



US Army Corps of Engineers®



Streamflow Duration Assessment Methods: Web Application and Data Interpretation

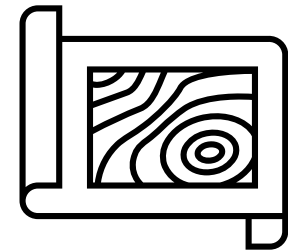
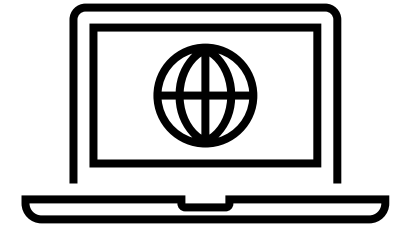
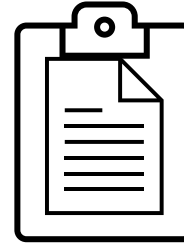


Video Training
2024



Web Application and Data Interpretation

- Web Application
 - Selecting a region
 - Entering indicator data
 - Running the model
 - Generating a report
- Classification Outcomes
- When more information is desired



Web Application

<https://rconnect-public.epa.gov/SDAMs/>

- Step 1: Enter coordinates or select region
- Step 2: Enter indicator data & run model
- Step 3: Enter additional information for report

The same web application is used for all final Regional SDAMs

Step 1: Enter coordinates, select region, or choose on map

- Enter coordinates in decimal degrees North and East (longitude should be **negative**)
- Entering coordinates or choosing a location on the map will generate a location map in the downloadable report

Step 1 Enter reach coordinates or select reach location on map.

Method for Assessing Reach Location

Enter Coordinates ▾

Enter coordinates in decimal degrees to determine if the site is in a SDAM study area.

33.0787

Latitude

-116.6020

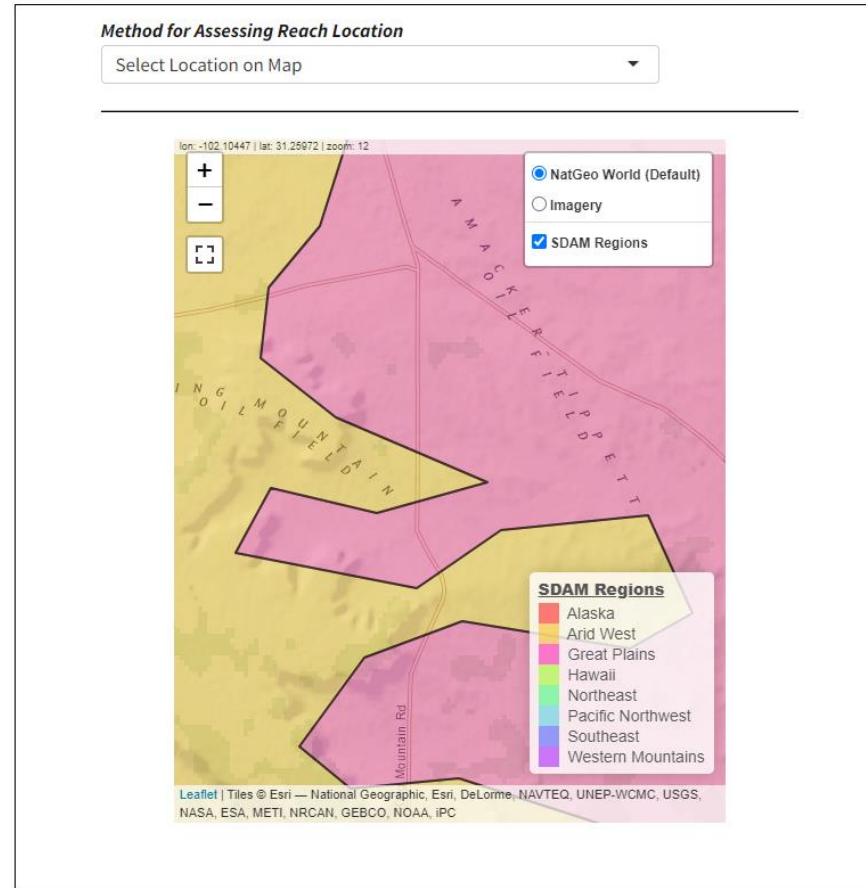
Longitude

Assess Reach Location

**SDAM
Region:
Arid
West**

Step 1: Enter coordinates, select region, or choose on map

Step 1 Enter reach coordinates or select reach location on map.



