

# Development of Regional Streamflow Duration Assessment Methods (SDAMs)



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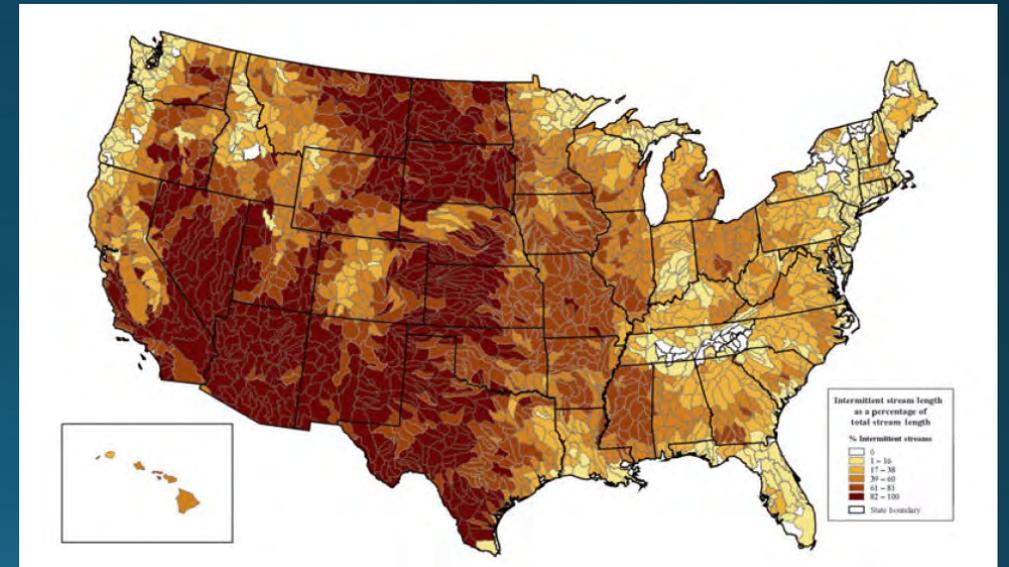
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# What is a Streamflow Duration Assessment Method (SDAM)?

- SDAMs use hydrological, geomorphological and biological indicators to predict the flow duration class of a stream reach
- Rapid field-based assessment tool
  - Single site visit
  - Reach specific determination
- Flow duration class
  - ephemeral, intermittent, perennial



