

AN INTERAGENCY COLLABORATION TOWARD IMPROVING INTEGRATION OF WATER QUALITY DATA

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In 2008, the National Oceanic and Atmospheric Administration (NOAA) Integrated Ocean Observing System (IOOS[®]) Program approached the Environmental Protection Agency (EPA) and United States Geological Survey (USGS) to initiate an effort to improve interoperability of water quality data presently provided through disparate formats and Web service types. The first phase of this collaboration identified four potential data management elements: schemas, Web services, catalogues and semantics to advance. An evaluation of existing schemas (e.g. WaterML and SensorML) applicable to water-quality data collected from continuously monitoring observation platforms (e.g. *in situ* sensors) has been identified as a well-suited starting point for a defined project to potentially take forward. The benefit of this effort will be to make accessible water quality data collected through various sources that can be integrated and used more effectively by decision makers for the benefit of managing the health of our nation's waterways. The NOAA IOOS[®] Program is implementing a Data Integration Framework (DIF) employing standardized schemas and Web service types at three NOAA data providers. This is an effort to make accessible interoperable data for *in situ* and gridded data types to initially serve four decision support tools that support four NOAA focus areas: Harmful Algal Blooms, Coastal Inundation, Hurricane Intensity and Integrated Ecosystem Assessments. The schemas and Web services implemented have been adapted from common standards and protocols to make them broadly applicable to the decision support tools selected.

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