- Use cursor to select region by identifying location of assessment reach on map

Step 1: Enter coordinates, select region, or choose on map



The location of your site is outside of any SDAM region. Please check your latitude and longitude coordinates to ensure they are entered in the correct format (decimal degrees and WGS84 datum).



This site is located within 10 miles of another SDAM region:

Great Plains



- Warning messages if coordinates fall outside areas with available SDAMs, or near boundaries

Step 1: Enter coordinates, select region, or choose on map

Step 1 Enter reach coordinates or select reach location on map.

Method for Assessing Reach Location

Select Region ▼

Select SDAM Region if not entering coordinates:

No Region Selected ▲

- No Region Selected
- Arid West
- East
- Great Plains
- Pacific Northwest
- Western Mountains

Model Data

Step 2: Enter indicator data – Arid West example

Arid West SDAM

Indicators

Perennial indicator taxa

- 0
- 1 to 4
- 5 to 9
- 10 to 19
- Great than or equal to 20

Slope

‰ 1

Number of hydrophytic plant species

- 0
- 1
- 2
- 3
- 4
- Greater than or equal to 5

Prevalence of upland rooted plants in streambed

Upland rooted plants include FAC, FACU, UPL, NI, or not listed in the regionally appropriate National Wetland Plant List.

- 0 (Poor)
- 0.5
- 1 (Weak)
- 1.5
- 2 (Moderate)
- 2.5
- 3 (Strong)

Algal cover

- Not detected
 - <2%
 - 2-10%
 - 10-40%
 - >40%
- Check here if algae exclusively appears to have been deposited from an upstream source, and no local growth is evident.

Differences in vegetation

- 0 (Poor)
- 0.5
- 1 (Weak)
- 1.5
- 2 (Moderate)
- 2.5
- 3 (Strong)

Riffle-pool sequence score

- 0 (Poor)
- 0.5
- 1 (Weak)
- 1.5
- 2 (Moderate)
- 2.5
- 3 (Strong)

Enter the number of bankfull measurements (m) (min. 1, max. 3) and associated measurement values to the nearest 0.1 m

3

bankfull measurement 1

3.1

bankfull measurement 2

Mean bankfull width (m): 2.8

Step 2: Run model



- You can stop now if you only want to know the classification to record in field form.

Step 3 (optional): Enter additional info to generate a report – Western Mountains example

If a standardized report is desired, proceed to Step 3

- Enter information about the site, the assessment conditions, plus any supplemental information
- Upload photographs of the reach or of individual indicators and provide descriptive captions.
- Generate a PDF on your local computer.
 - No data is stored or shared with the U.S. EPA or U.S. Army Corps or their contractors when you use this app.

Step 3 (optional) Enter additional information and generate a report (no information saved or stored)

Western Mountains SDAM Report

* Maximum file upload size is 30MB.

Enter information about the assessment. Indicators required for classification are filled in from entries above

General information

Project Name or Number:

Site Code or Identifier:

Assessor(s):

Waterway Name:

Visit Date:

Current Weather Conditions (check one):

- Storm/Heavy Rain
- Steady Rain
- Intermittent Rain
- Snowing
- Cloudy
- Clear/Sunny

Example report generated by the web application

Streamflow Duration Assessment Methods
SDAM Version 2.0 Release Date: October 2024
<https://www.epa.gov/streamflow-duration-assessment>
Visit date: 2022-03-20
Report generated date: 2024-10-20
Project name: Demo Park
Site code: MTV
Regional SDAM classification: Western Mountains

General site information

Project name or number: Demo Park
Site code or identifier: MTWM1563
SDAM Region: Western Mountains
Adjacent SDAM Regions within 10 miles: Great Plains
Assessor(s): T. Swift
Waterway name: Pinkham Creek
Visit date: 2022-03-20
Current weather conditions: Cloudy
Notes on current or recent weather conditions:
Location: 48.2209 N, -112.4718 E
Surrounding land use within 100 m:
Notes on land use:
Description of reach boundaries:
Assessment reach length (m):
Disturbed or difficult conditions:
Notes on disturbances or difficult site conditions:

Observed hydrology

Percent of reach with surface flow:
Percent of reach with surface and sub-surface flows:
Number of isolated pools:
Notes on observed hydrology:

Site photos

Top of reach looking downstream:

SDAM Version 2.0 October 2024, Date of site visit: 2022-03-20

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Middle of reach looking upstream:
Middle of reach looking downstream:
Bottom of reach looking upstream:

Site sketch

Indicators

Mean bankfull channel width (m): 2.8
Notes on mean bankfull channel width:
Mean bankfull channel width photos and descriptions:
Abundance of Ephemeroptera, Plecoptera, and Trichoptera: 1
Perennial indicator taxa: 0
Aquatic macroinvertebrates in assessment area: Aquatic mac
Notes on aquatic macroinvertebrates:
Macroinvertebrate photos and photo descriptions:
Slope: 1%

SDAM Version 2.0 October 2024, Date of site visit: 2022-03-20

Notes about slope:
Slope photos and descriptions:
Shading: 2%
Notes about shading:
Shading photos and descriptions:

Hydrophytic plants: 1
Vegetation in assessment area: vegetation present
Notes about hydrophytic plant species:
Hydrophyte photos and photo descriptions:

Prevalence of upland rooted plants in streambed: 1 (Weak)
Notes about upland rooted plants:
Upland rooted plants photos and descriptions:

Differences in vegetation: 1 (Weak)
Notes about differences in vegetation:
Vegetation difference photos and descriptions:

Riffle-pool sequence: 1.5
Notes about riffle-pool sequence:
Riffle-pool photos and descriptions:

Particle size or stream substrate sorting: 1.5 (Moderate)
Notes about particle size or sorting:
Substrate photos and descriptions:

Supplemental information

Additional notes about the assessment:
Supplemental information photos and descriptions:

SDAM Version 2.0 October 2024, Date of site visit: 2022-03-20

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Western Mountains Regional SDAM classification

INTERMITTENT

[SDAM resources](#)

