Semantic Technologies for Integrating USGS Data

**Use Case**
Integrate Fish Species Occurrence, Hydrologic, Water Quality, and Sediment Geochemistry Data

*Goal:* Combine data from a variety of sources into a single dataset to support aquatic habitat research of freshwater fish species in the Susquehanna River Basin.

**Technical Approach**

- **USGS Data Resources**
  - *Aquatic Bioassessment Data for the Nation (BioData)*
    - BioData provides access to aquatic bioassessment data (biological community and physical habitat data) collected by USGS scientists from stream ecosystems across the Nation.
  - *Mineral Resources Online Spatial Data (Geochemistry)*
    - Offers national-scale geochemical analysis of stream sediments and soils in the United States collected and analyzed under the National Uranium Resource Evaluation program.
  - *Multistate Aquatic Resources Information System (MARIS)*
    - MARIS serves as an online resource containing over one million population estimate, total catch, total weight, and water quality records for nearly 600 fish species sampled by a growing number of state fish and wildlife agencies.
  - *National Hydrography Dataset (NHD)*
    - NHD contains detailed geospatial information about the Nation’s surface water including features such as lakes, ponds, streams, rivers, canals, dams, and stream gages.

**Prototype**

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  - Executable TDB
    - *TDB (Triple-store)*
      - Fuseki (SPARQL Endpoint)
        - *ELDA (Linked Data API)*
          - Client
            - SPARQL DESCRIBE
              - HTTP GET

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