# AMP webinar
# DOI & Data Policy

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AMERIFLUX

U.S. DEPARTMENT OF ENERGY | Office of Science

BERKELEY LAB
Bringing Science Solutions to the World

# Webinar Objectives

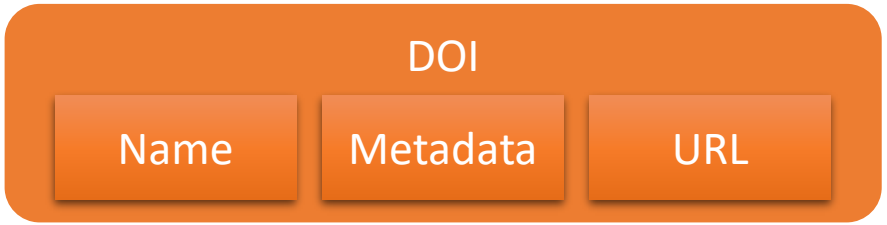
- Explain the AmeriFlux data citation DOIs
  - What they are
  - How we assign them
  - How to provide the information needed for your DOIs
- Describe upcoming changes to data usage policy
  - New open tier
- Provide options for addressing emerging data citation challenges

# Digital Object Identifiers

- **Unique** alphanumeric string assigned by a registration agency

**10. <DOI registration agency ID>** / **<publisher provided suffix>**

- DOI ties together metadata of an object with a digital location

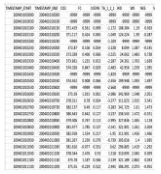



- "Resolvable" – Search engines can resolve DOIs
- DOIs cites the data, citing a paper cites just the contents of the paper
- Compliant with FAIR principles: facilitates reproducibility, reusability, interpretation

# Current state of AmeriFlux DOIs

- AMP issues DOIs because sites need to get credit!
- DOIs are assigned to sites with published data products
  - Only AmeriFlux DOI currently applies to the BASE-BADM data product
  - Assigned through the Office of Scientific and Technical Information (OSTI)
  - DOI format: **10.17190/AMF/<Numeric ID>**
- AMP mints DOIs within a month of first data release
- Periodic syncing of DOI metadata with OSTI (about 3-4 times a year)
- Populated using BADM information

# DOI assignment and update

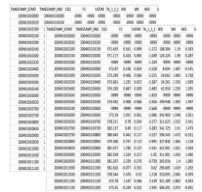


BASE-In (FP-In)

Format QA/QC

Data QA/QC

BASE Publish



BASE + BADM zip

## BADM DOI

- GRP_DOI_CONTRIBUTOR
- GRP_DOI_ORGANIZATION
- GRP_DOI_RELATED_DATA_DOI

## BADM Site General Info

- GRP_TEAM_MEMBER
- GRP_LOCATION
- GRP_STATE
- GRP_SITE_DESC

Initial assignment uses info from PIs to seed DOI Contributor and Organization groups

10.17190/AMF/<OSTI_ID>

OSTI

OSTI.GOV
Office of Scientific and Technical Information

# AmeriFlux DOI pages

AMERIFLUX

Home | About | Community | Sites | Data | Tech | Year of M

Home / Sites / Siteinfo / US-MMS

## US-MMS: Morgan Monroe State Forest

Overview | Windroses | DOI | Data Use Log | Image Ga

### DOIs for this site and other citation information

Citations: For data, use the DOI citation. For site characterization, use the site publication. For fund

### DOIs to use for Citation of Data

- **AmeriFlux**

  **Citation:** Kim Novick, Rich Phillips (1999-) AmeriFlux US-MMS Morgan Monroe State Forest, I
  **Link:** https://doi.org/10.17190/AMF/1246080

### Publication(s) to use for citations of site characterization

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### Acknowledgements

- AmeriFlux Management Project

### Resources

- **AmeriFlux** Logos & Acknowledgments

**DOI: 10.17190/AMF/1246080**

## AmeriFlux US-MMS Morgan Monroe State Forest

| Dataset Creator(s) | |
|---|---|
| Name | Kim Novick |
| Email | knovick@indiana.edu |
| Affiliation | Indiana University |
| Name | Rich Phillips |
| Email | rpp6@indiana.edu |
| Affiliation | Indiana University |

### Dataset Description

This is the AmeriFlux version of the carbon flux data for the site US-MMS Morgan Monroe State Forest. Site Description - Owned by the Indiana Department of Natural Resources (IDNR), the Morgan Monroe State Forest, the site's namesake, is operated thanks to the long-term agreement between Indiana University and IDNR. The first settlers cleared the surrounding ridges for farming, but were largely unsuccessful. The state of Indiana purchased the land in 1929, creating the Morgan Monroe State Forest. Many of the trees in the tower footprint are 60-80 years old, surviving selective logging that ended over the past 10 years. Today, the forest is a secondary successional broadleaf forest within the maple-beech to oak hickory transition zone of the eastern deciduous forest.