End of Report

SDAM Version 2.0 October 2024, Date of site visit: 2022-03-20

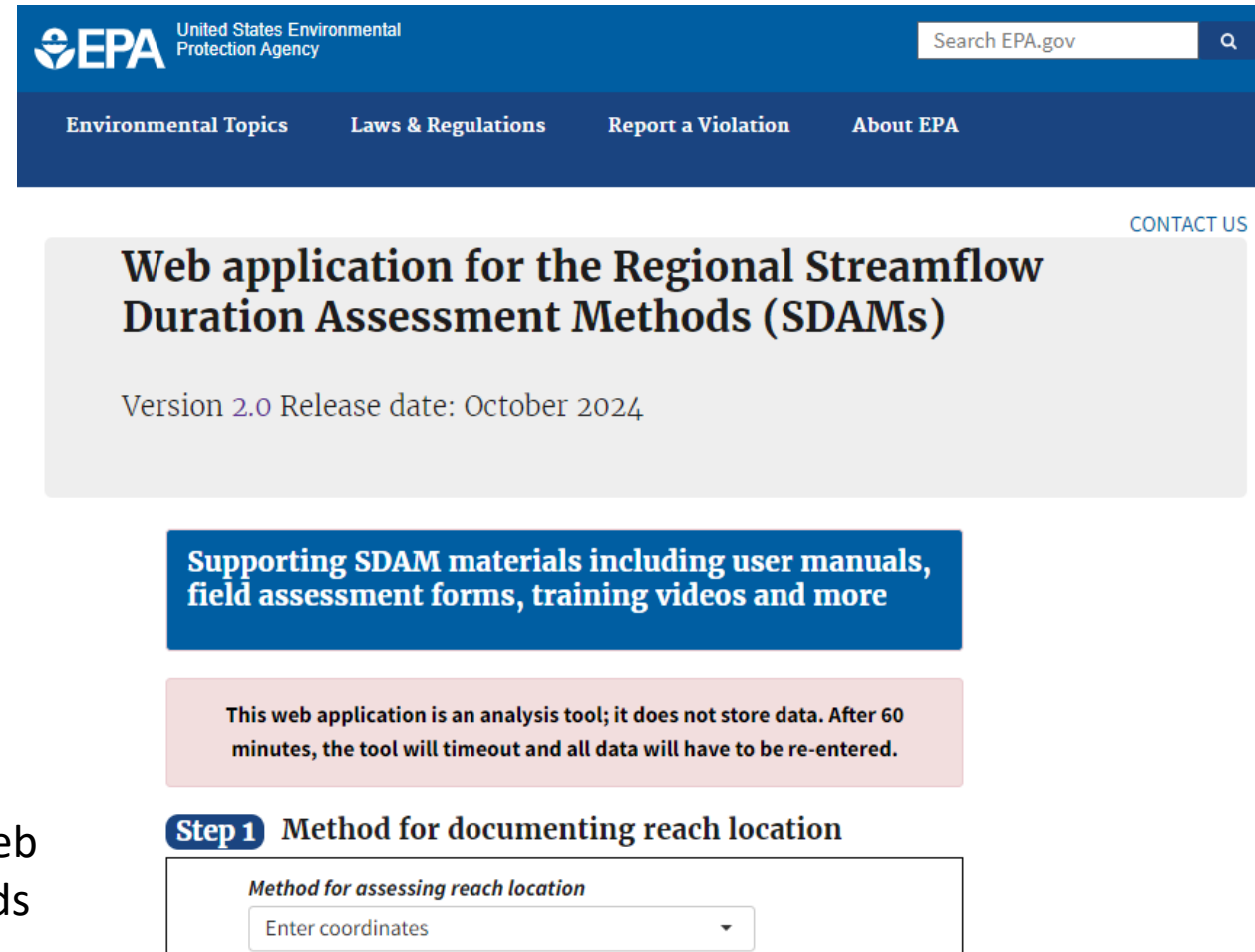
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Classification Outcomes

The SDAM web application returns one of six classifications:*

- *Ephemeral*
- *Intermittent*
- *Perennial*
- *At least intermittent*
(not ephemeral)
- *Less than perennial*
(not perennial)
- *Needs more information*

*The Pacific Northwest SDAM does not require use of the web application and does not include Less than perennial or needs more information as possible outcomes



The screenshot shows the EPA website header with the logo and navigation links: Environmental Topics, Laws & Regulations, Report a Violation, and About EPA. A search bar is visible in the top right. The main content area features a title for the 'Web application for the Regional Streamflow Duration Assessment Methods (SDAMs)' with a version of 2.0 and a release date of October 2024. Below this, there is a blue box with the text 'Supporting SDAM materials including user manuals, field assessment forms, training videos and more'. A pink box contains a warning: 'This web application is an analysis tool; it does not store data. After 60 minutes, the tool will timeout and all data will have to be re-entered.' The 'Step 1' section is titled 'Method for documenting reach location' and includes a dropdown menu labeled 'Method for assessing reach location' with the text 'Enter coordinates' and a search icon.

What does *At least intermittent* mean?

- Observed indicators are inconsistent with *Ephemeral*.
- Cannot distinguish between *Perennial* and *Intermittent* with high confidence.
- It does not mean the reach is nearly perennial.
- This classification is sufficient for some management decisions.
- Occurred in less than 4% of site visits within each region.
- Re-assessment during peak growing season may provide a definitive perennial or intermittent classification
- Observations of flow during a single well-timed site visit (e.g., peak of the dry season when rainfall is not above normal) may also help resolve whether the reach is intermittent or perennial.



Rock Creek, MT; True class: Intermittent
Classified as “At least intermittent”
(1 visit out of 6 [17%])



What does *Less than perennial* mean?

- Observed indicators are inconsistent with *Perennial*.
- Cannot distinguish between *Intermittent* and *Ephemeral* with high confidence.
- This classification is sufficient for some management decisions.
- Occurred in less than 3% of site visits within each region.
- Re-assessment during peak growing season may provide a definitive intermittent or ephemeral classification
- Observations of flow during a single well-timed site visit (e.g., wet season when rainfall is not below normal and no recent precipitation) may resolve whether the reach is intermittent or ephemeral.



