



ESS-DIVE for PIs and Data Managers

Presenter



Madison Burrus

Computer Systems Engineer

Welcome!

Audience Introductions

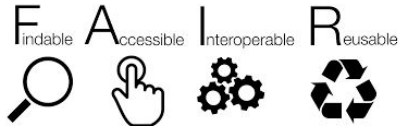
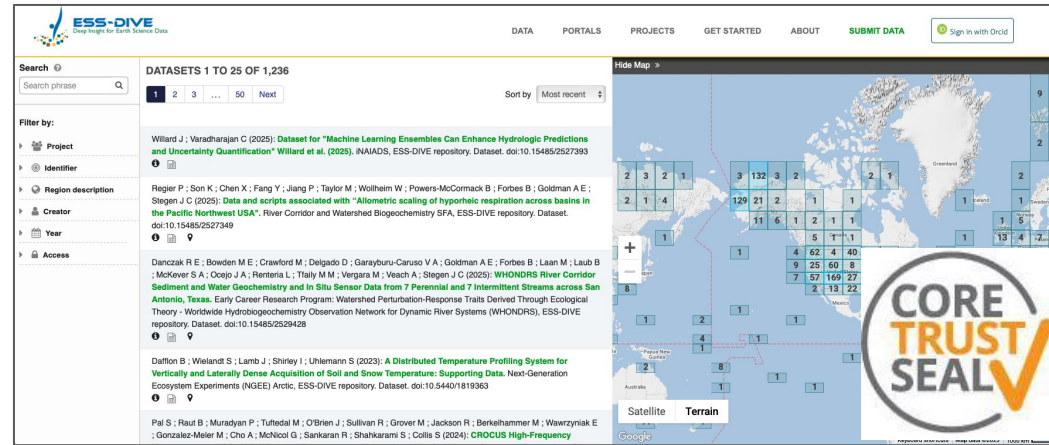
ESS-DIVE is the Primary Data Repository for DOE's Environmental System Science (ESS) Program



Mission:

Preserve, expand **access**
to, and improve **usability**
of **ESS data**

data.ess-dive.lbl.gov



Use of ESS-DIVE is **mandatory** for ESS project data management plans

ESS-DIVE Reports Publication Progress to DOE



Data publication progress **per project** and total data use metrics

SUM of count	year		month	
project	2025	2025	2025	2025 Total
Next-Generation Ecosystem Experiments (NGEE) Arctic	7	10	6	23
Rewriting the Redox Paradigm: Dynamic hydrology shapes nutrient and element transformations in a Great Lakes Coastal Estuary		2	3	5
Next-Generation Ecosystem Experiments (NGEE) Tropics	1	3	1	5
Watershed Function SFA				
ORNL Terrestrial Ecosystem Science SFA				
Sticky Roots â€” Implications of Altered Rhizodeposition (Driven by Cryptic, Viral Infection of Plants) for the Fate of Rhizosphere Mineralâ€” Organic Matter Associations in Natural Ecosystems				
River Corridor and Watershed Biogeochemistry SFA				
Synthesis of existing tropical root data: How do natural, episodic disturbances alter tropical forest carbon cycles via changes in belowground dynamics?				
Southwest Urban Corridor Integrated Field Laboratory (SW-IFL)				
Investigating hydrologic connectivity as a driver of biogeochemical flood response in wetland systems				
Integrating tree hydraulic trait, forest stand structure, and topographic controls on ecohydrologic function in a Rocky Mountain subalpine watershed				
iNAIADS				
Free Air CO2 Enrichment Model Data Synthesis (FACE-MDS)				
Dissection of Carbon and Nitrogen Cycling in Post-Fire Soil Environments using a Genome-Informed Experimental Community (DE-SC0020351)				
Decoding the unifying microbial metabolic controllers on soil carbon cycling across freshwater wetlands (DE-SC0023084)				
COMPASS-FME				
Coastal Wetland Carbon Cycling Processes in a Warmer Climate			1	1
Belowground Biogeochemistry Scientific Focus Area	1			1
AmeriFlux Management Project		1		1

ESS-DIVE is here to help!

As of March 19th, 2025



USERS

419

Registered users

100

Contributing projects

278

Events



DATA

1215

Public datasets

283

Private datasets

13.6 TB

Total file size



USAGE

594K

File downloads

1M

Data views

16

Public portals

Objectives



1. ESS-DIVE Feature Overview for:
 - a. Data Submission & Publication
 - b. Project Management Setup
 - c. Data Portals
 - d. Reporting progress to DOE
2. Checklist for PIs

Q&A welcome at
anytime!




Key Takeaway: *Learn what is currently possible on ESS-DIVE and become aware of what we are working on!*

Data Submission

Data Submission


There are three ways to upload data to ESS-DIVE

	Upload Method	File volume	No. of files
Intuitive	Data Submission Web Form	< 10 GB	< 100
Program matic	Dataset API	< 99 GB*	< 100
Large Data	Globus Data Transfer Service  globus	> 99 GB*	> 100

**Email us to upload more than 10GB*

Data Submission

There are three ways to upload data to ESS-DIVE

	Upload Method	File volume	No. of files
Intuitive	Data Submission Web Form	< 10 GB	< 100
Programmatic	Dataset API	< 99 GB*	< 100
Large Data	Globus Data Transfer Service  globus	> 99 GB*	> 100

We have example code!

**Email us to upload more than 10GB*

Linking to Data on Other Systems

Store specialized data types where it makes the most sense scientifically and **connect to ESS-DIVE for search and discovery**

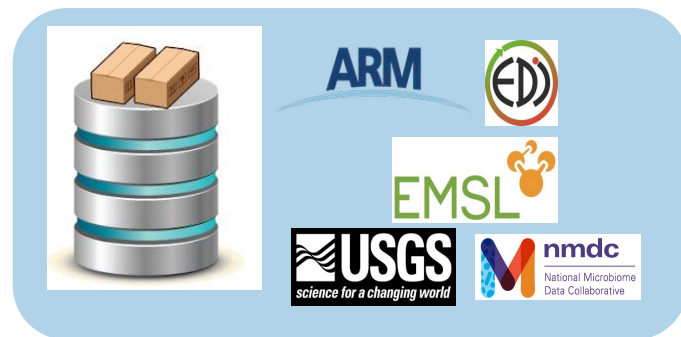
Downloads 29
Citations 0
Views 24
Copy Citation
Assessment report

Files in this dataset Package: ess-dive-44b1b49c5d7a7ff-20220414T225915865

Name	File type	Size	Download All
Metadata: Snow_depth_sensor_measurement_data_for_Upper_Sub.xml	EML v2.2.0	15 KB	Download

External Links to Data or Metadata

External links for this dataset		
Description	Relationship	URL
doi:10.6073/pasta/388c70359c8d0cd79dc3875d6510071d	[same as] Original publication of this dataset (where the data+metadata can be found)	https://doi.org/10.6073/pasta/388c70359c8d0cd79dc3875d6510071d



Come talk to us to
get started!

*Link your ESS-DIVE datasets to project data on:
GitHub, project data archives, institutional repositories*

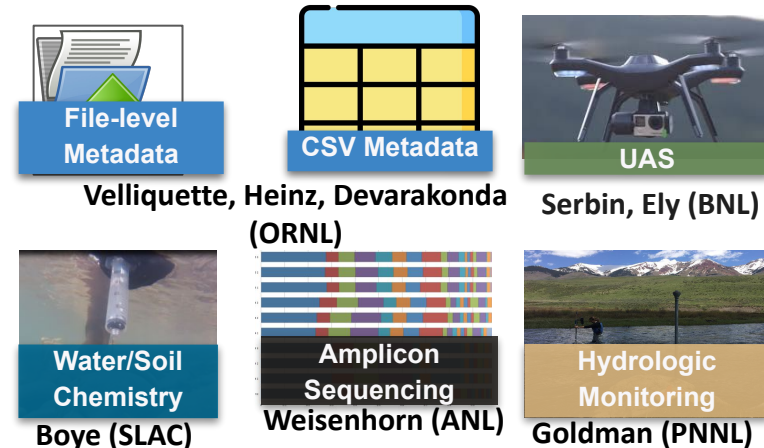
Data Curation with Reporting Formats

Reporting formats are instructions, templates, and tools for consistently formatting data within a discipline.

These data standards were developed by ESS-DIVE and **ESS-DIVE Partner Projects** to standardize metadata and data files of data types commonly collected by DOE ESS projects.

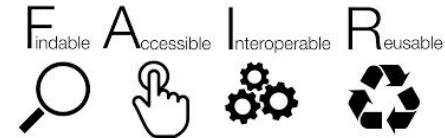
No. of Reporting Formats available:

- **High-level, wide-range of data types: 6**
- **Data type specific: 6**

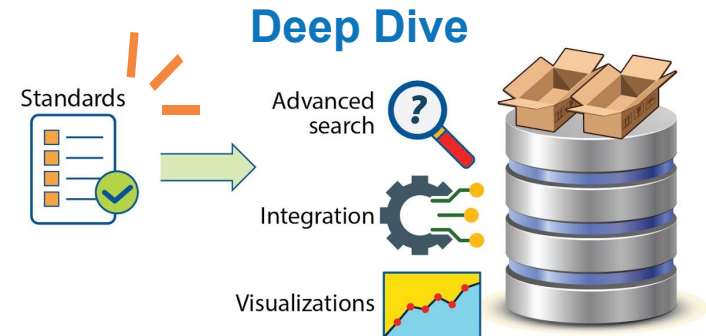


Benefits of Reporting Formats to ESS Science

- Improves both human- and machine-**readability**
- Makes data more reusable **within a project**
- Enables data **synthesis** and **analysis**
- **Parsable standards** enable advanced search



Planned ESS-DIVE tools for advanced data search, integration, and visualization **will be based around these reporting formats**



Suggestions for Getting Started

Start with one reporting format:
File Level Metadata (FLMD)

Get a head start: Adopting reporting formats is easier before publication

Check whether any reporting formats apply to your data types

More capabilities to come!