| Dataset Information | |
|---|---|
| Originating Research Organization(s) | Indiana University |
| Country | USA |
| Sponsor Organization(s) | DOE/NIGEC |
| Site Page | http://ameriflux.lbl.gov/sites/siteinfo/US-MMS |
| Citation | Kim Novick, Rich Phillips (1999-) AmeriFlux US-MMS Morgan Monroe State Forest, Dataset. https://doi.org/10.17190/AMF/1246080 |
| Data Download Compatibility | Download Data Here |

### Citations

Roman, D. T., Novick, K. A., Brzostek, E. R., Dragoni, D., Rahman, F., Phillips, R. P. (2015) , The Role Of Isohydric And Anisohydric Species In Determining Ecosystem-Scale Response To Severe Drought Oecologia, 179(3), 641-654
**DOI: 10.1007/s00442-015-3380-9**

### Other Publications

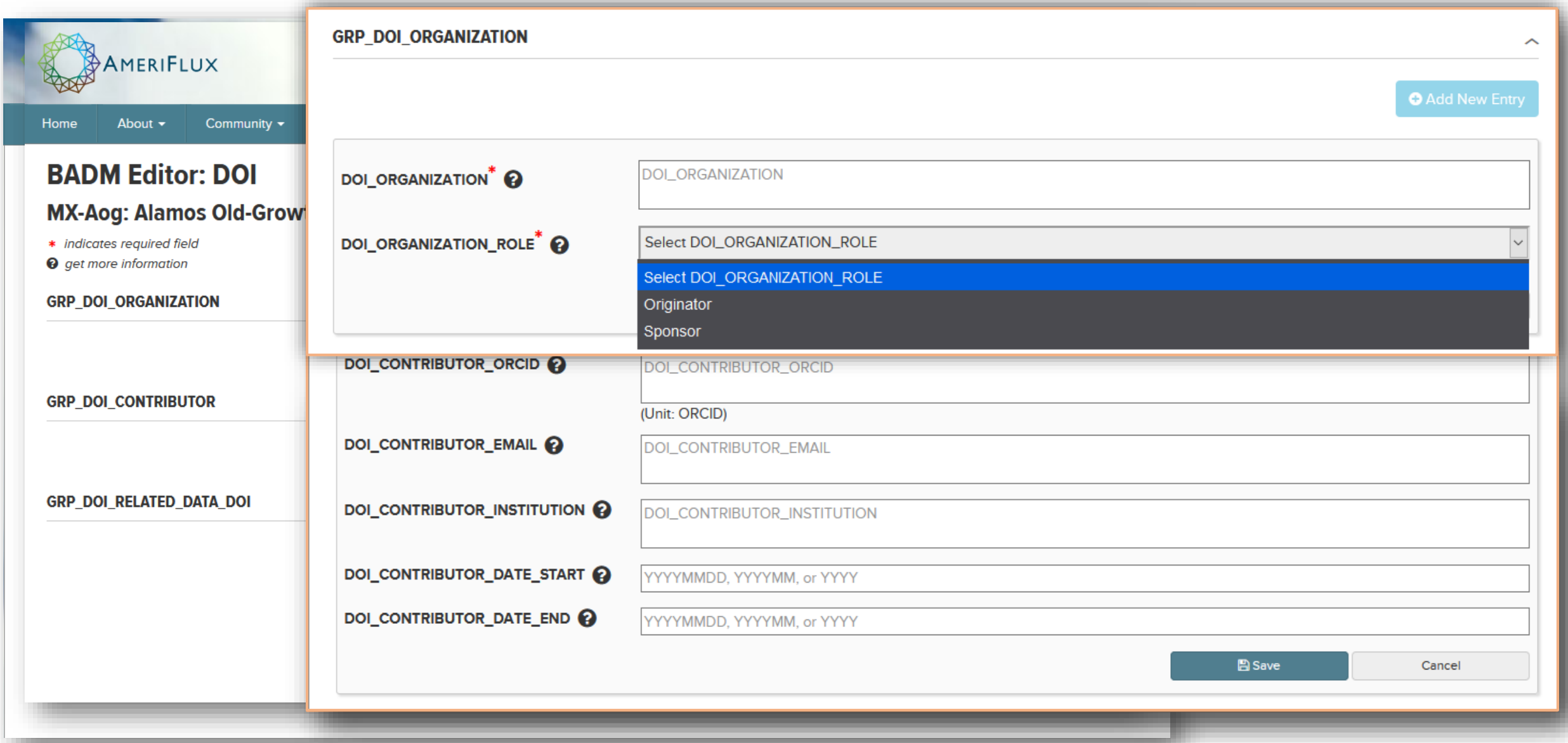
Sullivan, R. C., Cook, D. R., Ghate, V. P., Kotamarthi, V. R., Feng, Y. (2019) , Improved Spatiotemporal

