U.S. Department of the Interior
Bureau of Land Management

Overview of BLM's National Lotic Assessment Inventory and Monitoring: 2019—2022

National Lotic AIM Purpose

Report regionally and nationally on the condition and trend of BLM's streams and rivers

Identify priority stressors affecting the health of BLM flowing waters

Establish unbiased baseline conditions from which future conditions can be compared

Integrate BLM's aquatic monitoring programs with existing state and federal efforts

What is the BLM's National Lotic AIM effort?

National Lotic AIM (formerly Western Rivers and Streams Assessment (WRSA)) is a survey of the condition and trend of BLM streams and rivers throughout the contiguous western U.S. The objective is to generate unbiased, quantitative condition estimates from which regional and national aquatic priorities can be established and future conditions compared. National Lotic AIM will provide the first-ever, statistically valid estimates of the chemical, physical, and biological condition of streams and rivers managed by the BLM.

National Lotic AIM is a component of the BLM's Assessment, Inventory, and Monitoring (AIM) strategy designed to standardize aquatic data collection and facilitate science-based decision making. National Lotic AIM is compatible with U.S. Environmental Protection Agency (EPA) and state-based efforts to assess stream health and BLM is partnering with the EPA to implement National Lotic AIM.

What management questions does the BLM's National Lotic AIM address?

National Lotic AIM will answer four central questions:

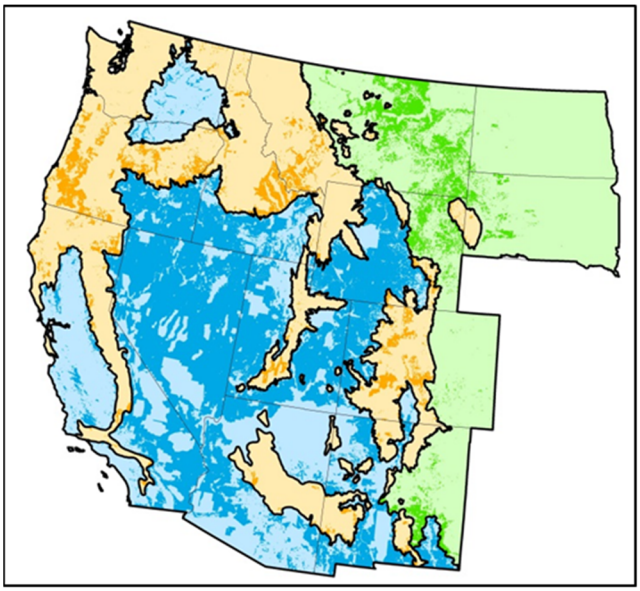
1. What percentage of BLM's streams and rivers are in good, fair, or poor biological condition?
2. What is the linear extent of streams and rivers experiencing stressors such as nutrient, salinity, and fine sediment loading and invasive invertebrates?
3. What is the risk posed by the observed stressors to biological condition?
4. How is the chemical, physical, and biological condition of BLM streams and rivers changing through time?

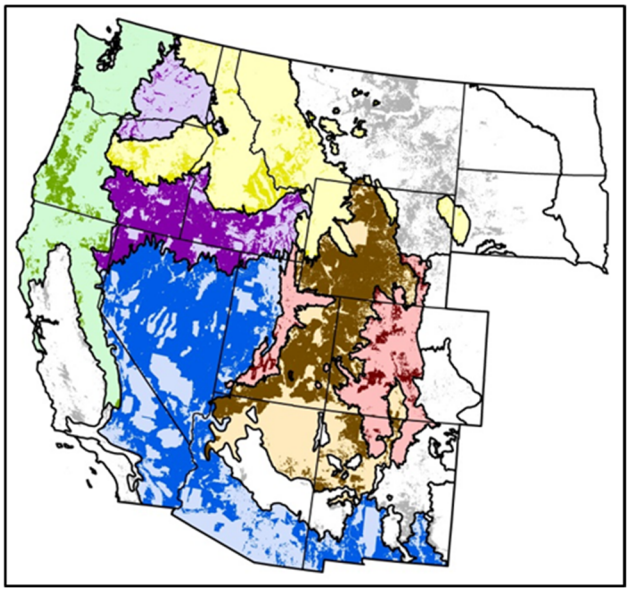
When and where will sampling occur?

The BLM will sample approximately 300 reaches between 2019 and 2022. Approximately three-quarters of reaches will be revisits from the 2013—2015 National Lotic AIM effort. The remaining reaches will be newly established sample reaches. Both wadeable and non-wadeable perennial streams and rivers on BLM lands throughout the contiguous western U.S. will be sampled. Sampling dates will vary by latitude, but will generally occur from May through October during summer low flow conditions.

How will the National Lotic AIM reaches be selected?

The sample design for the National Lotic AIM is a probability-based selection of stream and river reaches from the National Hydrography Dataset. The random selection of sample reaches will result in unbiased or statistically-valid estimates of the chemical, physical, and biological condition of all BLM streams and river with known levels of confidence. Reach selection will be stratified such that condition estimates will be made for at least three different spatial scales: 1. West-wide; 2. Three EPA western climatic regions (left map below) and 3. Six hybrid Level III Ecoregions (right map below) that encompass 95% of the linear extent of BLM's rivers and streams in the contiguous western U.S.





What will the National Lotic AIM measure?

Data collection will be conducted by field crews managed by the University of Montana, with oversight by the National BLM AIM Team. Field crews will take a variety of measurements to characterize the chemical, physical, and biological condition of BLM's streams and rivers following the AIM Field Protocol for Wadeable Systems (TR 1735-2) and the EPA's NRSA protocol for non-wadeable systems. Example indicators computed from field measurements include excessive nutrient, salinity, and sediment loading; instream and riparian habitat complexity; floodplain connectivity; and biological condition and aquatic invasive species as determined by benthic macroinvertebrate samples.

What can you expect as a local BLM field office?

Each state, district, or field office will be assigned a point of contact for National Lotic AIM. Field offices will be notified of the sample reaches that fall within their regions and assistance will be sought by the contractor with accessibility and appropriateness of the selected reaches for sampling. It is important to remember that waterbodies selected in any given field office are not being targeted for specific problems or conditions, but are randomly selected to allow inference to all BLM streams and rivers. Field offices will also be notified as to the approximate time for sampling and will be invited to interact with field crews. All resulting data will be available online (AIM Data Portal) each fall and reports will be produced at the conclusion of the study regarding the condition and trend of BLM streams and rivers.

For more information on the BLM's National Lotic AIM, e-mail us at
ncappuccio@blm.gov