Adopt reporting formats to take advantage of future programmatic tools

<https://go.lbl.gov/essdive-RFChecklist>

Need Help? ESS-DIVE Data Curation Support



Assist ESS-DIVE data contributors in how to curate high-quality datasets using:

- Reporting Formats
- Improve data curation workflows
- Provide training or advice regarding data management

Available until September 2025

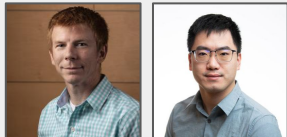


Kim Ely

ESS-DIVE Partner Project
LBNL

Take advantage of this opportunity now while you can!

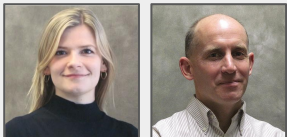
Engaging ESS Projects to Make it Easier to Curate and Use High-Quality ESS Data



Improving ATS Model Data Archiving
Coon (ORNL) & Li (PNNL)



Hydrological Formats Revision
Goldman & Forbes (PNNL)



Sensor Format & Tools; Soil Respiration Format Revision
Pennington & Bond-Lamberty (PNNL)

Send in your feedback!



Partner Projects are developing:

- Improved **model data** management and archiving standards (ATS)
- New data/metadata standards for **sensor data** and revision of Soil respiration standard
- Revise Hydrologic metadata standards for **enhanced integration**
- Tools to **automatically generate** standardized metadata files

Poster Session IV

Day 3 | Thu April 17 8:30am - 10:00am

Location: Grand Ballroom D-F, Poster Number 8

Help Shape ESS Data Standards!

Have a direct impact on the standard design by **participating in surveys** and **providing feedback**

- What specific data/variables do you collect?
- Frequency, file formats?
- Challenges?

SENSOR DATA



NEW!

*Tools to
automate
formatting!*

MODEL DATA ARCHIVING



Improved!

HYDROLOGIC MONITORING



Integrated!

SOIL RESPIRATION



Revised!

Poster no. 8

Data Review & Publication

Track Dataset Status

All Available Statuses

DOI Status

Dataset Status



No DOI
Added



Drafting



Reserved



In Review



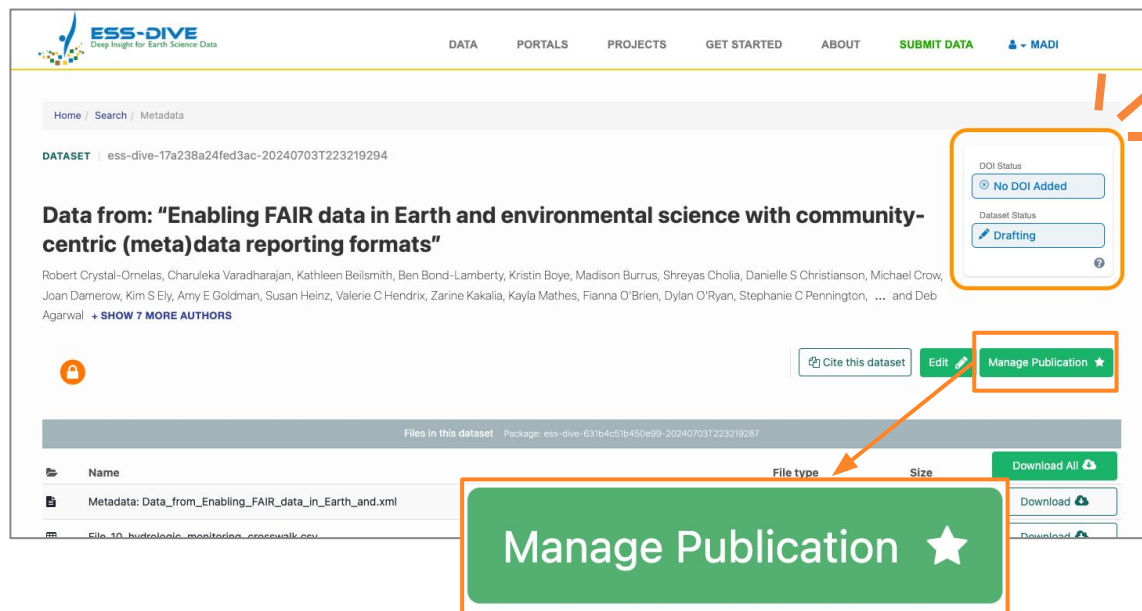
Active



Published

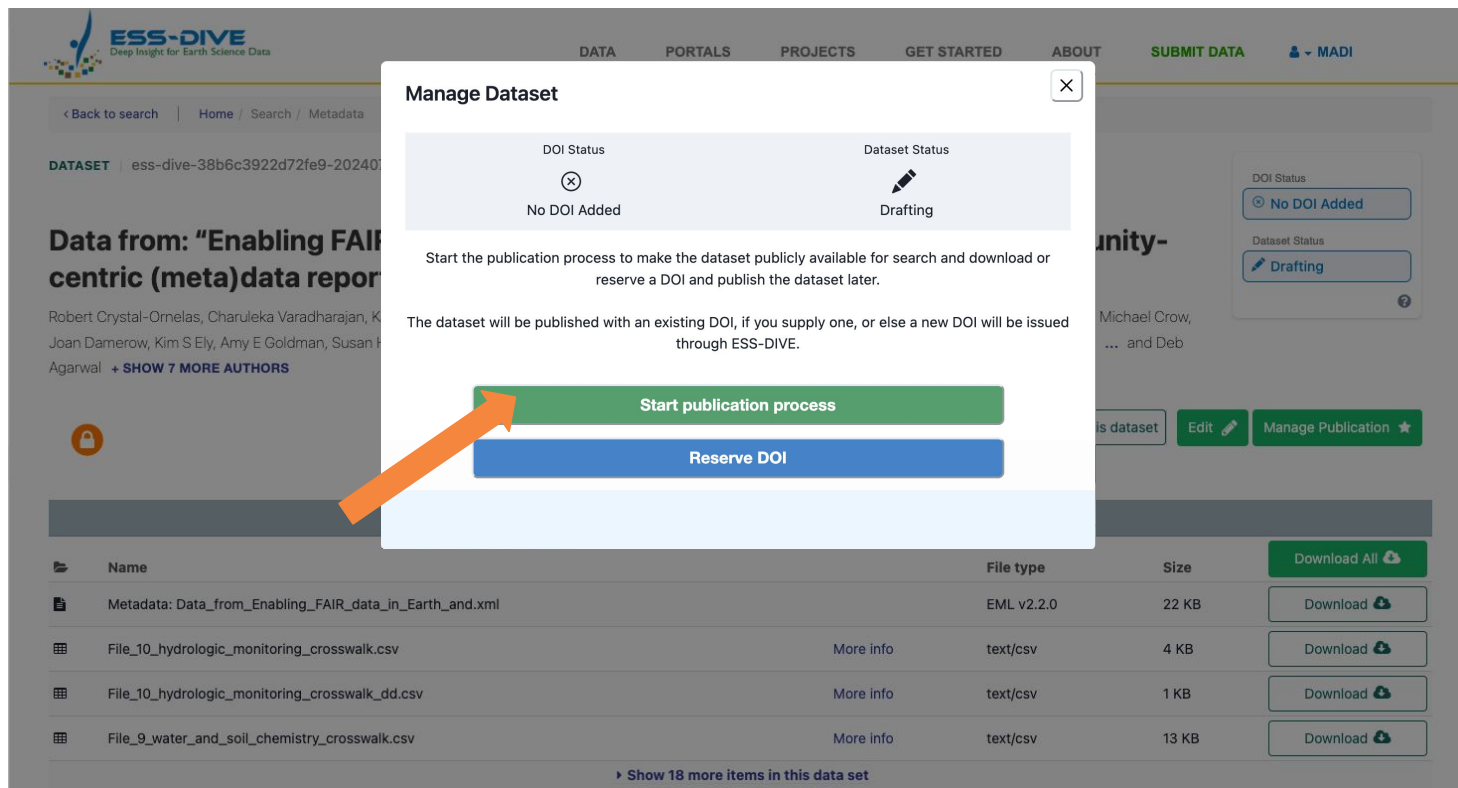


Non
ESS-DIVE DOI



The screenshot shows the ESS-DIVE dataset page for the dataset ID 'ess-dive-17a238a24fed3ac-20240703T223219294'. The page title is 'Data from: "Enabling FAIR data in Earth and environmental science with community-centric (meta)data reporting formats"'. The authors listed are Robert Crystal-Ornelas, Charuleka Varadharajan, Kathleen Beilsmith, Ben Bond-Lamberty, Kristin Boye, Madison Burrus, Shreyas Cholia, Danielle S Christianson, Michael Crow, Joan Damerow, Kim S Ely, Amy E Goldman, Susan Heinz, Valerie C Hendrix, Zarine Kakalia, Kayla Mathes, Fianna O'Brien, Dylan O'Ryan, Stephanie C Pennington, ... and Deb Agarwal. The page includes a 'Cite this dataset' button, an 'Edit' button, and a 'Manage Publication' button. The 'Manage Publication' button is highlighted with an orange box, and an arrow points from it to a larger green box labeled 'Manage Publication' with a star icon. The page also shows a table of files in the dataset, including 'Metadata: Data_from_Enabling_FAIR_data_in_Earth_and.xml' and 'File 10_hydrologic_monitoring_processwalk.pdf'.

