description of the ORNL DAAC mission and four icons representing different data services: "Subset and Visualize ORNL DAAC data", "Search for CARVE Data in Earthdata Search", "Read our Data Management Best Practices", and "Looking for data used in a journal article? DOI Search".

Data at ORNL DAAC

- 1790+ datasets
- 9 Science Themes
- 30,000+ users per year
- 36 Missions/Projects



ORNL DAAC Data Products: Projects



ORNL DAAC's Ingest Process

Dataset
Submission

Dataset
Curation

Dataset
Publication

Steps in Data Publication Process



- Pending Submission – 0
- Pending QA - 7

- Pending Documentation – 0
- In PI Review - 1

ORNL DAAC's Pre-Print Datasets

- ORNL DAAC has a workflow for manuscript data that provides
 - Landing page
 - Data files
 - Skinny Documentation
 - Citation
 - DOI
- What a pre-print should NOT be (for now): data already known to be superseded or expected to be soon.
- What does “provisional” mean to you?

About Preprint Datasets

About Preprint Datasets

A preprint dataset is one which is made available prior to the completion of the ORNL DAAC's quality assurance and documentation work. This is most often done to support the peer review process for journal articles involving the data. As with a journal preprint, a preprint dataset includes the materials as received from the data provider, is subject to revision, and should be used as one would a journal preprint. Preprint datasets at the ORNL DAAC are not visible in NASA's Earthdata Search, and the ORNL DAAC attempts to prevent them from showing up in Internet search tools. Any differences in the finalized data relative to the data from the preprint version will be described in the finalized dataset documentation.

Overview

DOI	https://doi.org/10.3334/ORNLDAAC/2108
Version	1
Project	Delta-X
Published	0000-00-00
Updated	2022-08-09
Usage	2 downloads

Description

This product delineates the Mississippi River Delta (MRD) landscape into ecogeomorphic cells, which are small contiguous areas of land with similar ecological and geomorphological characteristics. Each cell is characterized by similar ground elevation (generally called 'hydrogeomorphic zone') with same plant distribution. The elevation is from the USGS Digital Elevation Model and the plant distribution is characterized by their spectral signature as seen by the Sentinel-2 instrument. A set of vector and raster files are available. The vector files contain the ecogeomorphic cells as polygons with unique labels (i.e. ID). The pixel values are the cell labels as found in the vector file. Other raster files are also provided which includes the mean and standard deviations of bathymetry and spectral indices within each cell. Note that all metadata provided with this dataset is provisional.

Spatial Coverage

Bounding rectangle
N: 29.74 S: 29.02 E: -90.21 W: -91.55

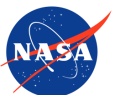
Temporal Coverage

2021-01-01 to 2021-09-03

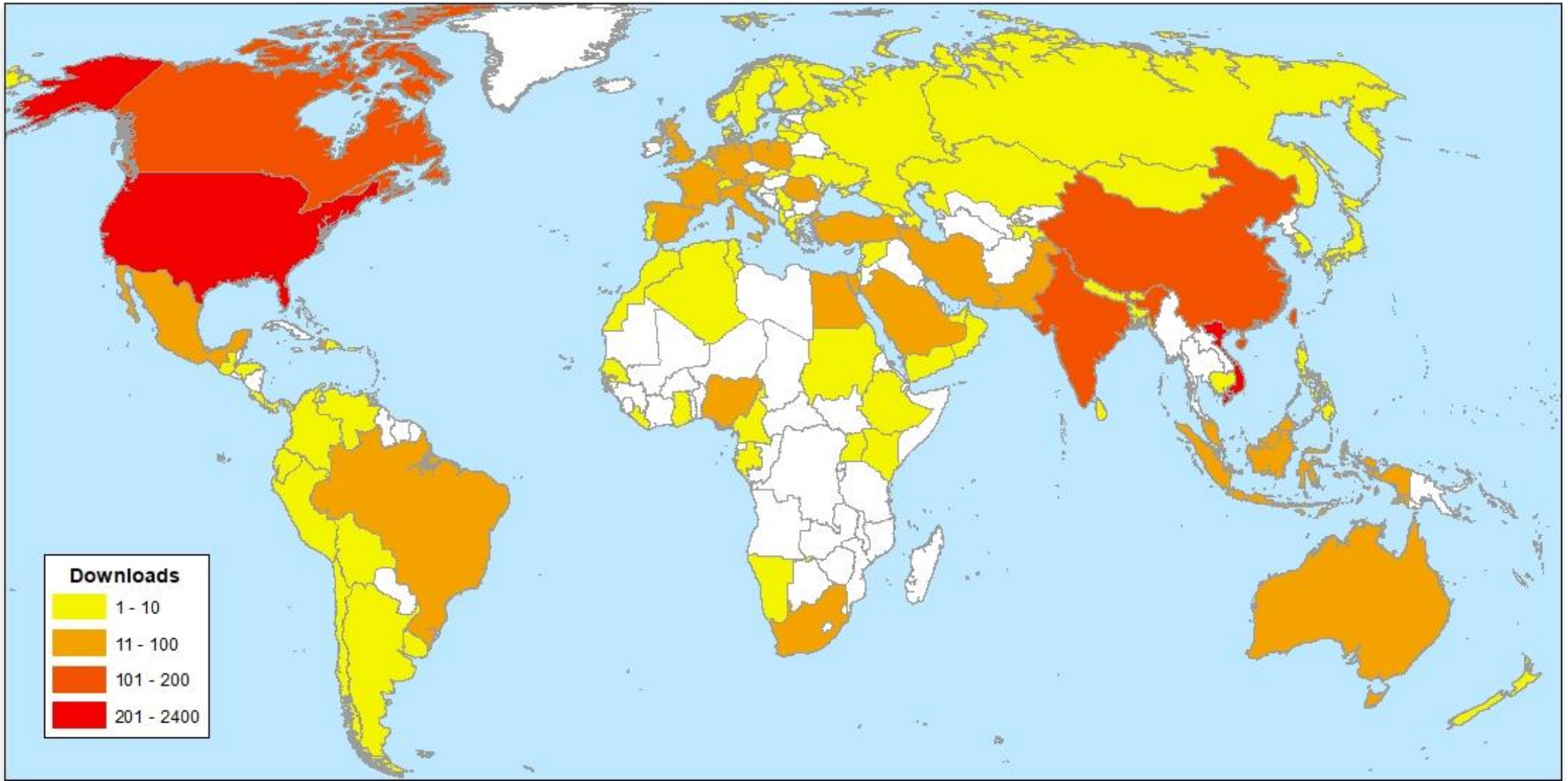
ORNL DAAC's Delta-X Dataset Updates/Versions

- Spatio-temporal appends or minor data change
 - Change in minor version number (e.g., V1 -> V1.1)
 - DOI and citation remains the same
 - New data files are just added to the existing dataset
 - **16 Delta-X datasets that have been appended or have had minor updates.**
- Updated data values due to broad corrections/change in algorithms
 - Change in version number (e.g., V1 -> V2)
 - DOI and citation changes
 - The older version is superseded by the new version. Older versions are never deleted and can be made available upon request.
 - **16 Delta-X datasets have new versions (V2 – V4)**
- Gray areas do exist; if in doubt, a conversation will take place.