Unnamed Tributary to Wildhorse Reservoir,
NV

True class: Ephemeral
Classified as E twice, LTP once

When more information is desired

- Sometimes, additional information is desired (e.g., assessment occurred under sub-optimal conditions)
- More precision desired (e.g., less than perennial, at least intermittent or needs more information)
- Several options may provide greater insight:
 1. Conduct additional evaluations at the same site
 2. Conduct additional evaluations at nearby sites
 3. Review historical aerial imagery

Sub-optimal assessment conditions

Heavy snow cover



Flooding, turbid



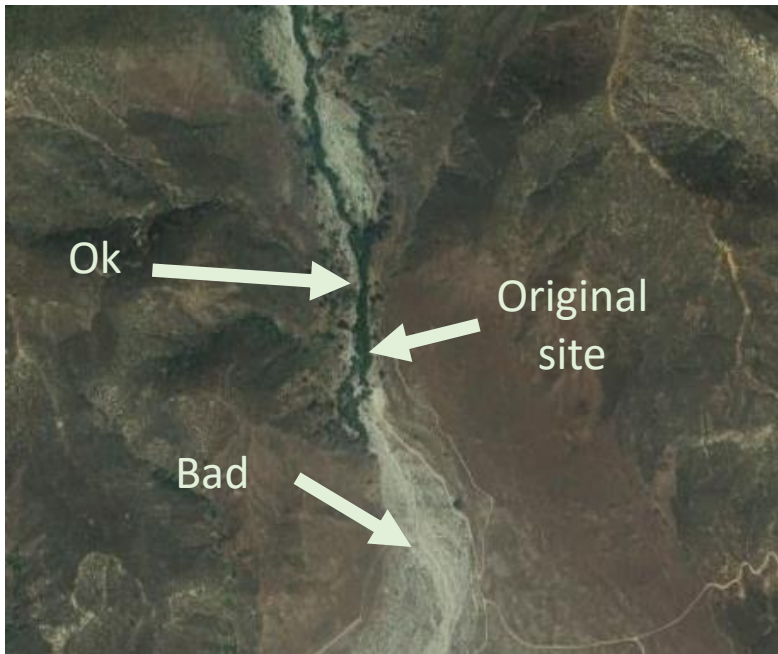
When more information is desired: Conducting additional evaluations at the site

Was site-visit influenced by a storm? Or by transient disturbance (e.g., recent vegetation removal or re-grading)?

- Sometimes, waiting even a few weeks after these events can produce much clearer information.
- Hydrophytic plants may be more evident/easier to identify in a different season.
- Assessment during the wet/dry season could provide additional insight.

When more information is desired: Conducting additional evaluations at nearby sites

- Indicators may be easier to measure at nearby reaches.
- New reaches should be connected longitudinally, and they must be similar in terms of drivers of streamflow duration (e.g., similar watershed area, valley confinement, underlying geology, etc.).



When more information is desired: Review historical aerial imagery

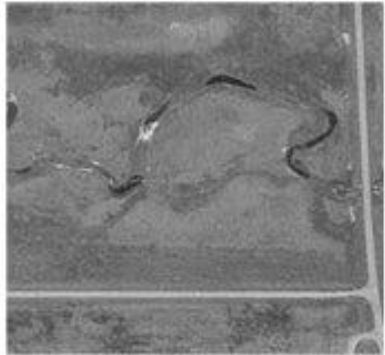
Perennial site: Jemez River near Zia Pueblo, NM



11/2015: Flowing



Intermittent reach: Tributary to North Fork Grand River, Dakota Prairie Grasslands, SD



9/1997: Pools only



12/2003: Pools only



Reach on unnamed wash near Las Vegas, NV



4/2007: Dry



6/2012: Dry



3/2014: Dry

Place imagery in context of antecedent precipitation conditions with [Antecedent Precipitation Tool \(APT\)](https://www.epa.gov/wotus/antecedent-precipitation-tool-apt)

<https://www.epa.gov/wotus/antecedent-precipitation-tool-apt>

For more information about SDAMs visit



<https://www.epa.gov/streamflow-duration-assessment>