Streamlined Publication Process



The screenshot shows the ESS-DIVE website with a 'Manage Dataset' modal open. The modal contains the following information:

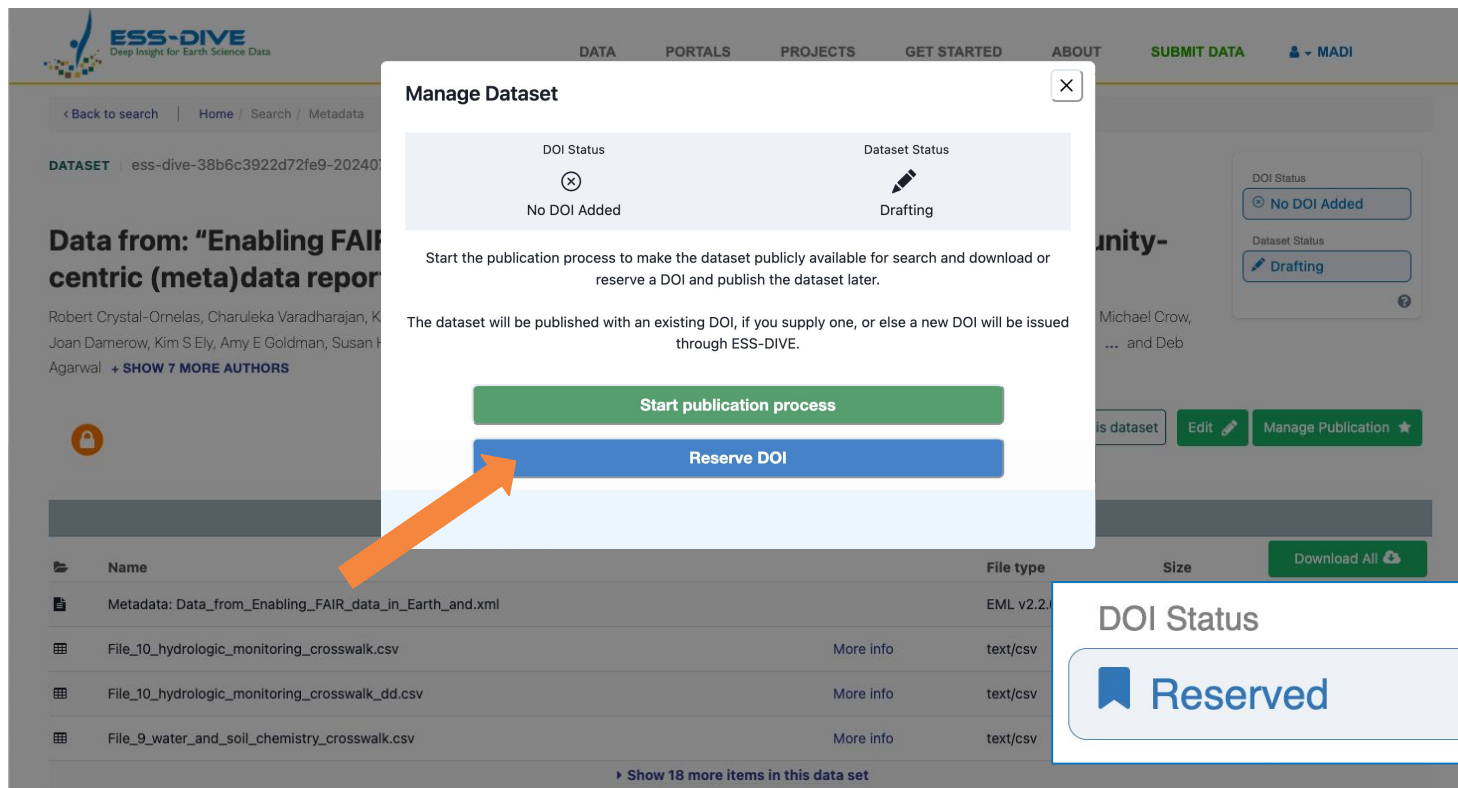
- DOI Status:** No DOI Added (indicated by a circled X icon)
- Dataset Status:** Drafting (indicated by a pencil icon)
- Instructions:** Start the publication process to make the dataset publicly available for search and download or reserve a DOI and publish the dataset later.
- Note:** The dataset will be published with an existing DOI, if you supply one, or else a new DOI will be issued through ESS-DIVE.
- Buttons:** 'Start publication process' (green) and 'Reserve DOI' (blue).

An orange arrow points to the 'Start publication process' button. The background shows a dataset page for 'Data from: "Enabling FAIR data in Earth and Environmental Science" (meta)data report' by Robert Crystal-Ornelas et al.

Name	File type	Size	Download All
Metadata: Data_from_Enabling_FAIR_data_in_Earth_and.xml	EML v2.2.0	22 KB	Download
File_10_hydrologic_monitoring_crosswalk.csv	text/csv	4 KB	Download
File_10_hydrologic_monitoring_crosswalk_dd.csv	text/csv	1 KB	Download
File_9_water_and_soil_chemistry_crosswalk.csv	text/csv	13 KB	Download

► Show 18 more items in this data set

Reserve DOIs



The screenshot shows the ESS-DIVE 'Manage Dataset' modal. The modal has a title bar with a close button. Inside, there are two status sections: 'DOI Status' showing 'No DOI Added' with a circled X icon, and 'Dataset Status' showing 'Drafting' with a pencil icon. Below these, there is instructional text: 'Start the publication process to make the dataset publicly available for search and download or reserve a DOI and publish the dataset later.' and 'The dataset will be published with an existing DOI, if you supply one, or else a new DOI will be issued through ESS-DIVE.' At the bottom of the modal are two buttons: 'Start publication process' (green) and 'Reserve DOI' (blue). An orange arrow points to the 'Reserve DOI' button. In the background, the dataset page is visible, showing the title 'Data from: "Enabling FAIR-centric (meta)data reports"', authors, and a table of files. A separate inset box on the right shows the 'DOI Status' as 'Reserved' with a blue bookmark icon.

Manage Dataset

DOI Status: No DOI Added

Dataset Status: Drafting

Start the publication process to make the dataset publicly available for search and download or reserve a DOI and publish the dataset later.

The dataset will be published with an existing DOI, if you supply one, or else a new DOI will be issued through ESS-DIVE.

Start publication process

Reserve DOI

DOI Status

Reserved

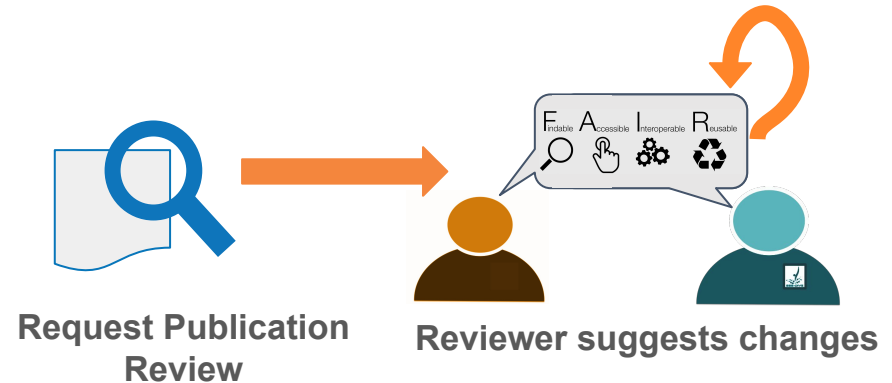
Name	File type	Size
Metadata: Data_from_Enabling_FAIR_data_in_Earth_and.xml	EML v2.2.0	
File_10_hydrologic_monitoring_crosswalk.csv	text/csv	
File_10_hydrologic_monitoring_crosswalk_dd.csv	text/csv	
File_9_water_and_soil_chemistry_crosswalk.csv	text/csv	

Metadata Review Process

- Personalized **1:1 dataset reviews** with **ESS-DIVE team**

Dataset Status

 In Review



Plan ahead: Expect 1-2 week minimum for review

Metadata Review Process

- Personalized **1:1 dataset reviews with ESS-DIVE team**
- Recommended Tool: **Automated** Metadata Assessment Report



Assessment report

Dataset Status



Drafting

After running your metadata against our standard set of metadata, data, and congruency checks, discoverability and reusability of your research data by addressing the issues below.



Findable: 100% complete

Accessible: 100% complete

Reusable: 100% complete

Interoperable: 100% complete

▶ Passed 19 checks out of 19 (informational checks not included).

▶ Warning for 0 checks.

▼ Failed 0 checks.

▶ 3 informational checks.

Receive immediate **feedback** while preparing dataset metadata

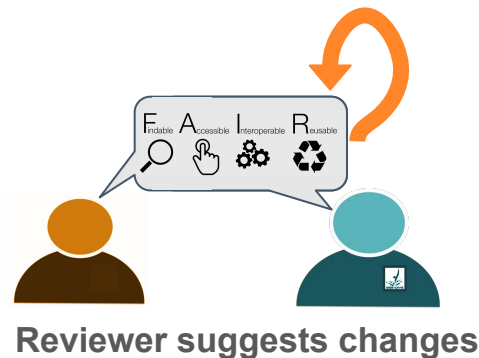
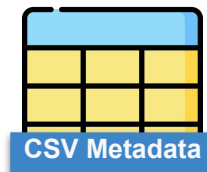
Plan ahead: Expect 1-2 weeks for review minimum

Reporting Format (File) Content Review

- **Automated validation** for File Level Metadata and CSV files
- **Manual** reviews dataset metadata components

Dataset Status

 In Review



Why do we do this?