Version ▾	Dataset Title ↕	Published ▾
1	Delta-X: Acoustic Doppler Current Profiler Channel Surveys, Coastal Louisiana, 2021	2021-10-29
2	Delta-X: Acoustic Doppler Current Profiler Channel Surveys, MRD, Louisiana, 2021, V2	2022-09-23

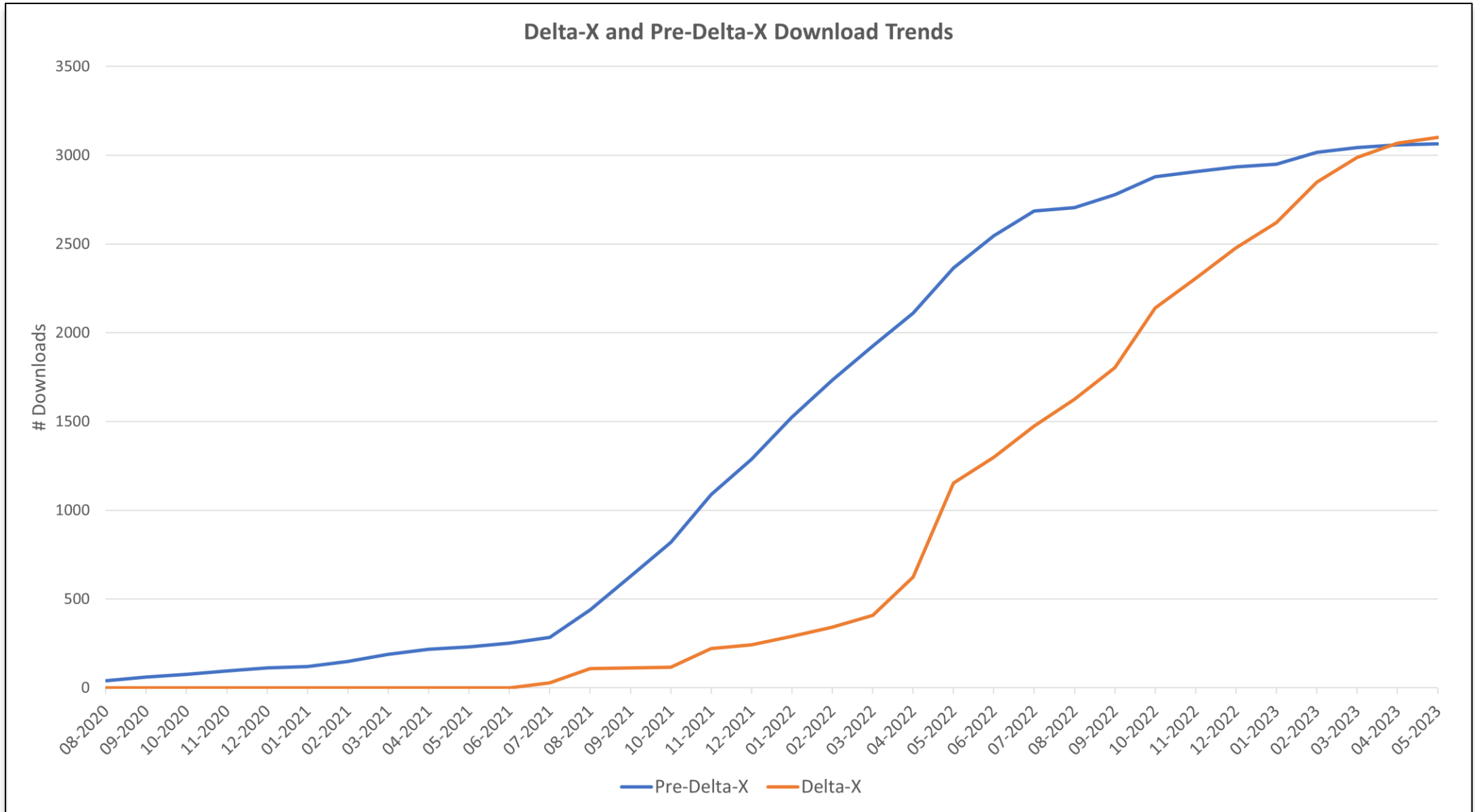


Delta-X Downloads



*Country of origin self-reported by users

Delta-X Downloads



Searching for Data at ORNL DAAC

The screenshot shows the ORNL DAAC homepage. At the top, there is a navigation bar with links for "About Us", "Get Data", "Submit Data", "Tools", "Resources", "Help", and "Sign in". Below the navigation bar is a search bar containing the text "delta", which is circled in red. To the right of the search bar is a green "Search" button. Below the search bar is a large banner image showing a map of the Mississippi River Delta with the text "Ecogeomorphic Cell Products across the MRD, LA, USA, 2021". Below the banner are four categories: "Field Campaigns" (1306 Datasets in 19 Projects), "Land Validation" (32 Datasets in 6 Projects), "Regional/Global" (443 Datasets in 12 Projects), and "Model Archive" (15 Models in 1 Project).

News

More News



2023 Delta-X Open Data Workshop

Learn about the 2021 Spring and Fall campaign data and derived products.



Lake & Pond Extents in Alaska, 2019-2021

Polygon spatial files of lake and pond extents for three sub-regions of Interior Alaska's boreal forest, and one tundra region located in Alaska's Yukon-Kuskokwim Delta.

The screenshot shows the search results page for "delta". The search bar contains "delta" and is highlighted with a red arrow. Below the search bar are tabs for "Data", "Website", and "DOI". The results section shows "Found 45 results" and a list of search results. Each result includes a title, a DOI link, a brief description, and icons for document and download. The results listed are:

- Delta-X: Acoustic Doppler Current Profiler Channel Surveys, Coastal Louisiana, 2021**
https://doi.org/10.3334/ORNLDAAC/1939
This dataset provides river discharge measurements collected at selected locations in the Atchafalaya and Terrebonne Basins within the Mississippi River...
- Pre-Delta-X: AVIRIS-derived Total Suspended Solids Maps for MRD, LA, USA, 2015-2016**
https://doi.org/10.3334/ORNLDAAC/1822
This dataset includes total suspended solids (TSS) at the water surface across the Atchafalaya and Terrebonne Basins in Southern Louisiana, USA, within the...
- Pre-Delta-X: Channel Bathymetry of the Atchafalaya Basin, LA, USA, 2016**
https://doi.org/10.3334/ORNLDAAC/1807
This dataset provides water depths and water surface elevations collected during bathymetric surveys of the main channel of the Wax Lake Delta within the...
- Pre-Delta-X: River Discharge Channel Surveys across Atchafalaya Basin, LA, USA, 2016**
https://doi.org/10.3334/ORNLDAAC/1806
This dataset provides river discharge measurements collected at selected locations across the Atchafalaya River Basin, within the Mississippi River Delta...
- Pre-Delta-X: Vegetation Species, Structure, Aboveground Biomass, MRD, LA, USA, 2015**
https://doi.org/10.3334/ORNLDAAC/1805
This dataset provides vegetation species, height, stem density and diameter, and species aboveground biomass (AGB) measurements collected at herbaceous and...
- Pre-Delta-X: Spectral Reflectance of Water Surface, Atchafalaya Basin, LA, USA, 2016**
https://doi.org/10.3334/ORNLDAAC/1804
This dataset provides measurements of in situ remote-sensing reflectance (Rrs; per steradian) of surface water across Atchafalaya Basin, southern coastal...
- Pre-Delta-X: Total Suspended Solids of Surface Water across MRD, LA, USA, 2015-2016**
https://doi.org/10.3334/ORNLDAAC/1802
This dataset contains the total suspended solids (TSS) concentration of in situ water samples collected at selected sites across...