SITE SEARCH & MAPS


USEFUL LINKS

People
Opportunities
Image Gallery
Events
Logos & Acknowledgments
Tech Blog
Data Blog
Safety
Research Highlights
Publications
AmeriFlux Flyers

# AmeriFlux Online DOI editor



# Real-world DOI examples

**GRP_DOI_CONTRIBUTOR**

Add New Entry

**DOI_CONTRIBUTOR_NAME**
Ariane Arias Ortiz
**DOI_CONTRIBUTOR_ROLE**
Author
**DOI_CONTRIBUTOR_ORDINAL**
6
**DOI_CONTRIBUTOR_ORCID**
0000-0001-9408-0061
**DOI_CONTRIBUTOR_EMAIL**
aariasortiz@berkeley.edu
**DOI_CONTRIBUTOR_INSTITUTION**
University of California, Berkeley
**DOI_CONTRIBUTOR_DATE_START**
20200327
**DOI_CONTRIBUTOR_DATE_END**

**DOI_CONTRIBUTOR_NAME**
Joseph Verfaillie
**DOI_CONTRIBUTOR_ROLE**
Author
**DOI_CONTRIBUTOR_ORDINAL**
8
**DOI_CONTRIBUTOR_ORCID**
0000-0002-7009-8942
**DOI_CONTRIBUTOR_EMAIL**
jverfail@berkeley.edu
**DOI_CONTRIBUTOR_INSTITUTION**
University of California, Berkeley
**DOI_CONTRIBUTOR_DATE_START**
20101014
**DOI_CONTRIBUTOR_DATE_END**

**DOI_CONTRIBUTOR_NAME**
Dennis Baldocchi
**DOI_CONTRIBUTOR_ROLE**
Author
**DOI_CONTRIBUTOR_ORDINAL**
9
**DOI_CONTRIBUTOR_ORCID**
0000-0003-3496-4919
**DOI_CONTRIBUTOR_EMAIL**
baldocchi@berkeley.edu
**DOI_CONTRIBUTOR_INSTITUTION**
University of California, Berkeley
**DOI_CONTRIBUTOR_DATE_START**
20101014
**DOI_CONTRIBUTOR_DATE_END**

**DOI_CONTRIBUTOR_NAME**
Jaclyn Hatala Matthes
**DOI_CONTRIBUTOR_ROLE**
Author
**DOI_CONTRIBUTOR_ORDINAL**
1
**DOI_CONTRIBUTOR_ORCID**
0000-0001-8999-8062
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jaclyn.hatala.matthes@gmail.com
**DOI_CONTRIBUTOR_INSTITUTION**
University of California, Berkeley
**DOI_CONTRIBUTOR_DATE_START**
20101014
**DOI_CONTRIBUTOR_DATE_END**
20130513

**DOI_CONTRIBUTOR_NAME**
Cove Sturtevant
**DOI_CONTRIBUTOR_ROLE**
Author
**DOI_CONTRIBUTOR_ORDINAL**
2
**DOI_CONTRIBUTOR_ORCID**
0000-0002-0341-3228
**DOI_CONTRIBUTOR_EMAIL**
csturtevant@battelleecology.org
**DOI_CONTRIBUTOR_INSTITUTION**
University of California, Berkeley
**DOI_CONTRIBUTOR_DATE_START**
20130620
**DOI_CONTRIBUTOR_DATE_END**
20150817

**DOI_CONTRIBUTOR_NAME**
Patty Oikawa
**DOI_CONTRIBUTOR_ROLE**
Author
**DOI_CONTRIBUTOR_ORDINAL**
3
**DOI_CONTRIBUTOR_ORCID**
0000-0001-7852-4435
**DOI_CONTRIBUTOR_EMAIL**
patty.oikawa@csueastbay.edu
**DOI_CONTRIBUTOR_INSTITUTION**
University of California, Berkeley
**DOI_CONTRIBUTOR_DATE_START**
20150817
**DOI_CONTRIBUTOR_DATE_END**
20161013

DOI: 10.17190/AMF/1246139

## AmeriFlux US-Myb Mayberry Wetland

**Dataset Creator(s)**

| | |
|---|---|
| **Name** | Jaclyn Hatala Matthes |
| **Email** | jaclyn.hatala.matthes@gmail.com |
| **Affiliation** | University of California, Berkeley |
| **Name** | Cove Sturtevant |
| **Email** | csturtevant@battelleecology.org |
| **Affiliation** | University of California, Berkeley |
| **Name** | Patty Oikawa |
| **Email** | patty.oikawa@csueastbay.edu |
| **Affiliation** | University of California, Berkeley |
| **Name** | Samuel D Chamberlain |
| **Email** | sam.d.chamberlain@gmail.com |
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| **Email** | jverfail@berkeley.edu |
| **Affiliation** | University of California, Berkeley |
| **Name** | Dennis Baldocchi |
| **Email** | baldocchi@berkeley.edu |
| **Affiliation** | University of California, Berkeley |

