

Title:

Creating the spatial framework for National Aquatic Resource Surveys (NARS): Melding National Aquatic Data Sets with Survey Requirements

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Abstract:

The U.S. EPA's National Aquatic Resource Surveys (NARS) require a consistent spatial representation of the resource target populations being monitored (i.e., rivers and streams, lakes, coastal waters, and wetlands). A sample frame is the GIS representation of this target population, and is created for each resource type. Sample frames for rivers and streams and for lakes are derived directly from NHDPlus, while the sample frames for coastal waters and wetlands have a more complex derivation from several sources. The process of taking nationally available data sets, regardless of source, involves extracting the subset of features that represent the target population and adding additional attributes required for the resource-specific survey design. We improve the sample frames by incorporating corrections to the spatial representation of the resource of interest, using information from GIS and desktop evaluations of selected sample features as well as the results from field sampling visits. In addition, we improve sample frames through incorporation of state-provided sample frames, which often use different source material and contain refinements based on a state organization's knowledge of its aquatic resources. Improving the NARS sample frames reduces over coverage and corrects under coverage of target populations. We address these steps in the ongoing refinement to NARS sample frames and look at how improvements to sample frames: 1) improve NARS survey quality over time, 2) harmonize with state sample frames, and 3) help inform and improve national data sets used in construction of NARS sample frames.

Keywords: GIS, sample frames, NARS, surveys

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