Data organization by NASA program

ORNL DAAC
DISTRIBUTED ACTIVE ARCHIVE CENTER
FOR BIOGEOCHEMICAL DYNAMICS

Navigation: About Us, **Get Data**, Submit Data, Tools, Resources, Help, Sign in

Search ORNL DAAC

DAAC Home > Get Data

Get Data

Science Themes: NASA Projects, All Datasets

Filter By: Field Campaigns, Land Validation, Regional/Global, Model Archive

Themes displayed: CARVE, Climate, CMS, Daymet, **Delta-X**, EOS LAND VAL, FIFE, FLUXNET, GEDI

ORNL DAAC
DISTRIBUTED ACTIVE ARCHIVE CENTER
FOR BIOGEOCHEMICAL DYNAMICS

Navigation: About Us, **Get Data**, Submit Data, Tools, Resources, Help, Sign in

Search ORNL DAAC

DAAC Home > Get Data > NASA Projects > Delta-X

Delta-X

Overview



The Delta-X mission is a 5-year NASA Earth Venture Suborbital-3 mission to study the Mississippi River Delta in the United States, which is growing and sinking in different areas. River deltas and their wetlands are drowning as a result of sea level rise and reduced sediment inputs. The Delta-X mission will determine which parts will survive and continue to grow, and which parts will be lost. Delta-X begins with airborne and in situ data acquisition and carries through data analysis, model integration, and validation to predict the extent and spatial patterns of future deltaic land loss or gain.

Related Links

- [Browse Delta-X datasets](#)
- [Search Delta-X datasets](#)
- [Publications citing Delta-X](#)
- [NASA Press Release](#)

[Delta-X Project Site](#)

Data products from the 2016 Pre-Delta-X Demonstration Campaign are available now. The Spring and Fall 2021 campaigns were completed in April and August 2021, and 2022 validation activities are in progress. New datasets are being added continuously.

Delta-X Datasets List

Sign in to download Delta-X datasets.

- 26 Campaign
- 15 Demonstration Campaign
- = 45 total Delta-X datasets

Campaign (26 datasets)

Show **All** entries

Filter:

<input checked="" type="checkbox"/>	Campaign Delta-X dataset	Updated	Published	User Guide	Download	Size
*	Delta-X: AVIRIS-NG L3 Derived Aboveground Biomass, MRD, Louisiana, USA, 2021, V2	2023-03-16	2023-03-16			677.9MB
*	Delta-X: Bed and Suspended Sediment Grain Size, MRD, LA, USA, 2021, Version 2	2023-02-23	2023-02-23			480.1KB



Publications

Publications Citing Delta-X

The following 30 publications cited the [Delta-X](#) project.

Show entries

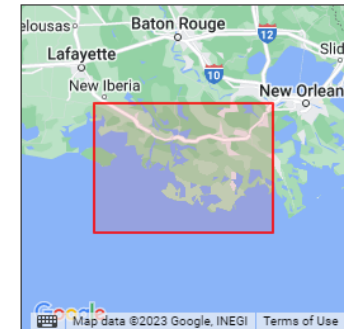
Filter:

Year	Citation	Dataset or Project
2023	Donatelli, C., P. Passalacqua, K. Wright, G. Salter, M.P. Lamb, D. Jensen, and S. Fagherazzi. 2023. Quantifying Flow Velocities in River Deltas via Remotely Sensed Suspended Sediment Concentration. <i>Geophysical Research Letters</i> . 50(4). https://doi.org/10.1029/2022GL101392	Pre-Delta-X: Channel Bathymetry of the Atchafalaya Basin, LA, USA, 2016
2023	Donatelli, C., P. Passalacqua, K. Wright, G. Salter, M.P. Lamb, D. Jensen, and S. Fagherazzi. 2023. Quantifying Flow Velocities in River Deltas via Remotely Sensed Suspended Sediment Concentration. <i>Geophysical Research Letters</i> . 50(4). https://doi.org/10.1029/2022GL101392	Pre-Delta-X: AVIRIS-derived Total Suspended Solids Maps for MRD, LA, USA, 2015-2016
2022	Cortese, L. and S. Fagherazzi. 2022. Fetch and distance from the bay control accretion and erosion patterns in Terrebonne marshes (Louisiana, USA). <i>Earth Surface Processes and Landforms</i> . 47(6):1455-1465. https://doi.org/10.1002/esp.5327	Delta-X
2022	Greenberg, E., D.R. Thompson, D. Jensen, P.A. Townsend, N. Queally, A. Chlus, C.G. Fichot, J.P. Harringmeyer, and M. Simard. 2022. An Improved Scheme for Correcting Remote Spectral Surface Reflectance Simultaneously for Terrestrial BRDF and Water?Surface Sunlight in Coastal Environments. <i>Journal of Geophysical Research: Biogeosciences</i> . 127(3). https://doi.org/10.1029/2021JG006712	Delta-X
2022	Jensen, D.J., K.C. Cavanaugh, D.R. Thompson, S. Fagherazzi, L. Cortese, and M. Simard. 2022. Leveraging the Historical Landsat Catalog for a Remote Sensing Model of Wetland Accretion in Coastal Louisiana. <i>Journal of Geophysical Research: Biogeosciences</i> . 127(6). https://doi.org/10.1029/2022JG006794	Pre-Delta-X: Total Suspended Solids of Surface Water across MRD, LA, USA, 2015-2016
2022	Jensen, D.J., K.C. Cavanaugh, D.R. Thompson, S. Fagherazzi, L. Cortese, and M. Simard. 2022. Leveraging the Historical Landsat Catalog for a Remote Sensing Model of Wetland Accretion in Coastal Louisiana. <i>Journal of Geophysical Research: Biogeosciences</i> . 127(6). https://doi.org/10.1029/2022JG006794	Pre-Delta-X: Spectral Reflectance of Water Surface, Atchafalaya Basin, LA, USA, 2016
2022	Jensen, D.J., K.C. Cavanaugh, D.R. Thompson, S. Fagherazzi, L. Cortese, and M. Simard. 2022. Leveraging the Historical Landsat Catalog for a Remote Sensing Model of Wetland Accretion in Coastal Louisiana. <i>Journal of Geophysical Research: Biogeosciences</i> . 127(6). https://doi.org/10.1029/2022JG006794	Delta-X
2022	Nordio, G. and S. Fagherazzi. 2022. Storm Surge and Tidal Dissipation in Deltaic Wetlands Bordering a Main Channel. <i>Journal of Geophysical Research: Oceans</i> . 127(3). https://doi.org/10.1029/2021JC017655	Delta-X
2022	Oliver-Cabrera, T., C.E. Jones, Z. Yunjun, and M. Simard. 2022. InSAR Phase Unwrapping Error Correction for Rapid Repeat Measurements of Water Level Change in Wetlands. <i>IEEE Transactions on Geoscience and Remote Sensing</i> . 60:1-15. https://doi.org/10.1109/TGRS.2021.3108751	Delta-X

Pre-Delta-X: Channel Bathymetry of the Atchafalaya Basin, LA, USA, 2016

Overview

DOI	https://doi.org/10.3334/ORNLDAAC/1807
Version	1
Project	Delta-X
Published	2020-08-31
Updated	2020-08-31
Usage	223 downloads
Citations	5 publications cited this dataset



[Download Data](#) 561.2 MB [User Guide](#) [Resources](#)

Description

This dataset provides water depths and water surface elevations collected during bathymetric surveys of the main channel of the Wax Lake Delta within the Mississippi River Delta (MRD).