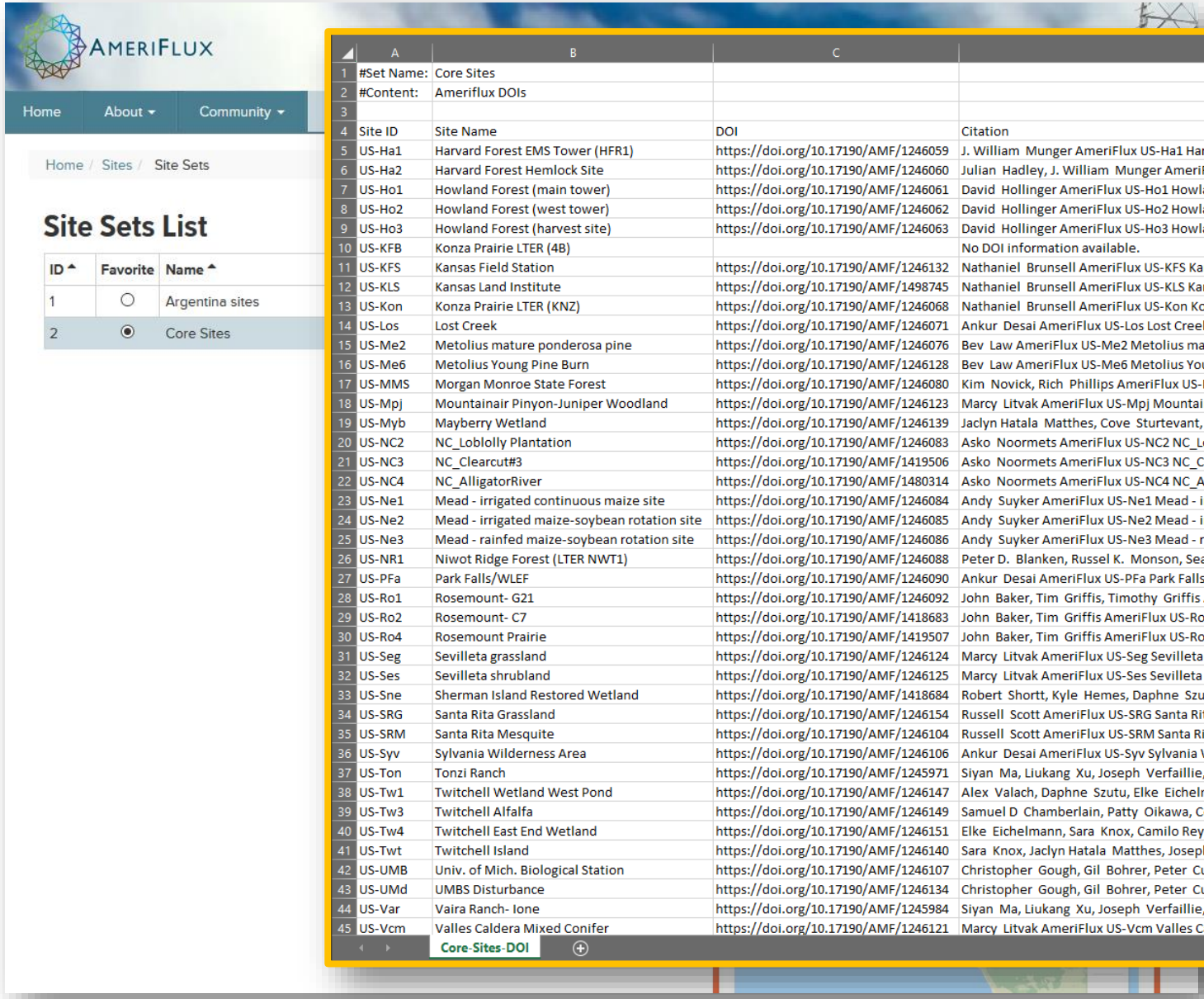
### Dataset Description

This is the AmeriFlux version of the carbon flux data for the site US-Myb M
Mayberry Wetland site is a 300-acre restored wetland on Sherman Island,
property of Mayberry Farms and managed by the California Department o
During Summer 2010, the site was restored from a pepperweed and annu
a project managed by Bryan Brock (bpbrock@water.ca.gov). A flux tower e
and CH4 fluxes was installed on October 14, 2010. At the time of installatio
begun after extensive reconstruction of the wetland bathymetry conducte
small patches of tules remain within the site, the site is a patchwork of dee
remaining vegetation. Currently, there is an intention to flood-to-kill the cu
and let the wetland plants propagate naturally, so no additional plant mani