To ensure RF files can be parsed for advanced search and discovery

Plan ahead: Expect 1-2 week minimum for review

Cite Datasets in Your Papers



Data Availability Statement and References sections

DATASET | doi:10.15485/2530791, version: ess-dive-0f757d6dc5c65ca-20250318T193431203

Water quality data collected from the Muskegon River (MI, USA) using AquaBOT June-July 2024

Wendy Robertson, Daria Kluver, and Roderick Lammers

Downloads 0

Citations 0

Views 0

Cite this dataset

Assessment report

Edit

Files in this dataset Package: ess-dive-20c6034b933901b-20250318T193431189

Files and Folders	Size	Type	Metrics	Actions
Water quality data collected from the Muskegon River (MI, USA) using AquaBOT June-July 2024.				
Metadata: Water quality data collected from the Muskegon River (MI, USA) using AquaBOT June-July 2024.	9 KiB	EML v2.2.0		
aquaBOT2024_MuskegonRiver.csv	55 KiB	text/csv		

DOI Status

Active

Dataset Status

Published

?

Cite Datasets in Your Papers



Data Availability Statement and References sections

DATASET | doi:10.15485/2530791, version: ess-dive-0f757d6dc5c65ca-20250318T181818

Water quality data collected from the Muskegon River (MI, USA) using AquaBOT June-July 2024

Wendy Robertson, Daria Kluver, and Roderick Lammers

Downloads 0

Citations 0

Views 0

Cite this dataset

Assessment report

Edit

Files in this dataset Package: ess-dive-20c6034b933901b-20250318T193431189

Files and Folders	Size	Type	Metrics	Actions
Water quality data collected from the Muskegon River (MI, USA) using AquaBOT June-July 2024.				
Metadata: Water quality data collected from the Muskegon River (MI, USA) using AquaBOT June-July 2024.	9 KiB	EML v2.2.0		
aquaBOT2024_MuskegonRiver.csv	55 KiB	text/csv		

Cite this Dataset

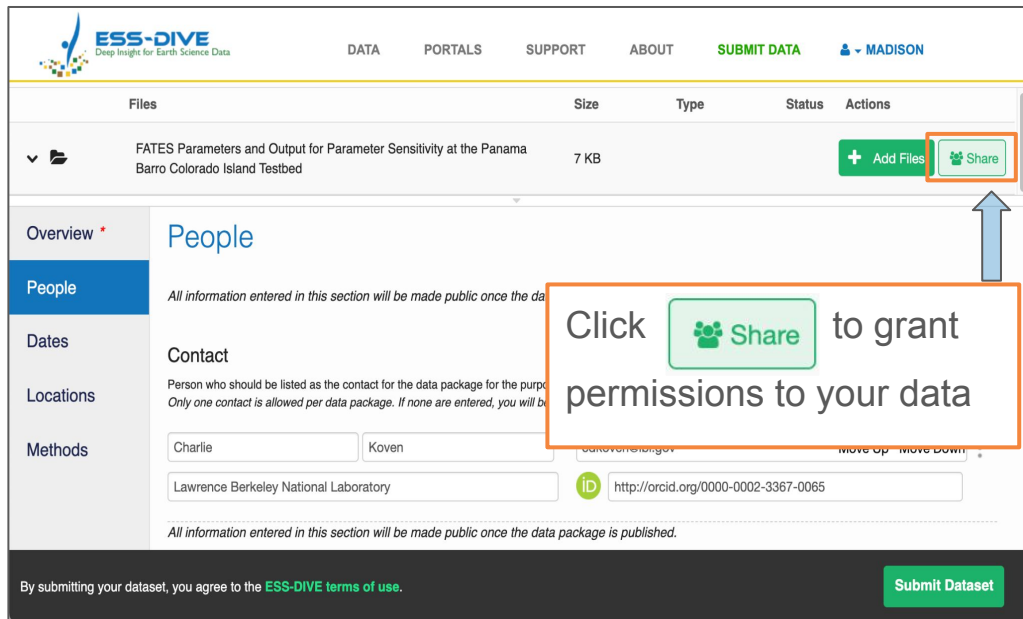
Robertson W ; Kluver D ; Lammers R (2025): Water quality data collected from the Muskegon River (MI, USA) using AquaBOT June-July 2024. Expanding Collaborative Capacity to Address Climate Resiliency in the Great Lakes Region (DE-SC0023215), ESS-DIVE repository. Dataset. doi:10.15485/2530791 accessed via <https://data.ess-dive.lbl.gov/datasets/doi:10.15485/2530791> on 2025-04-14

Copy To Clipboard

Data Management Setup

Share Datasets

Sharing enables teams of scientists to build, curate, and publish datasets together



ESS-DIVE
Deep Insights for Earth Science Data

DATA PORTALS SUPPORT ABOUT **SUBMIT DATA** **MADISON**

Files	Size	Type	Status	Actions
FATES Parameters and Output for Parameter Sensitivity at the Panama Barro Colorado Island Testbed	7 KB			+ Add Files Share

Overview **People**

People
All information entered in this section will be made public once the data package is published.

Dates

Locations

Methods

Contact
Person who should be listed as the contact for the data package for the purpose of communication. Only one contact is allowed per data package. If none are entered, you will be listed as the contact.

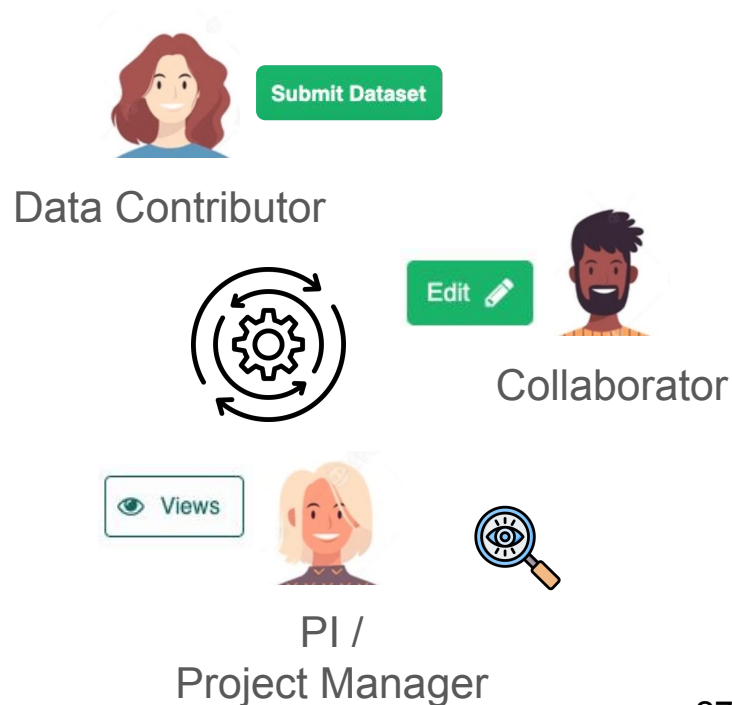
Charlie Koven
Lawrence Berkeley National Laboratory <http://orcid.org/0000-0002-3367-0065>

All information entered in this section will be made public once the data package is published.

By submitting your dataset, you agree to the [ESS-DIVE terms of use](#). [Submit Dataset](#)




Share with teams and individuals



Teams provide an easier way to share with your project





ESS-DIVE
Open insight for Earth Science Data

DATA PORTALS PROJECTS GET STARTED ABOUT [SUBMIT DATA](#) [Dylan P.](#)

ess-dive-data-managers

Group

Group id: ess-dive-data-managers

contributions

downloads

3 members

Madison R. Burrus

<http://orcid.org/0000-0002-0439-9173>

Dylan P. O'Ryhan (Me)

<http://orcid.org/0009-0006-6124-6583>

Emily Ann Robles

<http://orcid.org/0009-0002-3285-2198>

DATASETS 1 TO 5 OF 7

Sort by

Most recent

Damerow J.; Varadharajan C.; Boyle K.; Brodie E.; Burrus M.; Chadwick D.; Cholla S.; Crystal-Ornelas R.; Elbasshandy H.; Eloy Alves R.; Ely K.; Goldman A.; Hendrix V.; Jones C.; Jones M.; Kakalia Z.; Kemner K.; Kersting A.; Maher K.; Merino N.; O'Brien F.; Perzan Z.; Robles E.; Snavely C.; Sorensen P.; Stagen J.; Weisenhorn P.; Whitenack K.; Zavarini M.; Agarwal D. (2020): [Sample Identifiers and Metadata Reporting Format for Environmental Systems Science](#). Environmental Systems Science Data Infrastructure for a Virtual Ecosystem (ESS-DIVE). ESS-DIVE repository. Dataset. doi:10.15485/1660470

1

Weisenhorn P.; Beltsmith K. (2022): [ESS-DIVE Reporting Format for Amplicon Abundance Table](#). Environmental Systems Science Data Infrastructure for a Virtual Ecosystem (ESS-DIVE). ESS-DIVE repository. Dataset. doi:10.15485/1865729