Spatial Coverage

Bounding rectangle
 N: 29.96 S: 28.98 E: -90.36 W: -91.91

Temporal Coverage

2016-10-16 to 2016-10-20

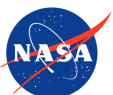
Publications Citing Pre-Delta-X: Channel Bathymetry of the Atchafalaya Basin, LA, USA, 2016

The following 5 publications cited the product [Pre-Delta-X: Channel Bathymetry of the Atchafalaya Basin, LA, USA, 2016](#).

Show entries

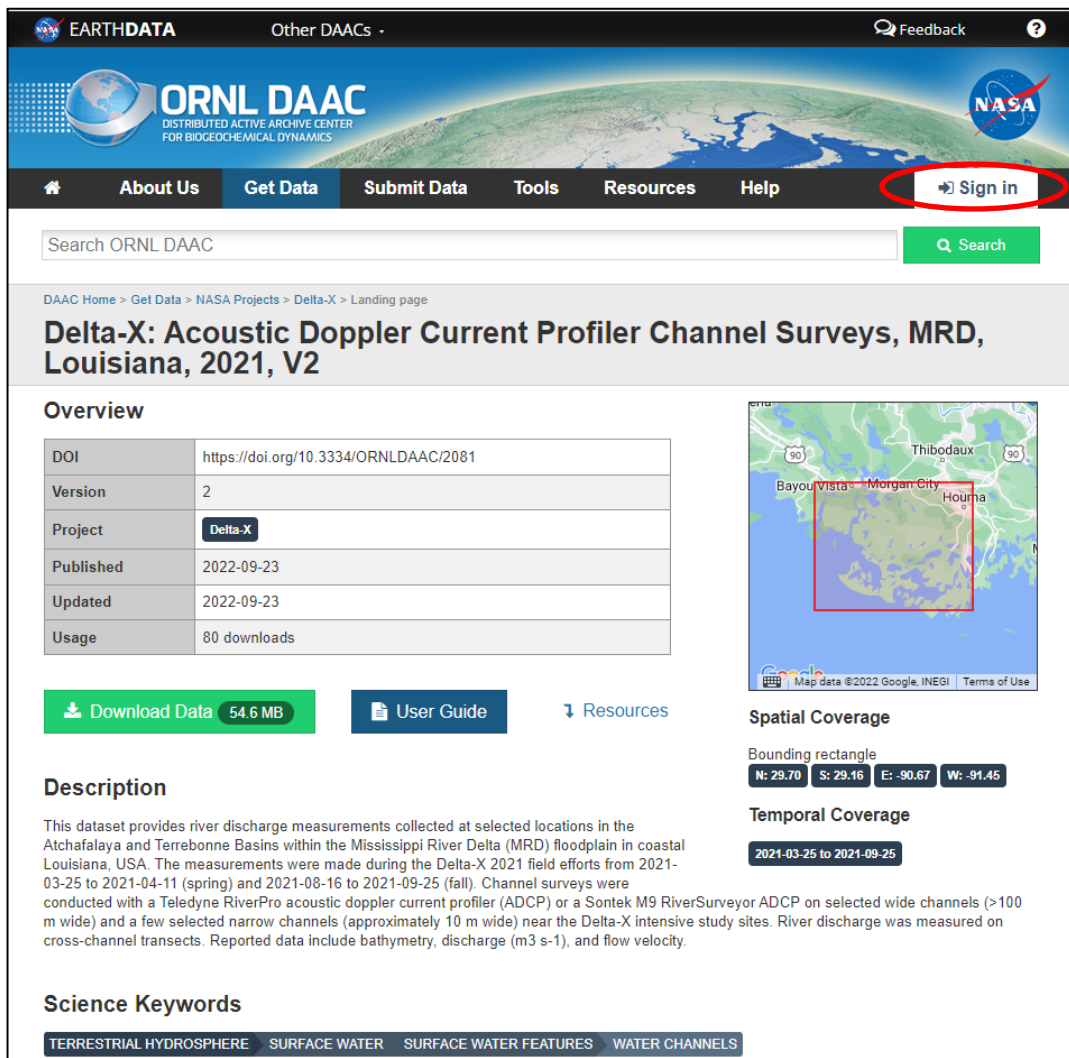
Filter:

Year	Citation
2023	Donatelli, C., P. Passalacqua, K. Wright, G. Salter, M.P. Lamb, D. Jensen, and S. Fagherazzi. 2023. Quantifying Flow Velocities in River Deltas via Remotely Sensed Suspended Sediment Concentration. <i>Geophysical Research Letters</i> . 50(4). https://doi.org/10.1029/2022GL101392
2022	Shafiei, H., A. Soloy, I. Turki, M. Simard, N. Lecoq, and B. Laignel. 2022. Numerical investigation of the effects of distributary bathymetry and roughness on tidal hydrodynamics of Wax Lake region under calm conditions. <i>Estuarine, Coastal and Shelf Science</i> . 265:107694. https://doi.org/10.1016/j.ecss.2021.107694
2022	Wright, K., P. Passalacqua, M. Simard, and C.E. Jones. 2022. Integrating Connectivity Into Hydrodynamic Models: An Automated Open? Source Method to Refine an Unstructured Mesh Using Remote Sensing. <i>Journal of Advances in Modeling Earth Systems</i> . 14(8). https://doi.org/10.1029/2022MS003025
2022	Zhang, X., C.E. Jones, T. Oliver-Cabrera, M. Simard, and S. Fagherazzi. 2022. Using rapid repeat SAR interferometry to improve hydrodynamic models of flood propagation in coastal wetlands. <i>Advances in Water Resources</i> . 159:104088. https://doi.org/10.1016/j.advwatres.2021.104088



Accessing Datasets Via ORNL DAAC Site

Sign in using an Earthdata Login:



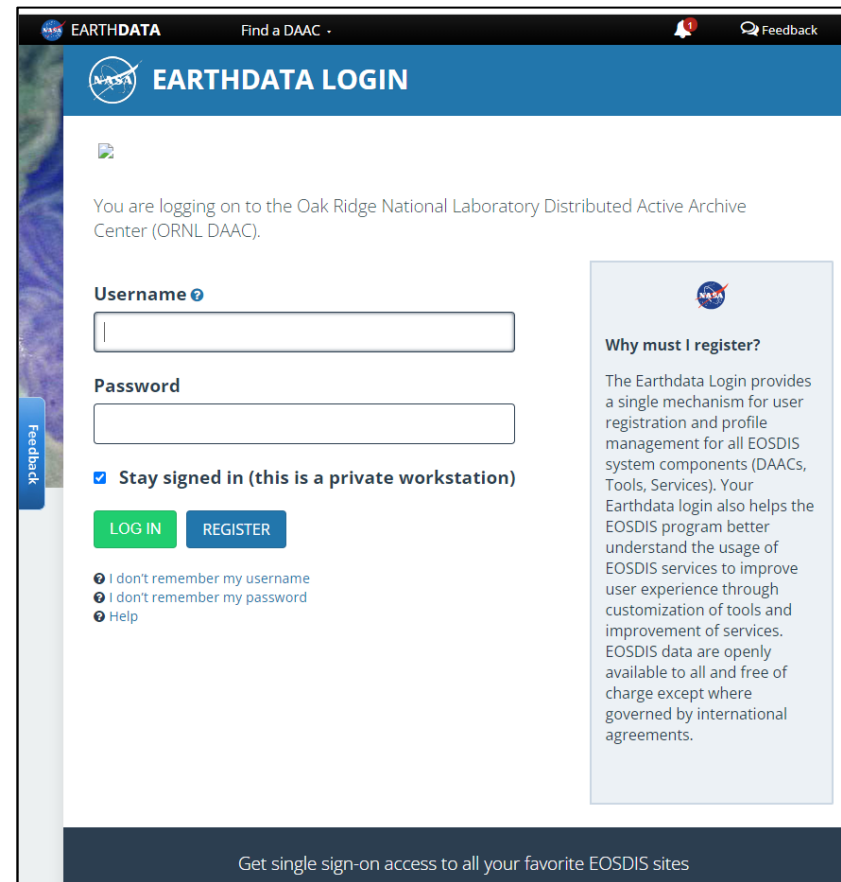
The screenshot shows the ORNL DAAC website interface. At the top, there is a navigation bar with 'EARTHDATA' and 'Other DAACs'. Below this is a search bar and a menu with options like 'About Us', 'Get Data', 'Submit Data', 'Tools', 'Resources', 'Help', and 'Sign in'. The 'Sign in' button is circled in red. Below the navigation bar, there is a search bar and a breadcrumb trail: 'DAAC Home > Get Data > NASA Projects > Delta-X > Landing page'. The main content area features a title 'Delta-X: Acoustic Doppler Current Profiler Channel Surveys, MRD, Louisiana, 2021, V2' and an 'Overview' section with a table of metadata. To the right of the table is a map showing the spatial coverage of the dataset. Below the map, there are sections for 'Spatial Coverage' and 'Temporal Coverage'. At the bottom, there are buttons for 'Download Data', 'User Guide', and 'Resources', followed by a 'Description' section and 'Science Keywords'.

DOI	https://doi.org/10.3334/ORNLDAAC/2081
Version	2
Project	Delta-X
Published	2022-09-23
Updated	2022-09-23
Usage	80 downloads

Spatial Coverage
Bounding rectangle
N: 29.70 S: 29.16 E: -90.67 W: -91.45

Temporal Coverage
2021-03-25 to 2021-09-25

Science Keywords
TERRESTRIAL HYDROSPHERE SURFACE WATER SURFACE WATER FEATURES WATER CHANNELS



The screenshot shows the Earthdata Login page. At the top, there is a navigation bar with 'EARTHDATA' and 'Find a DAAC'. Below this is a header with 'EARTHDATA LOGIN'. The main content area contains a message: 'You are logging on to the Oak Ridge National Laboratory Distributed Active Archive Center (ORNL DAAC)'. There are input fields for 'Username' and 'Password'. Below these fields, there is a checkbox labeled 'Stay signed in (this is a private workstation)' which is checked. There are buttons for 'LOG IN' and 'REGISTER'. Below the buttons, there are links for 'I don't remember my username', 'I don't remember my password', and 'Help'. To the right of the login form, there is a section titled 'Why must I register?' with a paragraph of text explaining the benefits of registration. At the bottom of the page, there is a footer with the text 'Get single sign-on access to all your favorite EOSDIS sites'.

Why must I register?

The Earthdata Login provides a single mechanism for user registration and profile management for all EOSDIS system components (DAACs, Tools, Services). Your Earthdata login also helps the EOSDIS program better understand the usage of EOSDIS services to improve user experience through customization of tools and improvement of services. EOSDIS data are openly available to all and free of charge except where governed by international agreements.

Accessing Datasets Via ORNL DAAC Site

[Download Data](#) 54.6 MB [User Guide](#) [Resources](#)

Description

This dataset provides river discharge measurements collected at selected locations in the Atchafalaya and Terrebonne Basins within the Mississippi River Delta (MRD) floodplain in coastal Louisiana, USA. The measurements were made during the Delta-X 2021 field efforts from 2021-03-25 to 2021-04-11 (spring) and 2021-08-16 to 2021-09-25 (fall). Channel surveys were conducted with a Teledyne RiverPro acoustic doppler current profiler (ADCP) or a Sontek M9 RiverSurveyor ADCP on selected wide channels (>100 m wide) and a few selected narrow channels (approximately 10 m wide) near the Delta-X intensive study sites. River discharge was measured on cross-channel transects. Reported data include bathymetry, discharge (m³ s⁻¹), and flow velocity.

Science Keywords

TERRESTRIAL HYDROSPHERE SURFACE WATER SURFACE WATER FEATURES WATER CHANNELS
TERRESTRIAL HYDROSPHERE SURFACE WATER SURFACE WATER PROCESSES/MEASUREMENTS DISCHARGE/FLOW
BIOSPHERE ECOSYSTEMS AQUATIC ECOSYSTEMS WETLANDS

Data Use and Citation

Christensen, A.L., J.M. Mallard, J. Nghiem, M. Simard, T.M. Pavelsky, and M.P. Lamb. 2022. Delta-X: Acoustic Doppler Current Profiler Channel Surveys, MRD, Louisiana, 2021, V2. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/2081>

This dataset is openly shared, without restriction, in accordance with the [EOSDIS Data Use Policy](#). See our [Data Use and Citation Policy](#) for more information.

Data Files

Check the box next to the files you want to order and then click the 'Add Checked Items' button to order files. Click on the file link to see the file or save it. Click the 'Add Dataset' button to order the complete dataset.

266.2 MB in 773 Files

Show 25 entries Filter:

<input checked="" type="checkbox"/>	Data File (Granule)	Size	Start Date	End Date	Lat	Lon
<input type="checkbox"/>	ADCP_20210325-154526_WLO_VP-MW-center_001_Rep1_Bathy.csv	60.2 KB	2021-03-25	2021-03-25	29.51	-91.45
<input type="checkbox"/>	ADCP_20210325-154526_WLO_VP-...-center_001_Rep1_Velocity.csv	1.1 MB	2021-03-25	2021-03-25	29.51	-91.45
<input type="checkbox"/>	ADCP_20210325-155519_WLO_VP-MW-center_002_Rep2_Bathy.csv	47.3 KB	2021-03-25	2021-03-25	29.51	-91.45
<input type="checkbox"/>	ADCP_20210325-155519_WLO_VP-...-center_002_Rep2_Velocity.csv	860.2 KB	2021-03-25	2021-03-25	29.51	-91.45

Delta-X: Acoustic Doppler Current Profiler Channel Surveys, MRD, Louisiana, 2021, V2

Get Data

Documentation Revision Date: 2022-09-23

Dataset Version: 2

Summary

This dataset provides river discharge measurements collected at selected locations in the Atchafalaya and Terrebonne Basins within the Mississippi River Delta (MRD) floodplain in coastal Louisiana, USA. The measurements were made during the Delta-X 2021 field efforts from 2021-03-25 to 2021-04-11 (spring) and 2021-08-16 to 2021-09-25 (fall). Channel surveys were conducted with a Teledyne RiverPro acoustic doppler current profiler (ADCP) or a Sontek M9 RiverSurveyor ADCP on selected wide channels (>100 m wide) and a few selected narrow channels (approximately 10 m wide) near the Delta-X intensive study sites. River discharge was measured on cross-channel transects. Reported data include bathymetry, discharge (m³ s⁻¹), and flow velocity.