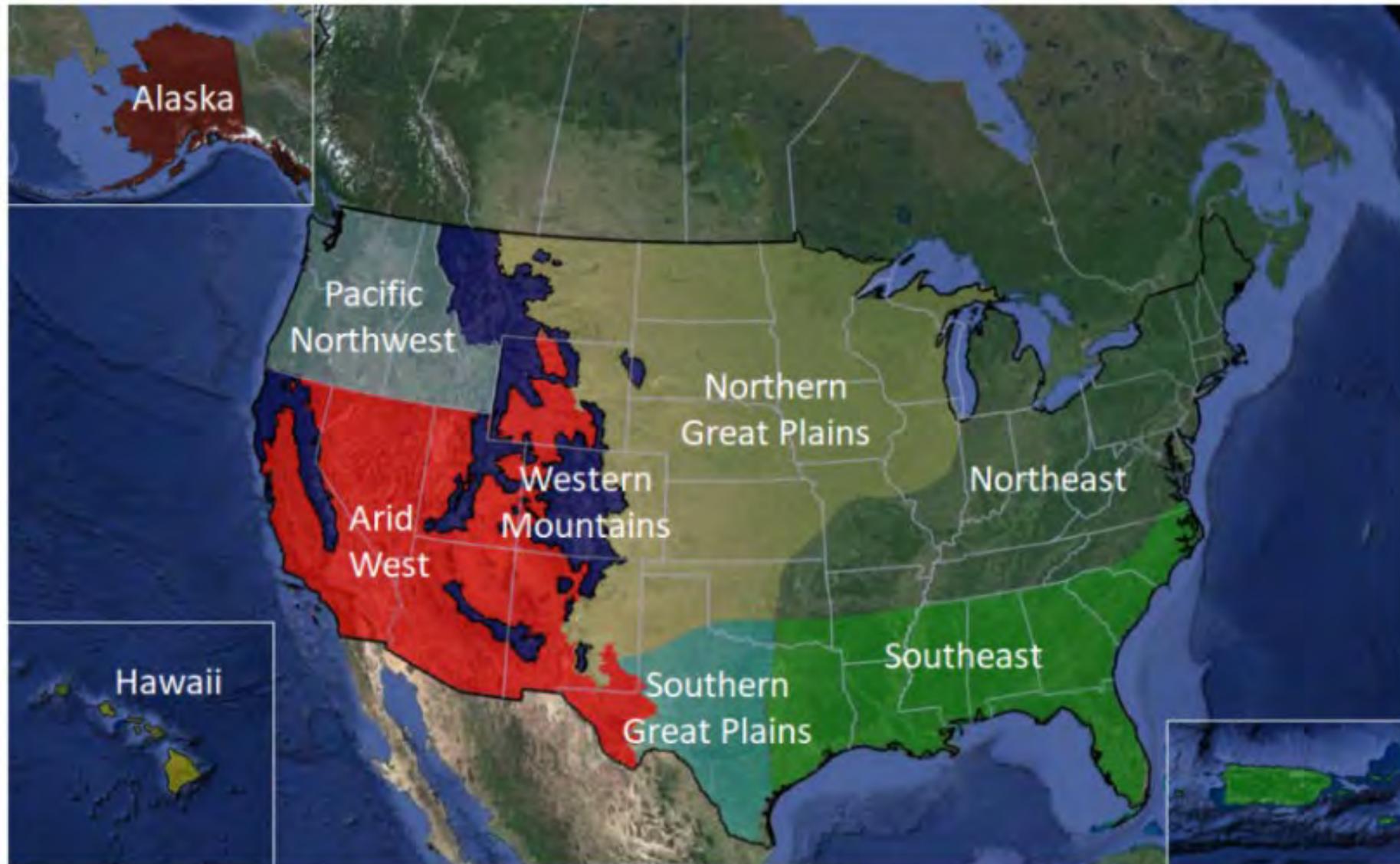
Intermittent and ephemeral stream length in the U.S. (Nadeau and Rains 2007)

# Flow duration classifications for current SDAM development

Ephemeral – flow only in direct response to precipitation

Intermittent – flow for only part of the year, typically during a wet season when the streambed is below the water table or when snowmelt provides sustained flow

Perennial – flow continuously during a year of normal rainfall, streambed located below water table



Map of SDAM study regions, based on regions identified in the U.S. Army Corps of Engineers Ordinary High Water Mark Scientific Support Document (figure modified from [Wohl et al. 2016](#)).