2

Crystal-Ornelas R.; Varadharajan C.; Beltsmith K.; Bond-Lamberty B.; Boyle K.; Burrus M.; Cholla S.; Christianson D. S.; Crow M.; Damerow J.; Ely K. S.; Goldman A.; Heinz S.; Hendrix V. C.; Kakalia Z.; Mathes K.; O'Brien F.; O'Ryhan D.; Perzan S. C.; Robles E.; Rogers A.; Simmonds M.; Velleguete J. N.; Weisenhorn P.; Welch J. N.; Whitenack K.; Agarwal D. (2022): [Data from: "Enabling FAIR data in Earth and environmental science with community-centric \[meta\]data reporting formats"](#). Environmental Systems Science Data Infrastructure for a Virtual Ecosystem (ESS-DIVE). ESS-DIVE repository. Dataset. doi:10.15485/1866606

3

Crystal-Ornelas R.; O'Ryhan D.; Christianson D.; Hendrix V. C.; Agarwal D.; Varadharajan C. (2022): [ESS-DIVE Reporting Format for Location Metadata](#). Environmental Systems Science Data Infrastructure for a Virtual Ecosystem (ESS-DIVE). ESS-DIVE repository. Dataset. doi:10.15485/1866730

4

Boyle K.; Crystal-Ornelas R.; O'Ryhan D.; Christianson D.; Hendrix V. C.; Agarwal D.; Varadharajan C. (2022): [Sample-based Water and Soil Metadata Reporting Format for Environmental Systems Science](#). Environmental Systems Science Data Infrastructure for a Virtual Ecosystem (ESS-DIVE). ESS-DIVE repository. Dataset. doi:10.15485/1866730

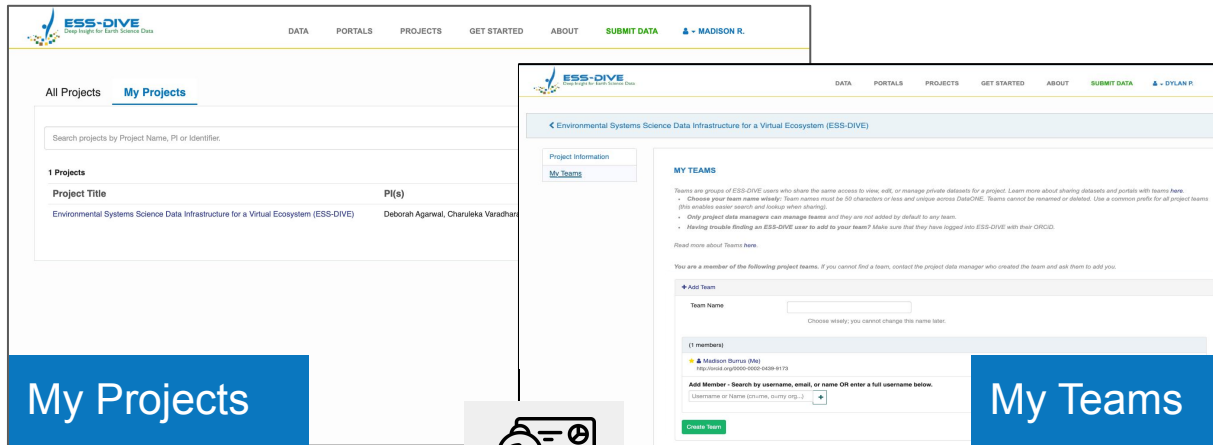
5

1. Share datasets with a team

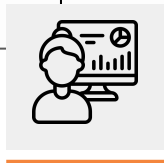
New team members get immediate access to all project datasets!

PIs and Project Data Managers

A PI or project data manager **is a role** in ESS-DIVE that **enables someone to create and manage** teams.



★ PI must approve managers



Approved project managers gain access to your project page



Create teams for your project

Benefits of Sharing Datasets

- **Visibility:** Team members can share datasets with PIs or data managers to allow them to see private project datasets on ESS-DIVE and report that to DOE
- **Informed curation:** Sharing gives PIs the opportunity to help curate datasets before publication according to project needs

DATASETS 6 TO 10

Prev 1 2 3 4 ... 238 Next

Sort by Most recent

Forbes B (2024): PNNL - UA ICR File Transfers . River Corridor and Watershed Biogeochemistry SFA, ESS-DIVE repository. Dataset. ess-dive-add87b336c9116a-20240411T202938589	
Bao J ; Song X ; Chen Y ; Fang Y ; Perkins W ; Powers-McCormack B ; Duan Z ; Ren H (2024): Data and scripts associated with a manuscript on residence time distribution simulation in two 10-kilometer long river sections . River Corridor and Watershed Biogeochemistry SFA, ESS-DIVE repository. Dataset. ess-dive-b4400a151bd3b3b-20240411T200027496	
Lamour J ; Davidson K ; Ely K ; Anderson J ; Rogers A ; Serbin S (2021): Leaf structural and chemical traits, and BNL field campaign sample details, San Lorenzo, Panama, 2020 . Next-Generation Ecosystem Experiments (NGEE) Tropics, ESS-DIVE repository. Dataset. ess-dive-2c71da14627e5e5-20240410T234246598	
Lamour J ; Davidson K ; Ely K (2024): Canopy reflectance spectroscopy, thermal images and digital photographs, San Lorenzo, Panama, 2020 . Next-Generation Ecosystem Experiments (NGEE) Tropics, ESS-DIVE repository. Dataset. ess-dive-24da4ea7b1a96f0-20240410T234111560	

18
Public

6
Private




PI/
Project Manager

Any missing
information?

Viewing Project Data Collection

Data Portals: enhance how you view data



Worldwide Hydrobiogeochemistry Observation Network for Dynamic River Systems

Discover datasets associated with the Worldwide Hydrobiogeochemistry Observation Network for Dynamic River Systems (WHONDRS)

About Data Metrics

Search

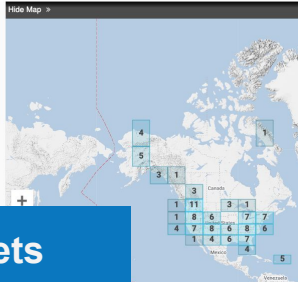
Search these datasets

DATASETS 1 TO 18 OF 18


Sort by: Most recent

Torgeson J M, Bamalakida T, Bates T L, Chu R, Crump B C, Danczak R E, Forbes B, Garayburu-Caruso V A, Goldman A E, Logozzo L, Maavara T, Martin E W, McKee S A, Raymond P A, Renteria L, Toyoda J O, Stegen J C (2022): WHONDRS Surface Water Dissolved Organic Carbon and FTICR-MS across Stream Orders in Four United States Watersheds in 2019 and 2020. River Corridor and Watershed Biogeochemistry SFA, ESS-DIVE repository. Dataset. doi:10.15468/189155

Garayburu-Caruso V A, Goldman A E, Toyoda J O, Chu R, Renteria L, Stegen J C, Bengtsson A, Torgeson J M, Wili K, Ross M (2022): FTICR-MS Data from Global Inland River Water and Sediment and from Coastal River Fresh and Saline Sediment Associated with "Functional Trait Relationships in Organic Matter are Conserved in River Corridors Across Continents". Early Career Research Program: Watershed Perturbation-Response Traits Derived Through Ecological Theory, ESS-DIVE repository. Dataset. doi:10.15468/182422



Collection of Datasets



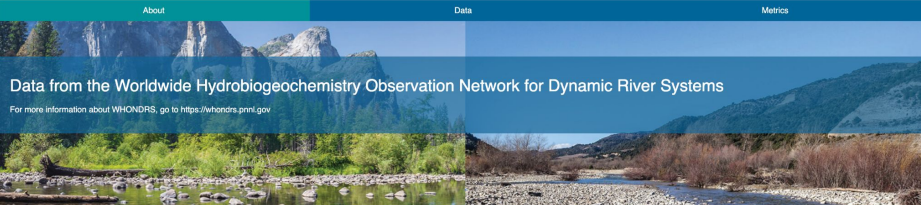
Worldwide Hydrobiogeochemistry Observation Network for Dynamic River Systems

<https://whondrs.pnnl.gov>

About Data Metrics

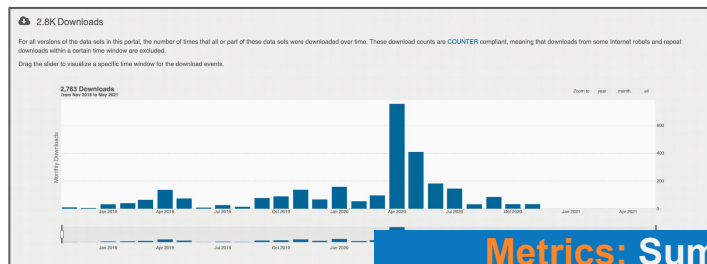
Data from the Worldwide Hydrobiogeochemistry Observation Network for Dynamic River Systems

For more information about WHONDRS, go to <https://whondrs.pnnl.gov>



Custom Descriptive Pages

coupled hydrologic, biogeochemical, and microbial function within river corridors, with an around understanding these coupled systems from local to global scales and ultimately to



Metrics: Summary of Holdings, View/Download/Citation Counts

234 Citations

For all versions of the data sets in this repository, the number of citations reported to DataONE.

Christian Schöbe and Michael Ruther. 2018. Methanogenesis from Carbon Monoxide. Biogenesis of Hydrocarbons. pp. 1-29. https://doi.org/10.1007/978-3-319-53114-4_6-1. Cites Data: (T. J. Bleasing 2013).