### Dataset Information

| | |
|---|---|
| **Originating Research Organization(s)** | University of California, Berkeley |
| **Country** | USA |
| **Sponsor Organization(s)** | California Department of Water Resources |
| **Site Page** | http://ameriflux.lbl.gov/sites/siteinfo/US-Myb |
| **Citation** | Jaclyn Hatala Matthes, Cove Sturtevant, Patty Oikawa, Samuel D Chamberlain, Daphne Szutu, Ariane Arias Ortiz, Joseph Verfaillie, Dennis Baldocchi (2010-) AmeriFlux US-Myb Mayberry Wetland, Dataset. https://doi.org/10.17190/AMF/1246139 |
| **Data Download Compatibility** | Download Data Here |

# DOIs and Site Sets - taming multiple sites' DOIs




| | A | B | C | D |
|---|---|---|---|---|
| 1 | #Set Name: | Core Sites | | |
| 2 | #Content: | Ameriflux DOIs | | |
| 3 | | | | |
| 4 | Site ID | Site Name | DOI | Citation |
| 5 | US-Ha1 | Harvard Forest EMS Tower (HFR1) | https://doi.org/10.17190/AMF/1246059 | J. William Munger AmeriFlux US-Ha1 Harvard Forest EMS Tower (HFR1), 10.17190/AMF/1246059 |
| 6 | US-Ha2 | Harvard Forest Hemlock Site | https://doi.org/10.17190/AMF/1246060 | Julian Hadley, J. William Munger AmeriFlux US-Ha2 Harvard Forest Hemlock Site, 10.17190/AMF/1246060 |
| 7 | US-Ho1 | Howland Forest (main tower) | https://doi.org/10.17190/AMF/1246061 | David Hollinger AmeriFlux US-Ho1 Howland Forest (main tower), 10.17190/AMF/1246061 |
| 8 | US-Ho2 | Howland Forest (west tower) | https://doi.org/10.17190/AMF/1246062 | David Hollinger AmeriFlux US-Ho2 Howland Forest (west tower), 10.17190/AMF/1246062 |
| 9 | US-Ho3 | Howland Forest (harvest site) | https://doi.org/10.17190/AMF/1246063 | David Hollinger AmeriFlux US-Ho3 Howland Forest (harvest site), 10.17190/AMF/1246063 |
| 10 | US-KFB | Konza Prairie LTER (4B) | | No DOI information available. |
| 11 | US-KFS | Kansas Field Station | https://doi.org/10.17190/AMF/1246132 | Nathaniel Brunsell AmeriFlux US-KFS Kansas Field Station, 10.17190/AMF/1246132 |
| 12 | US-KLS | Kansas Land Institute | https://doi.org/10.17190/AMF/1498745 | Nathaniel Brunsell AmeriFlux US-KLS Kansas Land Institute, 10.17190/AMF/1498745 |
| 13 | US-Kon | Konza Prairie LTER (KNZ) | https://doi.org/10.17190/AMF/1246068 | Nathaniel Brunsell AmeriFlux US-Kon Konza Prairie LTER (KNZ), 10.17190/AMF/1246068 |
| 14 | US-Los | Lost Creek | https://doi.org/10.17190/AMF/1246071 | Ankur Desai AmeriFlux US-Los Lost Creek, 10.17190/AMF/1246071 |
| 15 | US-Me2 | Metolius mature ponderosa pine | https://doi.org/10.17190/AMF/1246076 | Bev Law AmeriFlux US-Me2 Metolius mature ponderosa pine, 10.17190/AMF/1246076 |
| 16 | US-Me6 | Metolius Young Pine Burn | https://doi.org/10.17190/AMF/1246128 | Bev Law AmeriFlux US-Me6 Metolius Young Pine Burn, 10.17190/AMF/1246128 |
| 17 | US-MMS | Morgan Monroe State Forest | https://doi.org/10.17190/AMF/1246080 | Kim Novick, Rich Phillips AmeriFlux US-MMS Morgan Monroe State Forest, 10.17190/AMF/1246080 |
| 18 | US-Mpj | Mountainair Pinyon-Juniper Woodland | https://doi.org/10.17190/AMF/1246123 | Marcy Litvak AmeriFlux US-Mpj Mountainair Pinyon-Juniper Woodland, 10.17190/AMF/1246123 |
| 19 | US-Myb | Mayberry Wetland | https://doi.org/10.17190/AMF/1246139 | Jaclyn Hatala Matthes, Cove Sturtevant, Patty Oikawa, Samuel D Chamberlain, Daphne Szutu, Ariane Arias Ortiz, Joseph Verfaillie, Dennis Baldocchi AmeriFlux |
| 20 | US-NC2 | NC_Loblolly Plantation | https://doi.org/10.17190/AMF/1246083 | Asko Noormets AmeriFlux US-NC2 NC_Loblolly Plantation, 10.17190/AMF/1246083 |
| 21 | US-NC3 | NC_Clearcut#3 | https://doi.org/10.17190/AMF/1419506 | Asko Noormets AmeriFlux US-NC3 NC_Clearcut#3, 10.17190/AMF/1419506 |
| 22 | US-NC4 | NC_AlligatorRiver | https://doi.org/10.17190/AMF/1480314 | Asko Noormets AmeriFlux US-NC4 NC_AlligatorRiver, 10.17190/AMF/1480314 |
| 23 | US-Ne1 | Mead - irrigated continuous maize site | https://doi.org/10.17190/AMF/1246084 | Andy Suyker AmeriFlux US-Ne1 Mead - irrigated continuous maize site, 10.17190/AMF/1246084 |