This dataset includes 771 files in comma-separated values (*.csv) format and 2 files in compressed Keyhole Markup Language (*.kmz) format.

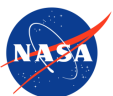


Figure 1. Locations of river discharge measurements (black triangles) in the Atchafalaya and Terrebonne Basins within the Mississippi River Delta (MRD) floodplain in coastal Louisiana, U.S. Measurements were taken by Delta-X project in March and April 2021. Source: [DeltaX_RiverDischarge_Spring2021.csv](#)

Accessing Datasets Via Earthdata Search:

<https://search.earthdata.nasa.gov>

The screenshot displays the Earthdata Search interface. At the top, the search bar is highlighted with a red circle and contains the text "Search for collections or topics". Below the search bar, a sidebar on the left contains various filters. The "Features" section is expanded, and the "Available in Earthdata Cloud" checkbox is highlighted with a red circle. The "Projects" section is also expanded, and the "Delta-X" checkbox is checked and highlighted with a red circle. The main content area shows "45 Matching Collections" with a list of results. The first result is "Delta-X: Aboveground Biomass and Necromass across Wetlands, MRD, Louisiana, 2021". The second result is "Pre-Delta-X: L3 AirSWOT-derived Water Level Profiles, Wax Lake Outlet, LA, USA, 2015". The third result is "Delta-X: Belowground Biomass and Necromass across Wetlands in the MRD, LA, USA, 2021". The fourth result is "Delta-X: Island and Secondary Channel Model, MRD, LA, USA, 2022". The fifth result is "Pre-Delta-X: Channel Bathymetry of the Atchafalaya Basin, LA, USA, 2016". To the right of the search results is a map of the MRD region, showing the Mississippi River Delta and surrounding areas.



Create a Search Subscription and Receive Automatic Emails About New or Updated Delta-X Datasets

EARTHDATA SEARCH

Search for collections or topics

45 Matching Collections

Showing 20 of 45 matching collections

Delta-X: Aboveground Biomass and Necromass across Wetlands, MRD, Louisiana, 2021

2 Granules 2021-03-21 to 2021-08-27 Earthdata Cloud

This dataset contains total carbon, total nitrogen, and total phosphorus content of aboveground biomass (AGB) and necromass (AGN) samples...

Pre-Delta-X: L3 AirSWOT-derived Water Level Profiles, Wax Lake Outlet, LA, USA, 2015

3 Granules 2015-05-08 to 2015-05-11 Earthdata Cloud

This dataset contains water level profiles generated from the AirSWOT data collected in the Atchafalaya Basin in Southern Louisiana, USA, within the...

Delta-X: Belowground Biomass and Necromass across Wetlands in the MRD, LA, USA, 2021

2 Granules 2021-03-21 to 2021-08-27 Earthdata Cloud

This dataset contains total carbon, total nitrogen, and total phosphorus content of belowground biomass (BGB) and necromass (BGN) samples...

Delta-X: Island and Secondary Channel Model, MRD, LA, USA, 2022

29 Granules 2021-01-01 to 2021-12-31 Earthdata Cloud

This dataset includes model code and output for a model that simulates changes in islands and small water channels of river delta systems in respons...

Filter Collections

Features

- Available in Earthdata Cloud
- Customizable
- Map Imagery

Keywords

Platforms

Instruments

Organizations

Projects **1 Selected**

Showing Top 50 [View All](#)

- ABoVE 221
- AQUARIUS SAC-D 185
- ATDD 26
- ATom 49
- BOREAS 303
- CAMEX 62
- CATS-ISS 25
- CERES 153
- CMS 144
- CWIC 118
- Delta-X 42
- DISCOVER 30

Subscriptions **1**

EARTHDATA SEARCH

Search for collections or topics

Search Results

Dataset Search Subscriptions

Subscribe to be notified by email when new data matching your search query becomes available.

Create a new subscription

Name

Dataset Search Subscription (Projects)

1 filter applied

- Projects
- Delta-X

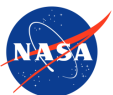
+ Create Subscription

New Delta-X ORNL DAAC Dataset

Created: 2022-09-08 19:46:06



[Details](#) [Edit](#) [Delete](#)






[View All Subscriptions](#)



Create a Search Subscription and Receive Automatic Emails About New or Updated Delta-X Datasets

Email Subscription Notification

 cmr-support@earthdata.nasa.gov
To  Donovan, Matt

 Reply  Reply All  Forward  

Mon 2022-10-17 10:34 AM

You have subscribed to receive notifications when new collections are added that match the following search query:

`has_granules_or_cwic=true&data_center_h[]=Oak Ridge National Laboratory Distributed Active Archive Center (ORNL DAAC)&project_h[]=Delta-X` ←

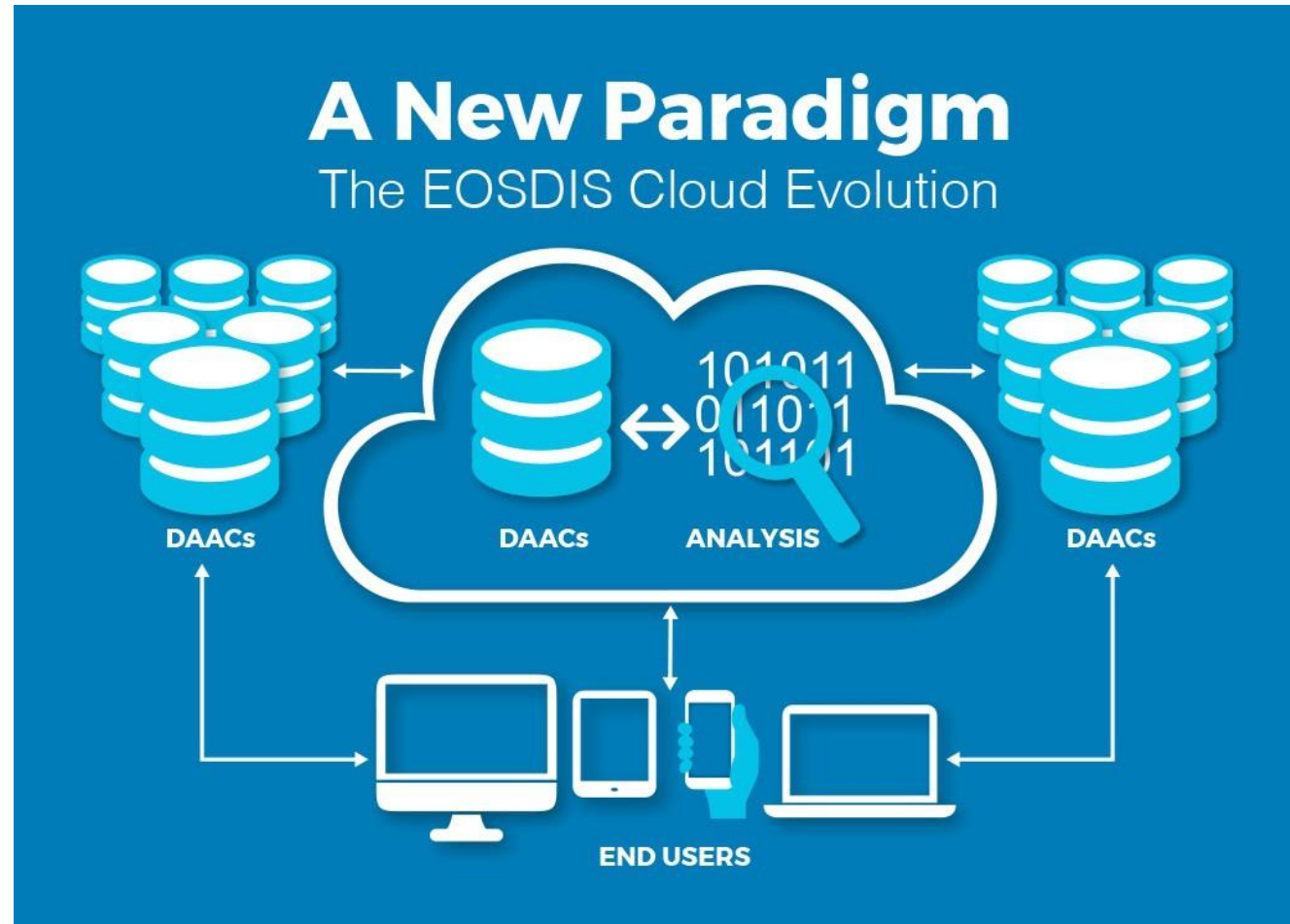
Running the query with a time window from 2022-09-27T15:28:43.446Z to 2022-10-17T14:33:36.679Z, the following collections have been added or updated:

- https://cmr.earthdata.nasa.gov:443/search/concepts/C2515316743-ORNL_CLOUD/2 ←
- https://cmr.earthdata.nasa.gov:443/search/concepts/C2515316269-ORNL_CLOUD/2

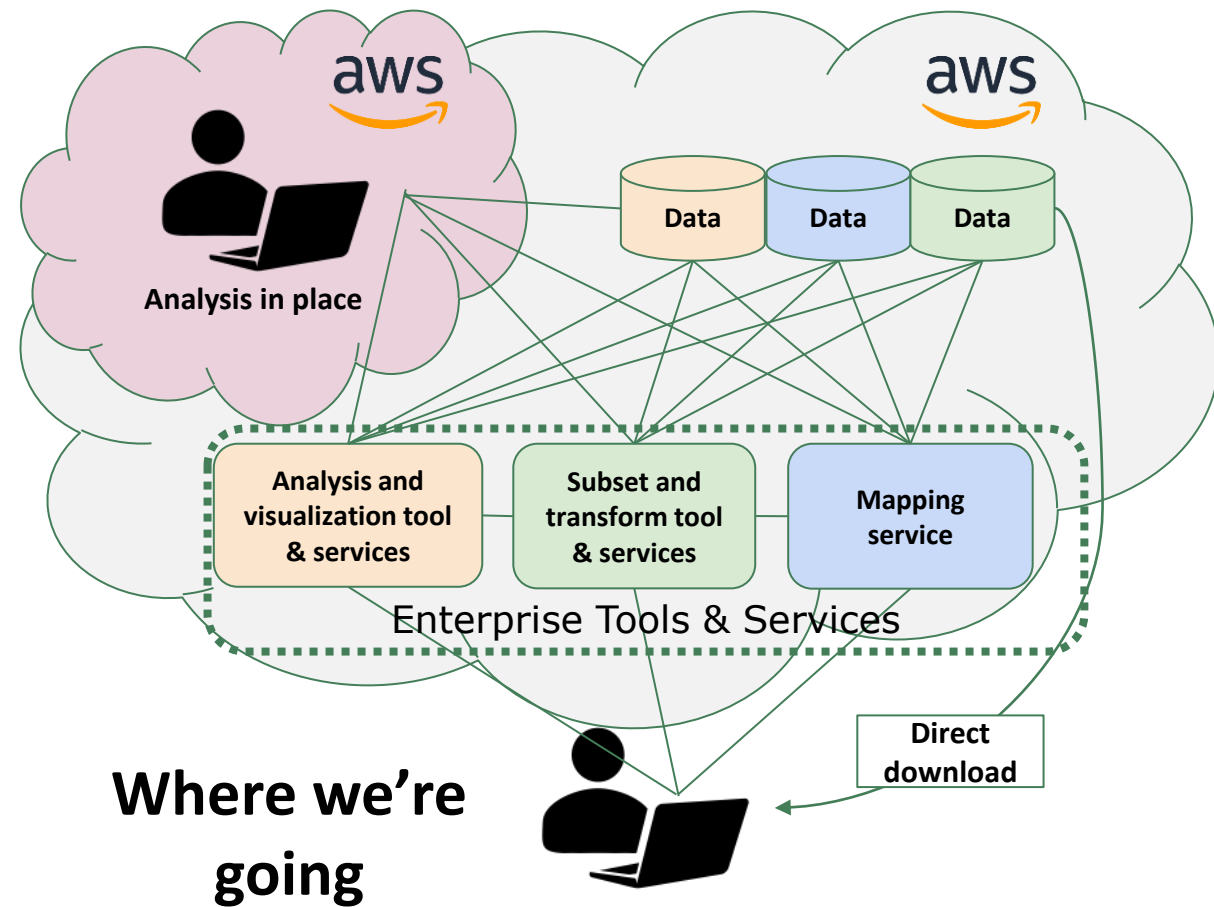
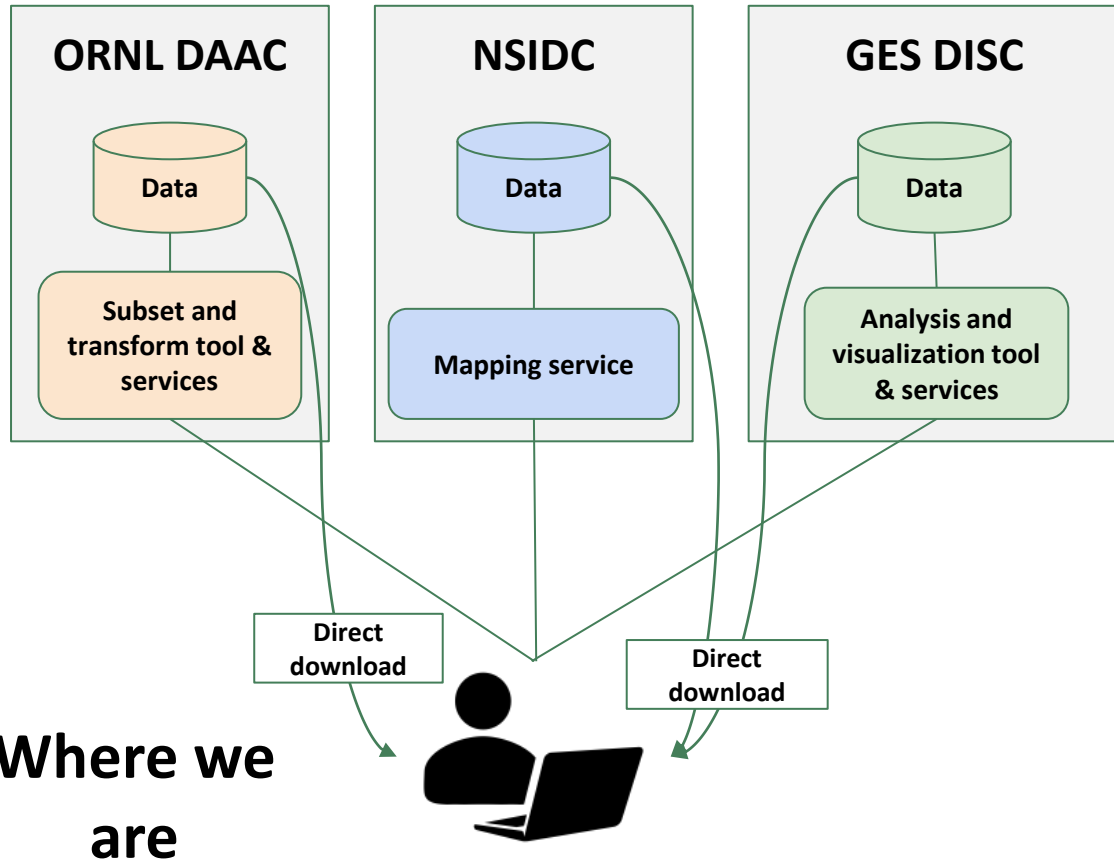
To unsubscribe from these notifications, or if you have any questions, please contact us at cmr-support@earthdata.nasa.gov.