George Brett RUNION, Stephen A. PRIOR, Tyler A. MONDAY, and Janice RYAN-BOHAC. 2018. Effects of Elevated CO₂ on Growth of the Industrial Sweetpotato Cultivar CX-1. Environment Control in Biology. Vol. 56, pp. 89-92. <https://doi.org/10.2525/ecs.56.89>. Cites Data: (Ralph F. Keeling et al. 2009).

Kieran M. Stanley, Aofie Grant, Simon O'Doherty, Dickon Young, Alastair J. Manning, et al. 2018. Greenhouse gas measurements from a UK network of tall towers: technical description and first results. Atmospheric Measurement Techniques. Vol. 11, pp. 1437-1458. <https://doi.org/10.5194/amt-11-1437-2018>. Cites Data: (R. Prinn et al. 2001).

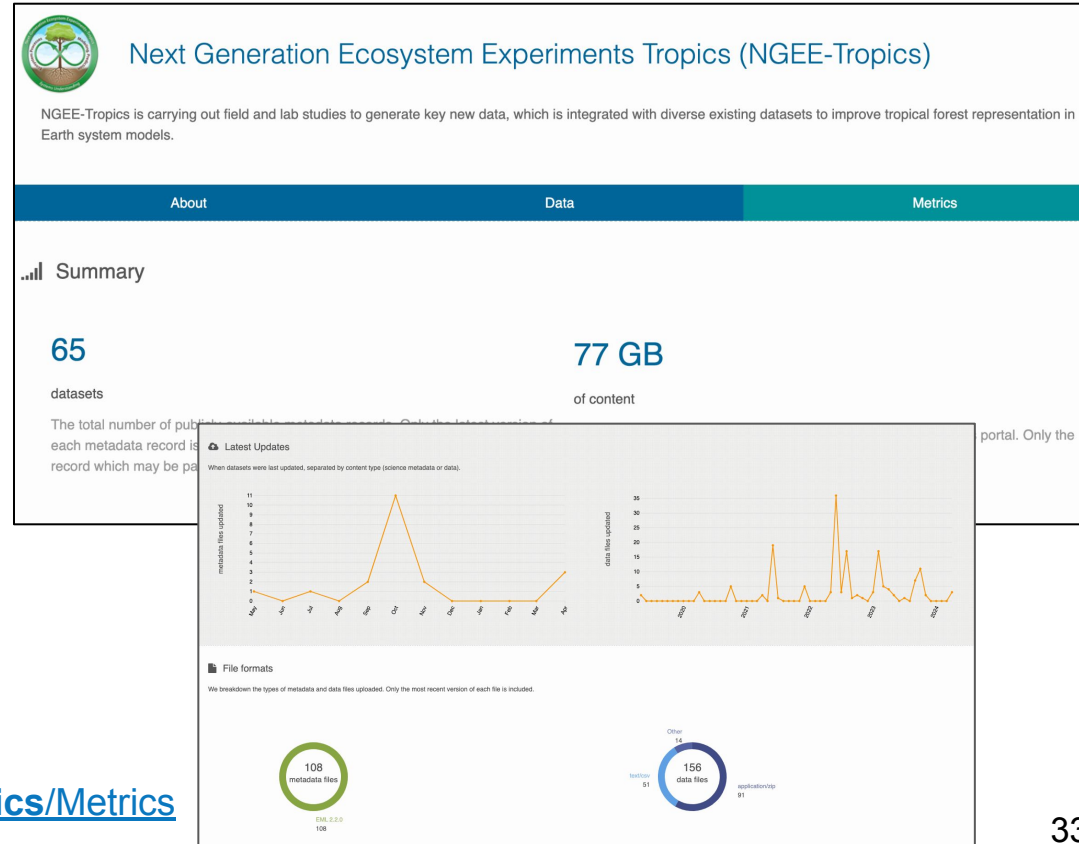
R. Lekhray-Govender and S.W. Grab. 2018. Temperature trends for coastal and adjacent higher lying interior regions of KwaZulu-Natal, South Africa. Theoretical and Applied Climatology. <https://doi.org/10.1007/s00704-018-2602-6>. Cites Data: (P. D. Jones et al. 2000).

Richard Derry, Lining Chen, and Edward Hanna. 2018. Arctic amplification metrics. International Journal of Climatology. Vol. 38, pp. 4384-4394. <https://doi.org/10.1002/joc.5675>.

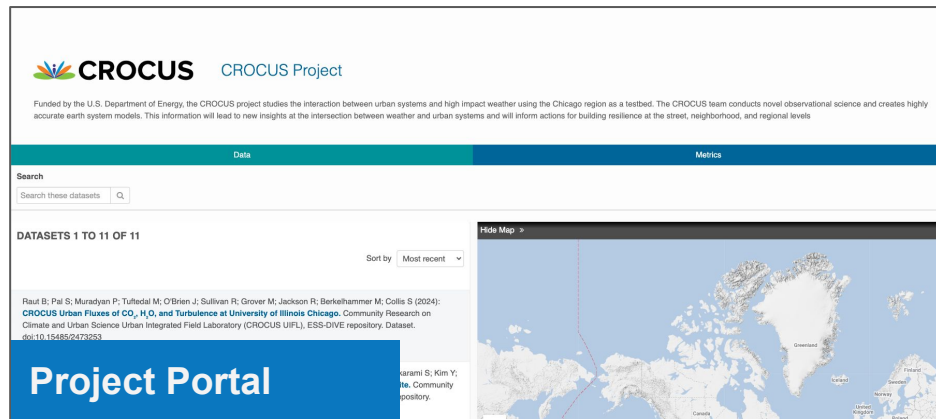
All Data Portal Metrics

- Total number of datasets
- Volume (bytes) of metadata records & data files
- Most recent date updated
- File types
- Years data collected
- Views, Downloads, Citations

<https://data.ess-dive.lbl.gov/portals/ngheetropics/Metrics>



Flexibility of Data Portal Branding



CROCUS CROCUS Project

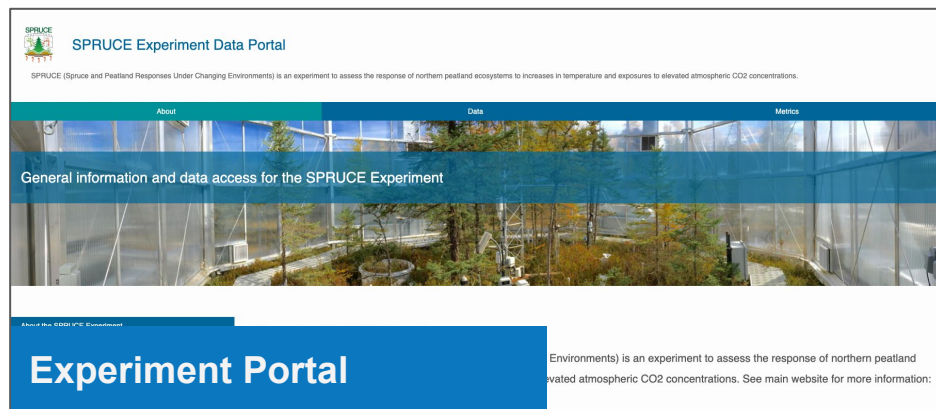
Funded by the U.S. Department of Energy, the CROCUS project studies the interaction between urban systems and high impact weather using the Chicago region as a testbed. The CROCUS team conducts novel observational science and creates highly accurate earth system models. This information will lead to new insights at the intersection between weather and urban systems and will inform actions for building resilience at the street, neighborhood, and regional levels.

Search
Search these datasets

DATASETS 1 TO 11 OF 11
Sort by: Most recent

Raut S, Pal S, Muradyan P, Tufteal M, O'Brien J, Sullivan R, Grover M, Jackson R, Berkehammer M, Collis S (2024): CROCUS Urban Fluxes of CO₂, H₂O, and Turbulence at University of Illinois Chicago. Community Research on Climate and Urban Science Urban Integrated Field Laboratory (CROCUS UIFL), ESS-DIVE repository Dataset. doi:10.15485/2473253

Project Portal



SPRUCE SPRUCE Experiment Data Portal

SPRUCE (Spruce and Peatland Responses Under Changing Environments) is an experiment to assess the response of northern peatland ecosystems to increases in temperature and exposures to elevated atmospheric CO₂ concentrations.