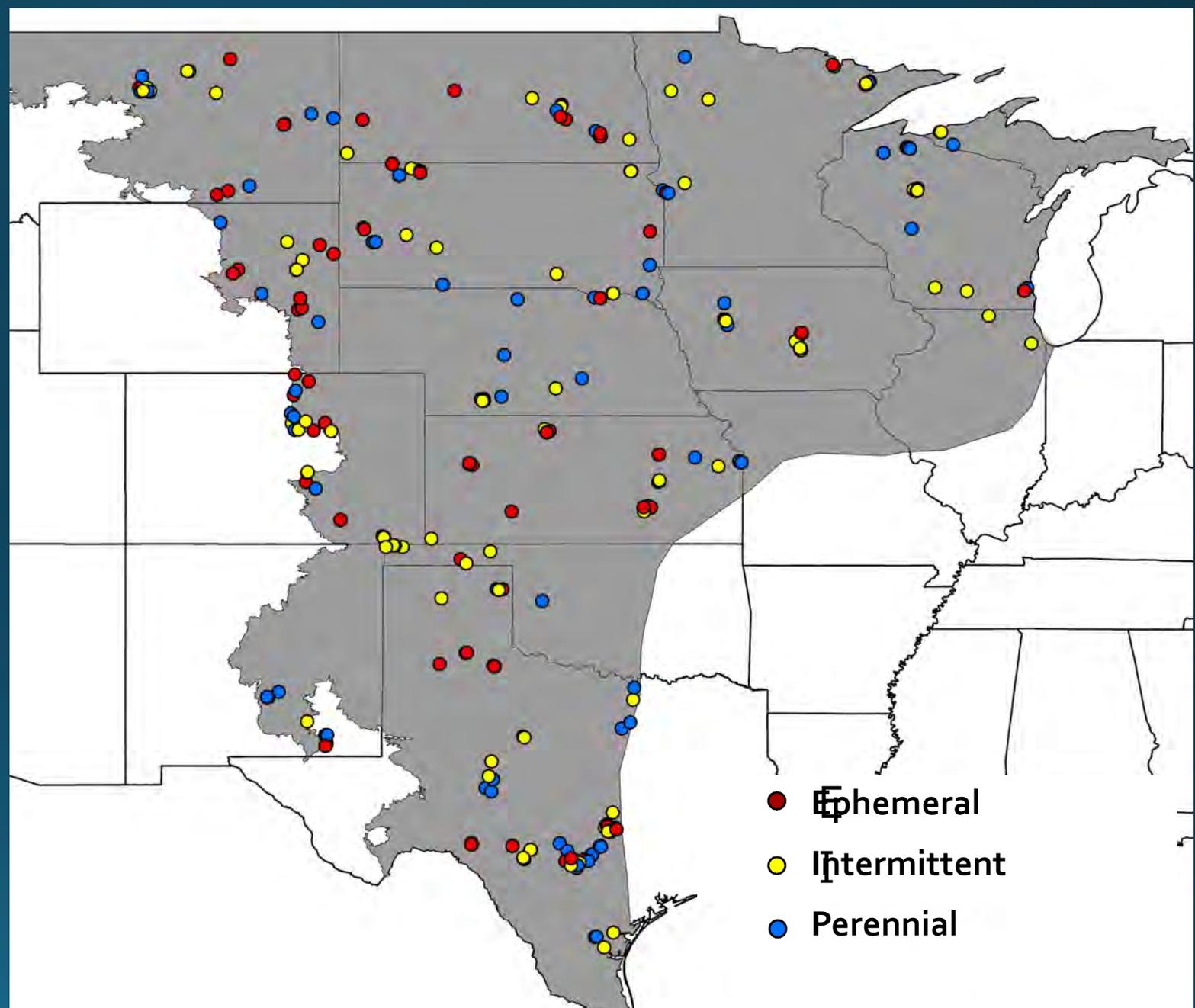
# Method Development Process

Process Step	Description
Preparation	<ul style="list-style-type: none"><li>• Literature review of potential data sources on intermittent and ephemeral streams, and regionally specific indicators</li><li>• Coordination with state, federal, and academic partners</li><li>• Select sites for baseline data collection and validation studies</li></ul>
Baseline data collection	<ul style="list-style-type: none"><li>• Instrumentation of sites one year to confirm “true” flow duration</li><li>• Three site visits to collect streamflow indicator data</li></ul>
Validation data collection	<ul style="list-style-type: none"><li>• One site visit at sites with known flow duration</li></ul>
Method development	<ul style="list-style-type: none"><li>• Data analysis to develop a regionally specific method</li><li>• Internal peer-review and interagency agreement prior to release of a beta method</li></ul>
Rollout	<ul style="list-style-type: none"><li>• Engagement with stakeholders, technical support and training for staff</li><li>• One-year comment period on a beta method and external peer-review</li><li>• Incorporate any final revisions that may be necessary</li></ul>
Continuous baseline sampling	<ul style="list-style-type: none"><li>• Instrumentation maintained at baseline sites and data collection continues to ensure that method development was not biased by interannual climatic or streamflow variation</li></ul>

# Data Collection: Great Plains

Site visits fall 2019-fall 2020

- 110 validation
  - visited once
- 180 baseline
  - visited 3 times
  - installed loggers