- Approximately 1 week lag time between publishing on the ORNL DAAC website and the Earthdata Cloud
- Not clear if the dataset is new or updated

Earthdata Cloud



<https://earthdata.nasa.gov/eosdis/cloud-evolution>



What will stay the same?

- All NASA Earth Science data will still be free and open to public.
- Existing data services (including direct download) will continue to work without disruption

What will change?

- It will be easier for DAACs to collaborate and develop tools that work with more datasets, now that they always have direct access to each other's data.
- New options for analyzing data and developing tools "in place" in the cloud, without needing to download data.

Earthdata Cloud Migration Status

- The ORNL DAAC has migrated about 87% of our data (by volume)
- All finalized Delta-X data are available in Earthdata Cloud
 - Preprint data are not in Earthdata Cloud
 - Data are available both on-prem and in Earthdata Cloud
 - S3 direct access is available in AWS us-west-2 region

The screenshot displays the Earthdata Search interface. The search results for 'Delta-X: AVIRIS-NG L3-derived Water Quality, TSS, and Turbidity, MRD, LA 2021, V2' are shown. A red box highlights the 'Cloud Access' section, which includes the following information:

- Cloud Access**
- Available for access in-region with AWS Cloud
- Region: **us-west-2**
- Bucket/Object Prefix: **s3://ornl-cumulus-prod-protected/deltax/DeltaX_L3_AVIRIS-NG_Water_V2/**
- AWS S3 Credentials
- [Get AWS S3 Credentials](#)
- [Documentation](#)

The map on the right shows the location of the data in the MRD, LA area, with a green box indicating the specific region of interest.

On-going Efforts

- Converting data into “cloud-optimized” formats
 - Cloud-optimized GeoTIFF (CoG), NetCDF, Zarr, etc.
- Making data available through ESDIS Enterprise Tools & Services
 - [OPeNDAP](#), [Harmony](#), Enterprise GIS, etc.
 - Support on-the-fly data visualization, subsetting, transformation, etc.

```
### Retrieve data
for key in insitu_to_pixel:
    print('key: ', key)
    if key in tss_values_aviris:
        print('In Situ data: ', tss_values_insitu[key], ' AVIRIS data: ', tss_values_aviris[key])
    else:
        tss_values_insitu[key] = data_insitu.iloc[key]['tss_concentration']
        aviris_fn = insitu_to_aviris[key]['filename']

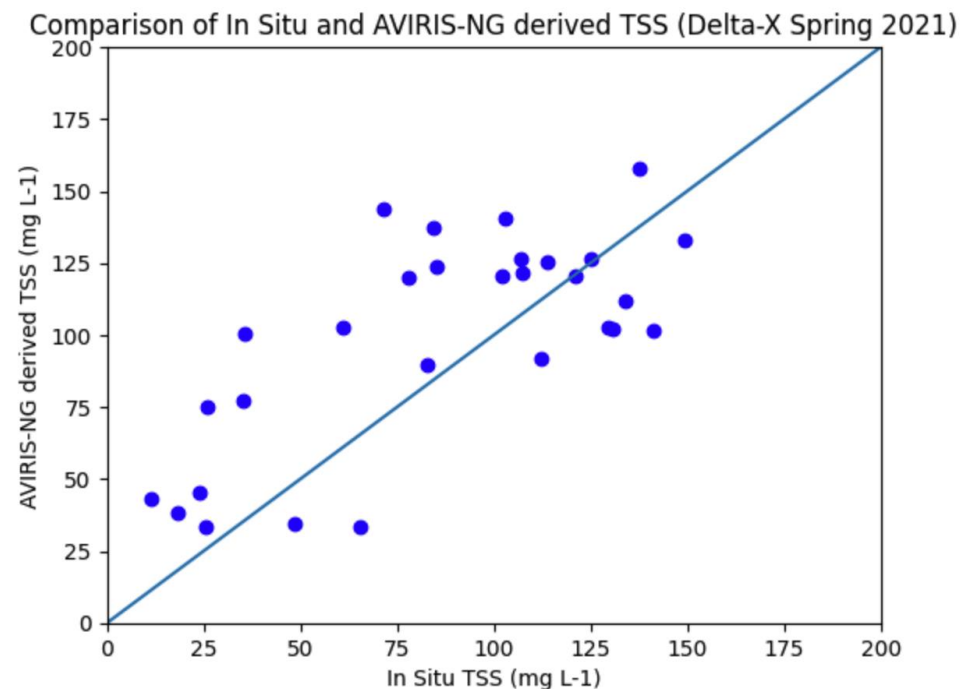
        print(insitu_to_aviris[key]['opendap'])
        dap_dataset = open_url(insitu_to_aviris[key]['opendap'])
        var_tss = dap_dataset['TSS_loglog_PLSR7_380_900_nm']
        var_wmask = dap_dataset['Water_Mask']
        var_cmask = dap_dataset['Cloud_Mask']

        x = insitu_to_pixel[key]['x']
        y = insitu_to_pixel[key]['y']
        print('x: ', x, ', y: ', y)

        tss_aviris = float(var_tss[x-1:x, y-1:y].data)
        wmask_aviris = float(var_wmask[x-1:x, y-1:y].data)
        cmask_aviris = float(var_cmask[x-1:x, y-1:y].data)

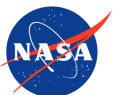
        if tss_aviris > -9999 and wmask_aviris == 1 and cmask_aviris == 0:
            tss_values_aviris[key] = tss_aviris
            print('AVIRIS data: ', tss_aviris, ', Water mask: ', wmask_aviris, ', cloud mask: ', cmask_aviris)
        else:
            tss_values_aviris[key] = -9999.0
            print('Invalid AVIRIS data values. AVIRIS data: ', tss_aviris, ', Water mask: ', wmask_aviris, ', cloud mas

        print('In Situ data: ', tss_values_insitu[key], ' AVIRIS data: ', tss_values_aviris[key])
```



Get more from the ORNL DAAC

- ORNL DAAC Learning Resources: <https://daac.ornl.gov/resources/learning/>
- Questions/Help: <https://forum.earthdata.nasa.gov/>
- NASA EOSDIS Social Media
 - [Twitter](#)
 - [Facebook](#)
 - [YouTube](#)



END