General information and data access for the SPRUCE Experiment

Experiment Portal

Environments) is an experiment to assess the response of northern peatland
vated atmospheric CO₂ concentrations. See main website for more information:

Data Portals can represent any theme

Create multiple portals to organize different scientific initiatives:

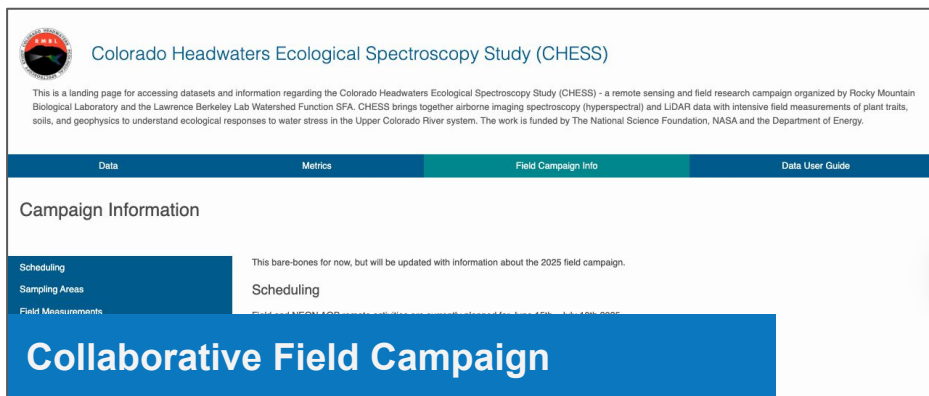
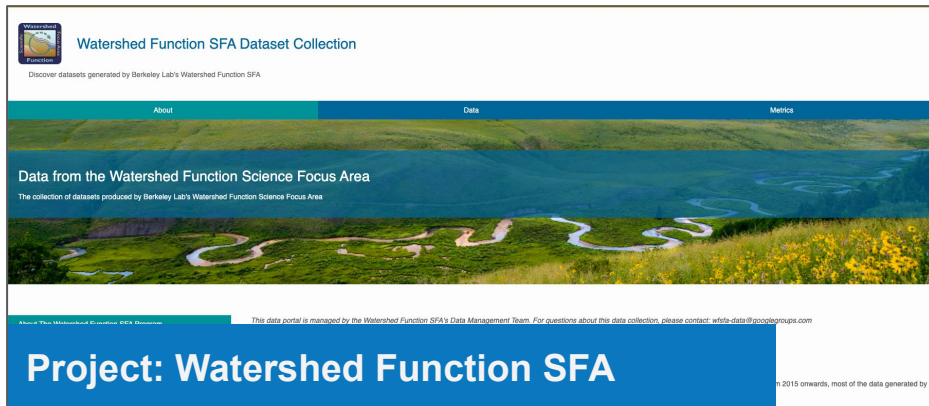
- Experiments
- Projects
- Field Sites / Campaigns
- Subcontracts or Sub-projects

Customize branding of **banner images**, **logos**, and **URLs** to center around the theme

<https://data.ess-dive.lbl.gov/portals/crocus>

https://data.ess-dive.lbl.gov/portals/SPRUCE_Experiment

Flexibility of Data Portal Branding



Data Portals can represent any theme

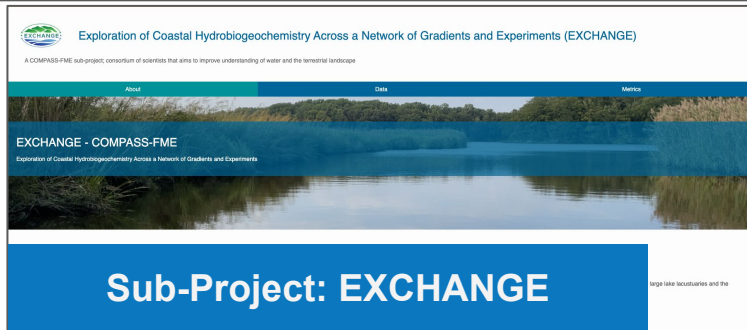
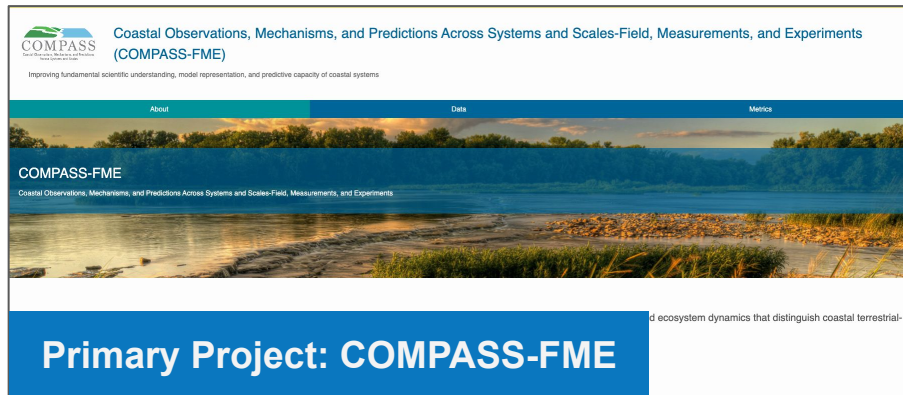
Create multiple portals to organize different scientific initiatives:

- Experiments
- Projects
- Field Sites / Campaigns
- Subcontracts or Sub-projects

Customize branding of **banner images**, **logos**, and **URLs** to center around the theme

<https://data.ess-dive.lbl.gov/portals/watershed-function-sfa>
<https://data.ess-dive.lbl.gov/portals/chess>

Flexibility of Data Portal Branding



Data Portals can represent any theme

Create multiple portals to organize different scientific initiatives:

- Experiments
- Projects
- Field Sites / Campaigns
- Subcontracts or Sub-projects

Customize branding of **banner images**, **logos**, and **URLs** to center around the theme

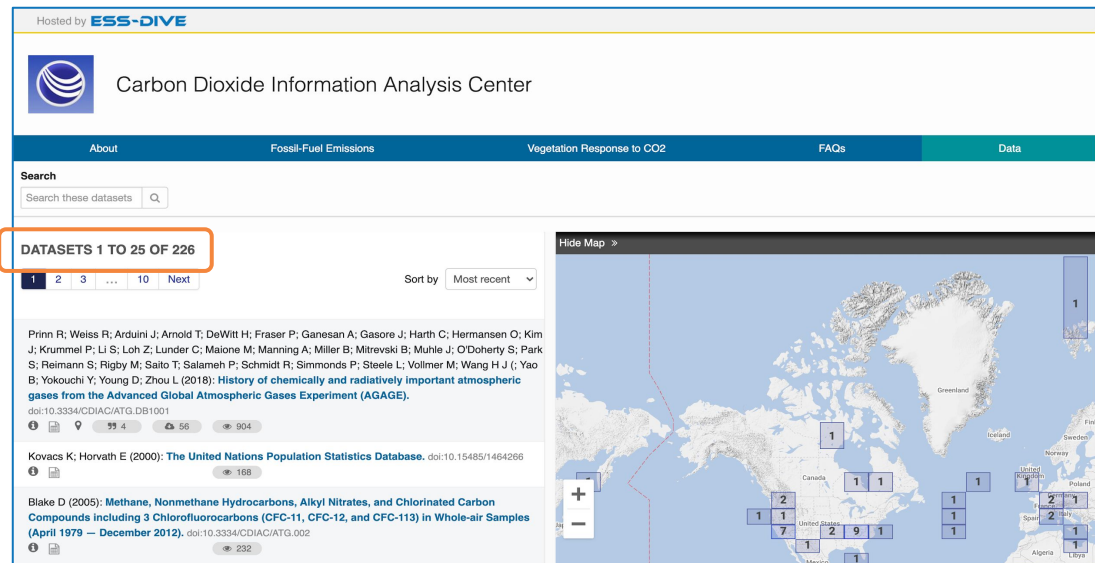
<https://data.ess-dive.lbl.gov/portals/compass>
<https://data.ess-dive.lbl.gov/portals/EXCHANGE>

Data is published under one funding project

Benefits of Data Portals for project data



Collect all project data in one place



Mirror existing project websites onto a data portal at the end of project's life for long term maintenance

Preserve information regarding the project's objectives, scopes, and organization for years to come

Option to manage your project datasets from this view

<https://data.ess-dive.lbl.gov/portals/CDIAC>

Add data portal URLs to project or institutional webpages



Report Data Publication Metrics to DOE

Tool to Download Project Publication Report



New **Jupyter Notebook tool** to obtain information about project publications

- Dataset titles & DOIs
- No. of private and public datasets
- Year of publication
- **View and download metrics**
- **Assessment Report Results**

Export report of public datasets with views/downloads metrics

```
# View data frame
display(public_datasets)
```

	Year	Dataset Title	DOI	ESS-DIVE ID	URL	Downloads	Views
1	2025	Monthly averages of ED2 model simulations initialized with airborne lidar structure, Jan 1981-Dec 2018, Brazilian Amazon	doi:10.15485/2526256	ess-dive-a697f9f47c674b-20250310T225835651	https://data.ess-dive.lbl.gov/view/doi:10.15485/2526256	0	133
2	2025	Reproductive and leaf litterfall fluxes in forest ecosystem sites globally (1950-2022)	doi:10.15485/2523672	ess-dive-f7b4f8a695ba8e3-20250227T225501084	https://data.ess-dive.lbl.gov/view/doi:10.15485/2523672	0	36
3	2025	Data for "Tree root nutrient uptake kinetics vary with nutrient availability, environmental conditions, and root traits: A global analysis"	doi:10.15485/2524531	ess-dive-3a9dc53205fd902-20250227T21217130	https://data.ess-dive.lbl.gov/view/doi:10.15485/2524531	0	120
4	2021	Leaf gas exchange raw data, 2015 - 2017, at Manaus, Brazil	doi:10.15486/NGT/1560859	ess-dive-aaa4e94dbaf22d1-20250227T184220226478	https://data.ess-dive.lbl.gov/view/doi:10.15486/NGT/1560859	0	93
5	2025	Files and scripts to support manuscript Needham et al. Canopy Gradients of Respiration	doi:10.15486/NGT/2425967	ess-dive-1c9057cf523c52e-20250213T181207944	https://data.ess-dive.lbl.gov/view/doi:10.15486/NGT/2425967	4	59
6	2025	Litter Production and Foliar Nutrient Resorption in Pioneer and Non-Pioneer Species in a Selective Logging Experiment in the Central Amazon, BIONTE, ZF-2, Manaus, 2022-23	doi:10.15485/2507467	ess-dive-de6c9d926ef5e50-20250130T220523540	https://data.ess-dive.lbl.gov/view/doi:10.15485/2507467	16	55