| 24 | US-Ne2 | Mead - irrigated maize-soybean rotation site | https://doi.org/10.17190/AMF/1246085 | Andy Suyker AmeriFlux US-Ne2 Mead - irrigated maize-soybean rotation site, 10.17190/AMF/1246085 |
| 25 | US-Ne3 | Mead - rainfed maize-soybean rotation site | https://doi.org/10.17190/AMF/1246086 | Andy Suyker AmeriFlux US-Ne3 Mead - rainfed maize-soybean rotation site, 10.17190/AMF/1246086 |
| 26 | US-NR1 | Niwot Ridge Forest (LTER NWT1) | https://doi.org/10.17190/AMF/1246088 | Peter D. Blanken, Russel K. Monson, Sean P. Burns, David R. Bowling, Andrew A. Turnipseed AmeriFlux US-NR1 Niwot Ridge Forest (LTER NWT1), 10.17190/AMF/ |
| 27 | US-PFa | Park Falls/WLEF | https://doi.org/10.17190/AMF/1246090 | Ankur Desai AmeriFlux US-PFa Park Falls/WLEF, 10.17190/AMF/1246090 |
| 28 | US-Ro1 | Rosemount- G21 | https://doi.org/10.17190/AMF/1246092 | John Baker, Tim Griffis, Timothy Griffis AmeriFlux US-Ro1 Rosemount- G21, 10.17190/AMF/1246092 |
| 29 | US-Ro2 | Rosemount- C7 | https://doi.org/10.17190/AMF/1418683 | John Baker, Tim Griffis AmeriFlux US-Ro2 Rosemount- C7, 10.17190/AMF/1418683 |
| 30 | US-Ro4 | Rosemount Prairie | https://doi.org/10.17190/AMF/1419507 | John Baker, Tim Griffis AmeriFlux US-Ro4 Rosemount Prairie, 10.17190/AMF/1419507 |
| 31 | US-Seg | Sevilleta grassland | https://doi.org/10.17190/AMF/1246124 | Marcy Litvak AmeriFlux US-Seg Sevilleta grassland, 10.17190/AMF/1246124 |
| 32 | US-Ses | Sevilleta shrubland | https://doi.org/10.17190/AMF/1246125 | Marcy Litvak AmeriFlux US-Ses Sevilleta shrubland, 10.17190/AMF/1246125 |
| 33 | US-Sne | Sherman Island Restored Wetland | https://doi.org/10.17190/AMF/1418684 | Robert Shortt, Kyle Hemes, Daphne Szutu, Joseph Verfaillie, Dennis Baldocchi AmeriFlux US-Sne Sherman Island Restored Wetland, 10.17190/AMF/1418684 |
| 34 | US-SRG | Santa Rita Grassland | https://doi.org/10.17190/AMF/1246154 | Russell Scott AmeriFlux US-SRG Santa Rita Grassland, 10.17190/AMF/1246154 |
| 35 | US-SRM | Santa Rita Mesquite | https://doi.org/10.17190/AMF/1246104 | Russell Scott AmeriFlux US-SRM Santa Rita Mesquite, 10.17190/AMF/1246104 |
| 36 | US-Syv | Sylvania Wilderness Area | https://doi.org/10.17190/AMF/1246106 | Ankur Desai AmeriFlux US-Syv Sylvania Wilderness Area, 10.17190/AMF/1246106 |
| 37 | US-Ton | Tonzi Ranch | https://doi.org/10.17190/AMF/1245971 | Siyan Ma, Liukang Xu, Joseph Verfaillie, Dennis Baldocchi AmeriFlux US-Ton Tonzi Ranch, 10.17190/AMF/1245971 |
| 38 | US-Tw1 | Twitchell Wetland West Pond | https://doi.org/10.17190/AMF/1246147 | Alex Valach, Daphne Szutu, Elke Eichelmann, Sara Knox, Joseph Verfaillie, Dennis Baldocchi AmeriFlux US-Tw1 Twitchell Wetland West Pond, 10.17190/AMF/12 |
| 39 | US-Tw3 | Twitchell Alfalfa | https://doi.org/10.17190/AMF/1246149 | Samuel D Chamberlain, Patty Oikawa, Cove Sturtevant, Daphne Szutu, Joseph Verfaillie, Dennis Baldocchi AmeriFlux US-Tw3 Twitchell Alfalfa, 10.17190/AMF/1 |
| 40 | US-Tw4 | Twitchell East End Wetland | https://doi.org/10.17190/AMF/1246151 | Elke Eichelmann, Sara Knox, Camilo Rey Sanchez, Alex Valach, Cove Sturtevant, Daphne Szutu, Joseph Verfaillie, Dennis Baldocchi AmeriFlux US-Tw4 Twitchel |
| 41 | US-Twt | Twitchell Island | https://doi.org/10.17190/AMF/1246140 | Sara Knox, Jaclyn Hatala Matthes, Joseph Verfaillie, Dennis Baldocchi AmeriFlux US-Twt Twitchell Island, 10.17190/AMF/1246140 |
| 42 | US-UMB | Univ. of Mich. Biological Station | https://doi.org/10.17190/AMF/1246107 | Christopher Gough, Gil Bohrer, Peter Curtis AmeriFlux US-UMB Univ. of Mich. Biological Station, 10.17190/AMF/1246107 |
| 43 | US-UMd | UMBS Disturbance | https://doi.org/10.17190/AMF/1246134 | Christopher Gough, Gil Bohrer, Peter Curtis AmeriFlux US-UMd UMBS Disturbance, 10.17190/AMF/1246134 |
| 44 | US-Var | Vaira Ranch- Ione | https://doi.org/10.17190/AMF/1245984 | Siyan Ma, Liukang Xu, Joseph Verfaillie, Dennis Baldocchi AmeriFlux US-Var Vaira Ranch- Ione, 10.17190/AMF/1245984 |
| 45 | US-Vcm | Valles Caldera Mixed Conifer | https://doi.org/10.17190/AMF/1246121 | Marcy Litvak AmeriFlux US-Vcm Valles Caldera Mixed Conifer, 10.17190/AMF/1246121 |