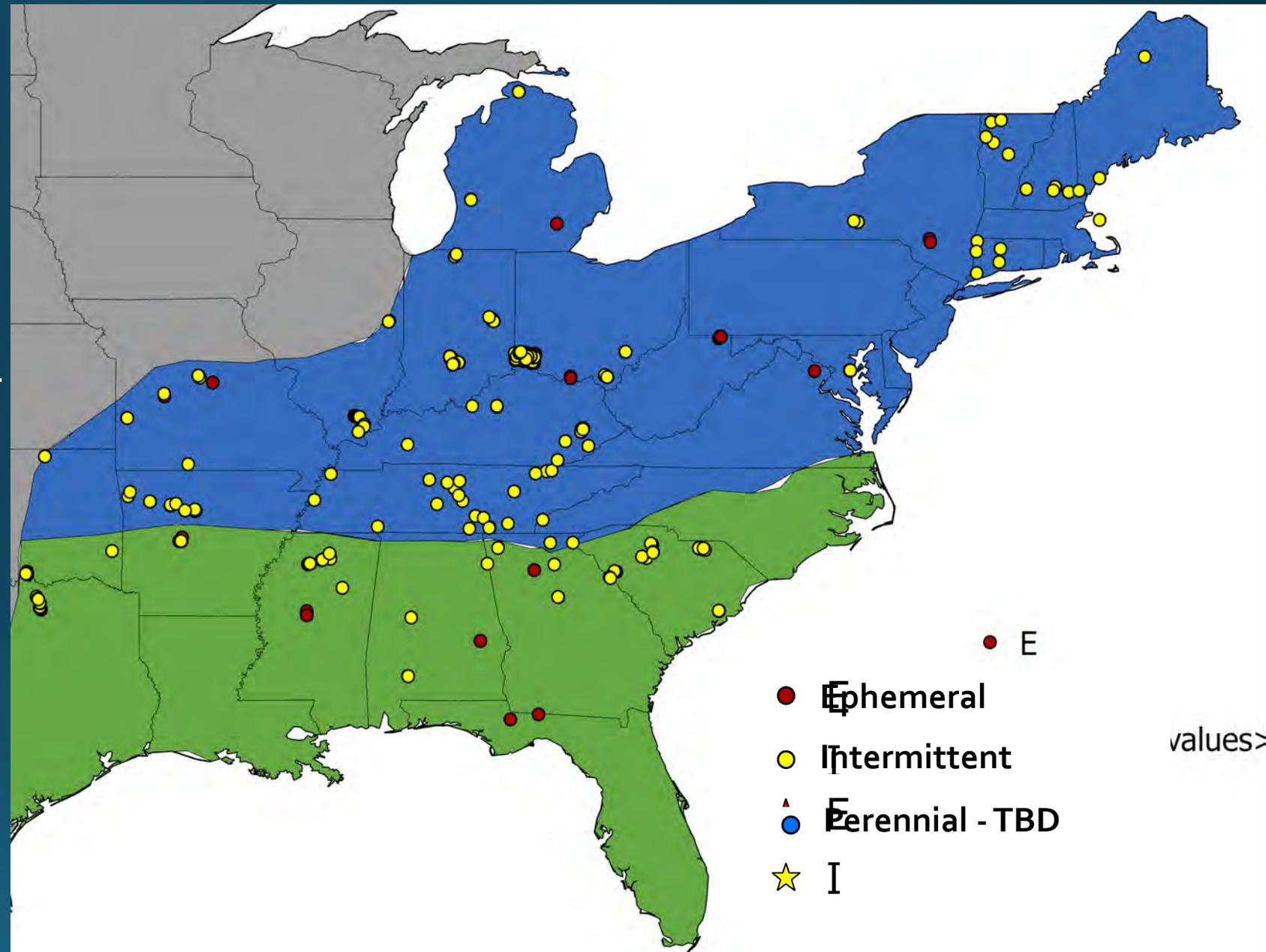
# Data Collection: Northeast- Southeast

Site visits fall 2020-fall 2021

- 160 validation
  - visited once
- 240 baseline
  - visited 3 times
  - installed loggers

Not shown

- Puerto Rico and US VI
  - ~ 10 baseline
  - ~ 10 validation



## Current points of contact identified in Puerto Rico

Tamara Heartsill	USDA
Roberto Viquiera Ríos	Protectores de Cuencas
Omar Perez-Reyes	University of Puerto Rico - El Verde Station
Carlos Ramos Scharrón	University of Texas, Austin - USVI

Questions? Ideas for intermittent and ephemeral sites?

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For more details on existing SDAMs and SDAM development by region visit our website <https://www.epa.gov/streamflow-duration-assessment>