<https://github.com/ess-dive/essdive-tutorials>

Downloads 1.2K

Citations 48

Views 9.5K

Tool to Download Project Publication Report



New **Jupyter Notebook** tool to obtain information about project publications

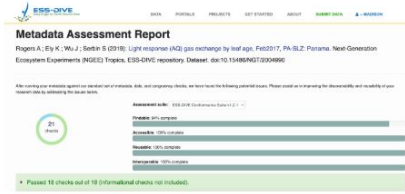
- Dataset titles & DOIs
- No. of private and public datasets
- Year of publication
- View and download metrics
- **Assessment Report Results**



<https://github.com/ess-dive/essdive-tutorials>

6. FAIR Assessment Report Results

Learn more about ESS-DIVE's Assessment Reports and criteria



The screenshot shows the ESS-DIVE Metadata Assessment Report interface. It includes a header with the ESS-DIVE logo and navigation links. Below the header, there is a section titled 'Metadata Assessment Report' with a subtitle 'Project 4: Ryk, M. J., Seiler, S. (2018). Light response (AQI) gas exchange by leaf age. Feb2017, PA-BLZ, Panama, Next Generation Ecosystem Experiments (NGEE) Tropics, ESS-DIVE repository. Dataset, doi:10.15468/NGEE200490'. A progress bar indicates '21/21' items. Below the progress bar, there is a table with columns 'FAIR Category', 'Check Name', 'Result', 'Check Description', and 'ESS-DIVE ID'. The table lists 6 checks, with results ranging from SUCCESS to FAILURE.

```
project_assessment_report = request_fair(public_datasets['ESS-DIVE ID'])  
  
# View all assessment report results  
display(project_assessment_report)
```

	FAIR Category	Check Name	Result	Check Description	ESS-DIVE ID
139	Findable	Resource Project Title Controlled	SUCCESS	Check if the project title is contained in a list of known projects.	ess-dive-3354b9e30077b19-20241028T151542625528
140	Findable	Abstract length	FAILURE	Abstract should be at least 100 words long.	ess-dive-3354b9e30077b19-20241028T151542625528
141	Findable	Geographic coverage coordinates	SUCCESS	Geographic Coverage should contain bounding coordinates.	ess-dive-7d6e3bd3030e6fa-20241028T151545987276
142	Findable	Publication date	SUCCESS	Publication date should be present	ess-dive-7d6e3bd3030e6fa-20241028T151545987276
143	Findable	Geographic coverage description	SUCCESS	Geographic coverage description should be present at the dataset level.	ess-dive-7d6e3bd3030e6fa-20241028T151545987276
144	Findable	Dataset Keyword Minimum	SUCCESS	Check if there are a minimum number of keywords present, and no keywords in title.	ess-dive-3354b9e30077b19-20241028T151542625528

Tool to Download Project Publication Report

Open the notebook [in your browser](#), enter your [project name](#) and login token, and it will output a CSV report!

Come back and use the notebook whenever needed

👉 <https://github.com/ess-dive/essdive-tutorials>

ESS-DIVE API Tutorials

Jupyter+R: [launch binder](#)

RStudio: [launch binder](#)

Google Colab: [Open in Colab](#)

Run notebook in browser using [Binder](#) or [Colab](#)
no experience required!

Summarize unique failed checks

Check Name	Count
Abstract length	5
Award Funder Name Controlled	1
Check that a contact has an ORCID, email and address	1
Dataset Keywords Overlap	6
Dataset Title Length	7
Geographic coverage coordinates	2
Geographic coverage description	2
Methods present	6
Non proprietary entity format	5

Datasets to review

Number of Datasets to Review: 24

<https://data.ess-dive.lbl.gov/portals/ngeetropics>

2,763 Downloads
from Nov 2019 to May 2021

Monthly Downloads

year month all

Month	Downloads
Jan 2019	50
Feb 2019	50
Mar 2019	100
Apr 2019	200
May 2019	150
Jun 2019	50
Jul 2019	50
Aug 2019	50
Sep 2019	100
Oct 2019	150
Nov 2019	100
Dec 2019	200
Jan 2020	100
Feb 2020	100
Mar 2020	150
Apr 2020	2763
May 2020	1500
Jun 2020	250
Jul 2020	200
Aug 2020	50
Sep 2020	100
Oct 2020	50
Nov 2020	50
Dec 2020	50
Jan 2021	50
Feb 2021	50
Mar 2021	50
Apr 2021	50



What next? PI Checklist

PI Checklist

1. Make sure your project is on ESS-DIVE and correct

- Your project must be on this list to submit data:
<https://data.ess-dive.lbl.gov/projects>
- Make sure the PI names and project title are up-to-date

2. Inform project members to get access to submit data to ESS-DIVE

- Login with ORCID
- Register as a data contributor



PI Checklist

3. Provide guides for submitting data on ESS-DIVE to your project

- [Data Submission Guidelines](#)
- See the [Checklist for Describing and Formatting Datasets](#) for help choosing relevant formats

4. Share data with project members

- Provide [instructions for sharing data](#) – *try out teams!*
- Create a [Data Portal](#)

PI Checklist

5. RECOMMENDED: Designate project data managers on ESS-DIVE

- Fill out the [Project Data Manager form](#)
- Ask them to create a project team

Important to communicate expectations as the PI

We're here to help!

PI Checklist



Reference this at any time: <https://ess-dive.lbl.gov/new-project-checklist/>

PROJECT CHECKLIST

Our Project Checklist can help you get started with project data management on ESS-DIVE. Make a copy of this [google docs version of the checklist](#) to customize steps needed for your project.

1. Make sure your project is approved to store data on ESS-DIVE

- **DOE ESS Program Funded Projects:** Your project is automatically approved to submit data on ESS-DIVE. You can verify your project is listed and the information is up-to-date within the [Project Search](#). Please contact ess-dive-support@lbl.gov if any information is incorrect or out-of-date.
- **Projects from all other sources:** If your project provides scientific benefit to DOE ESS, please fill out the [Non-ESS Project Data form](#) to request permission to upload data.

2. Inform project team members to get access to submit data to ESS-DIVE

- PIs and project team members need to register as [Data Contributors](#) to submit data.
- Sign-up for our Mailing List to receive updates on new features, training events, and webinars.

Publication Unavailable: May 23rd to June 1st



- ESS-DIVE manages DOIs through DOE's Office of Science and Technical Information (OSTI)
- **OSTI services will be unavailable** during a major upgrade from ELINK 1.0 to ELINK 2.0 from **May 23rd - June 1st**
- ESS-DIVE cannot publish datasets or reserve DOIs during this time



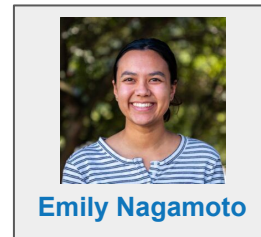
Plan Ahead! Tell your team to start publication requests by April 30th if you need to publish data by early June



ESS-DIVE Tutorial: Using ESS-DIVE Data

Learn how to use ESS-DIVE's programmatic tools to search and reuse public data.

- ✓ Dataset API (*dataset-based search*)
- ✓ Deep Dive API (*file-based search*)
- ✓ Emphasis on reporting format data



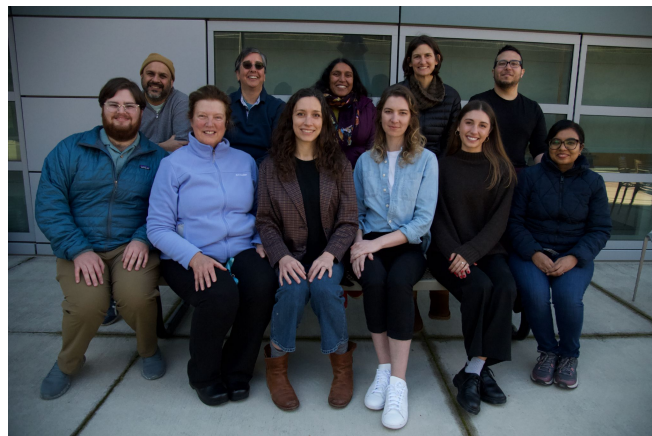
Breakout I, Session D

Day 1 | Tue April 15

<https://ess-dive.lbl.gov/annual-data-workshop/#data-use-tutorial>

Key Takeaway: Become aware of how you can investigate your science questions on ESS-DIVE

Thank you! Let's Stay Connected.



Contact us if you are interested in any hands on activities: ess-dive-support@lbl.gov

ESS-DIVE Documentation

docs.ess-dive.lbl.gov

Join our mailing list!

<https://go.lbl.gov/essdiveMailingList>

References

Icons



- Speak up icons created by Kalashnyk - Flaticon, <https://www.flaticon.com/free-icons/speak-up>



- Link icons created by Smashicons - Flaticon, <https://www.flaticon.com/free-icons/link>



- Iteration icons created by Uniconlabs - Flaticon, <https://www.flaticon.com/free-icons/iteration>



- Form icons created by Freepik - Flaticon, <https://www.flaticon.com/free-icons/form>



- Lock icons created by Freepik - Flaticon, <https://www.flaticon.com/free-icons/lock>



- Download icons created by Debi Alpa Nugraha - Flaticon, <https://www.flaticon.com/free-icons/download>



- Paste icons created by Pixel perfect - Flaticon, <https://www.flaticon.com/free-icons/paste>



- Idea icons created by Pixel perfect - Flaticon, <https://www.flaticon.com/free-icons/idea>



- Files and folders icons created by Smashicons - Flaticon, <https://www.flaticon.com/free-icons/files-and-folders>