Core-Sites-DOI

# DOIs in the context of multiple flux-data products

- Separate DOIs issued for each data product – assigned by OSTI via AMP
  - BASE-BADM (AmeriFlux) - **10.17190/AMF/<Numeric ID>**
  - FLUXNET2015 (FLUXNET) - **10.18140/FLX/<Numeric ID>**
  - FLUXNET-CH4 (FLUXNET community data product) - **10.18140/FLX/<Numeric ID>**
- DOI Contributors and Organizations for FLUXNET products are seeded using AmeriFlux DOI information unless explicitly collected for the product
- Changes to DOI Contributors through online editor applies to AmeriFlux data products only
- Different set of **contributors** between data products is possible (contact AMP to update for now – ameriflux-support@lbl.gov)
- DOI Organizations are shared throughout data products
- DOIs between different products are linked automatically

AMERIFLUX

# AmeriFlux Data Usage Policy

# AmeriFlux Data Usage Policy Modernization

**Current Usage Policy Challenges**

- Requirement to contact PI
  - Not compatible with many emerging bulk data usage scenarios
  - Contact is already occurring automatically on download
  - Burden of later contact is high if using more than a few sites
  - Retirements and deaths potentially leave data in limbo
- No explicit redistribution rights
  - No actual right for others to make data available – e.g. PEcAn, R Tool, etc.
  - Transfer of AmeriFlux data by AMP to a different data repository (allowed?)
- No explicit adaptation rights

# Creative Commons CC BY 4.0


**You are free to:**

- **Share** — copy and redistribute the material in any medium or format
- **Adapt** — remix, transform, and build upon the material for any purpose, even commercially.

**Under the following terms:**

**Attribution** — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

https://creativecommons.org/licenses/by/4.0/

# CC BY 4.0 and Similar Policies Becoming Standard

| Data Resource | Policy | Usage | Citation | Author Contact Required |
|---|---|---|---|---|
| FLUXNET2015 paper | CCby4 | unrestricted | required | no |
| ESS-DIVE | CCby4 (and CC0) | unrestricted | required | no |
| NEON | Custom Similar to CCby4 | unrestricted | expected | no |
| ICOS Carbon Portal | Custom Similar to CCby4 | unrestricted | required | no |
| ARM | Custom Similar to CCby4 | unrestricted | required | no |
| ESGF CMIP | Custom Similar to CCby4 | unrestricted | expected | no |
| Figshare | Creative Commons and other policies | Based on policy | Based on policy | no |
| LTER Environmental Data Initiative | Specified by data producer | Based on policy | Based on policy | Based on policy |
| Arctic Data Center | CCby4 | unrestricted | required | no |
| NASA | Mostly CC0 | unrestricted | recommended | no |

# CC BY 4.0 Advantages

- Compatibility with FLUXNET, ICOS, and NEON data policies
- Enables value added tools to be built
- Enables AmeriFlux data to be used in papers submitted to publishers requiring open data
- Enables data papers to be published about AmeriFlux data
- …

# AmeriFlux Data Usage Policy (by end of 2021)

- New AmeriFlux usage policy becomes CCby4 (or similar)
  - Data free for use and reuse
  - Proper citation/acknowledgement still required (specifics specified)
  - Sites receive data download notification
- Support sites who remain on older “AmeriFlux policy”
  - Data quality checks and BASE publish
  - Limited data and tech services – e.g. no ONEFlux processing, lower priority for services
- One data policy per site
- AmeriFlux core sites and NEON have indicated that their data can be CCby4

# AmeriFlux Data Citation Policy Modernization

**Current citation policy challenges**

- Citation of a paper about the site does not cite the data
  - Cite the data DOI for citation of the data
  - Cite the site papers for citation of site characterization
- No recognition of other contributors (e.g. AmeriFlux data and tech teams)
- Difficult to cite a large number of sites in reference section
  - AmeriFlux citations end up in supplementary materials (rarely indexed)

# Changes to DOI Citation Info

## Updated citation guidance

### DOIs to use for Citation of Data

- **AmeriFlux**

  **Citation:** Sebastien Biraud, Marc Fischer, Stephen Chan, Margaret Torn (2002-) AmeriFlux US-ARM ARM Southern Great Plains site- Lamont, Dataset. https://doi.org/10.17190/AMF/1246027
  **Link:** https://doi.org/10.17190/AMF/1246027

### Publication(s) to use for citations of site characterization

- Fischer, M. L., Billesbach, D. P., Berry, J. A., Riley, W. J., Torn, M. S. (2007) Spatiotemporal Variations In Growing Season Exchanges Of Co2, H2o, And Sensible Heat In Agricultural Fields Of The Southern Great Plains, Earth Interactions, 11(17), 1-21.

## Upcoming changes

- Add data version to the citation (e.g. Ver. 17-5)
- Updates to product name (e.g. BASE-BADM)
- Specify publisher (e.g. AmeriFlux)

# Collective Citations for AmeriFlux

# AmeriFlux Collective Citation – Options

- Implement a collective data citation method
  - Provide a citation that can be included in the reference section
  - Help enable tracking of citations to data
  - Enable credit for other data contributors (e.g. AMP data curators)
  - Three options for when large number of sites used
    - Data papers as data citation
    - Dynamic data citation
    - Data collections as data citation
- Could request table of sites/versions in paper still
- Still receive data download notifications

# Data Collections

- Obtain a DOI for an AmeriFlux collection (e.g. AmeriFlux2020)
  - E.g. Includes data through year xxxx for CC BY 4.0 sites
  - Can contain authorship in citation if desired
  - Include papers about data preparation and quality methods
  - Can be cited in the reference section of a paper
  - Landing page for collection and data download provided by AmeriFlux
- Imprecise citation in terms of what sites used (table of sites/versions could address this)

# Data Paper

- Provides a description of the dataset and methods used to produce the data
  - DOI of data paper could be used as citation for the data
  - All contributors could be authors (like FLUXNET2015)
- Imprecise citation in terms of what sites used (table of sites/versions could address this)
- Easier to trace citations of the data
- Greater visibility of the data
- Requires CC BY 4.0

# Dynamic Data Citations

- Provide a DOI per request or download
  - Covers a specific set of sites and versions of the data used in a paper
  - Can decide authorship in citation
  - DOI landing page provided by AmeriFlux with info of sites/versions used
  - Cited in reference section
- Tracking usage of data in publications requires significant automation
- Difficult to track citation of an individual site’s data (relies on AmeriFlux maintaining statistics)

# Questions?

# Proposed AmeriFlux Embargo Policy for New AmeriFlux Sites

- What is it?
  - Opportunity to get early feedback on data quality to new sites
  - Only for sites who have never published data in AmeriFlux
  - Must be requested by a site (not automatic)
- What is provided?
  - Automated quality check processing of data feedback (format and data)
  - Manual interpretation of automated QA at AMP discretion
- Additional information
  - No ONEFlux processing (gap-filling and partitioning)
  - No Site visits
  - Data may be published by AMP two years after submission