

# MercNet Meta-Database

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# Overview

- Goal of MercNet
- Data collection process
- Description of MercNet meta-database
- Examples of data analysis
  - Trends
  - Causality
- Wildlife mercury data
- Future of MercNet

# Goal and Purpose

- Goal:
  - Characterize the existing mercury monitoring landscape across various ecological components
- Purpose:
  - Examine the extent of mercury monitoring coverage
  - Inform gap analysis
  - Identify potential monitoring network sites

# Process

- Survey of scientific literature
- Data mining from federal agency databases
- Creation of a Data Team to assist in data collection effort:
  - 7 members
  - Federal, state, academic, and private institutions

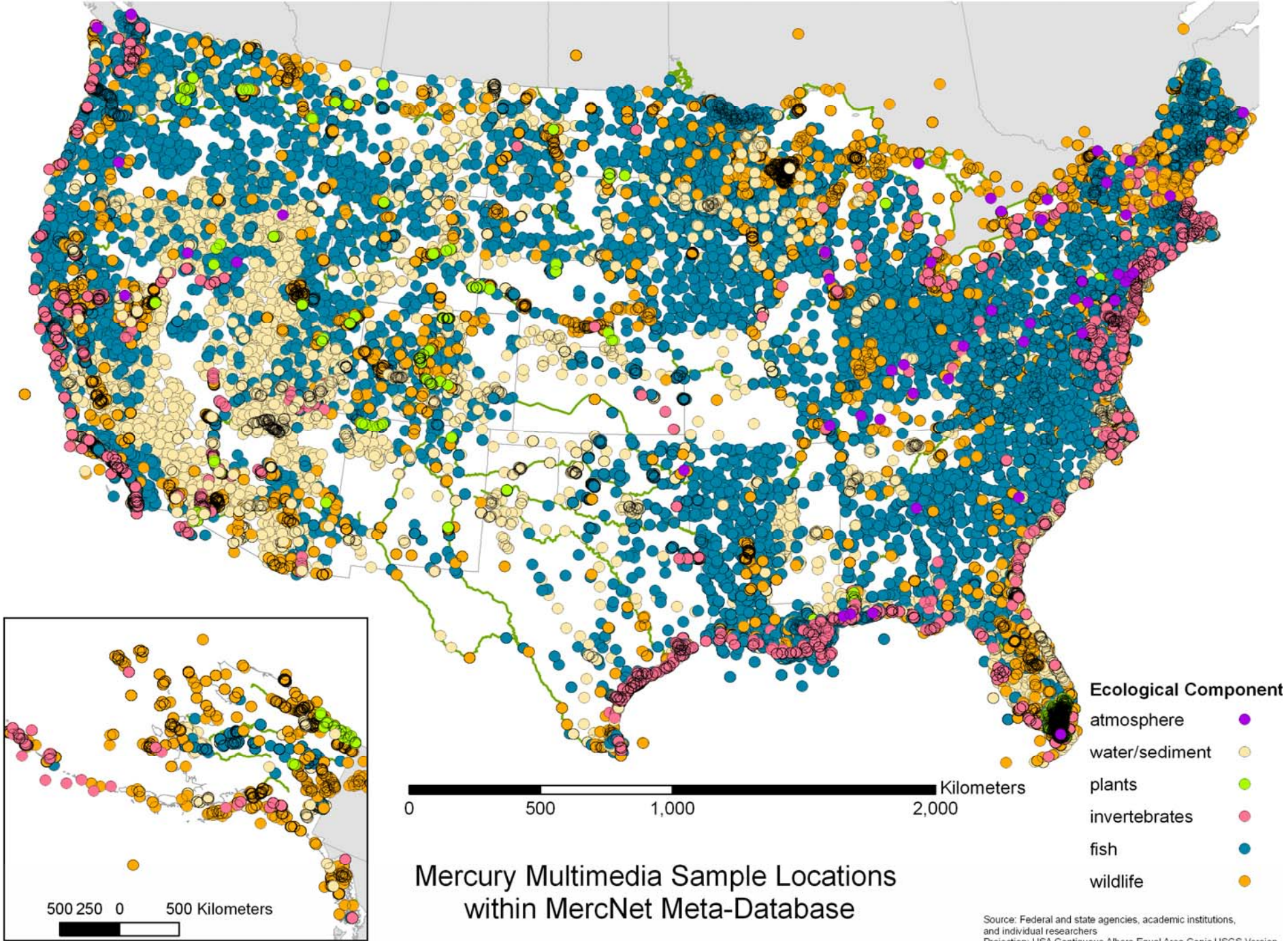
# Major Datasets

- NOAA
  - National Status and Trends Program
- US EPA
  - Environmental Monitoring and Assessment Program (EMAP)
  - Storage and Retrieval Database (STORET)
- USGS
  - National Water Quality Assessment Program (NAWQA)
  - Contaminant Exposure and Effects (CEE)
  - Environmental Mercury Mapping, Modeling, and Analysis (EMMMA)
- USFWS
  - Environmental Contaminant Data Management System (ECDMS)
- BioDiversity Research Institute (BRI)
  - Mercury wildlife database

# MercNet Today

- Records of approximately 200,000 mercury sampling events across the United States
- Various media:
  - Atmosphere
  - Water
  - Sediment and soil
  - Vegetation
  - Invertebrates
  - Fish
  - Birds
  - Reptiles and Amphibians
  - Mammals
- Time span of records is from 1896 to 2007



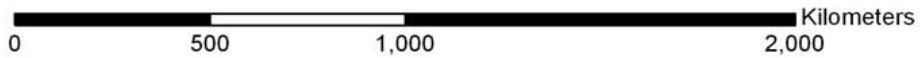
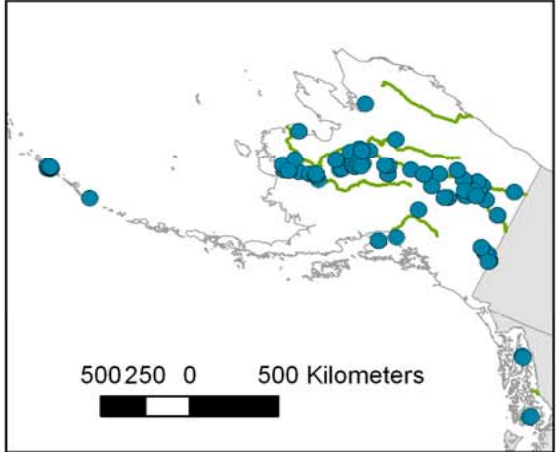
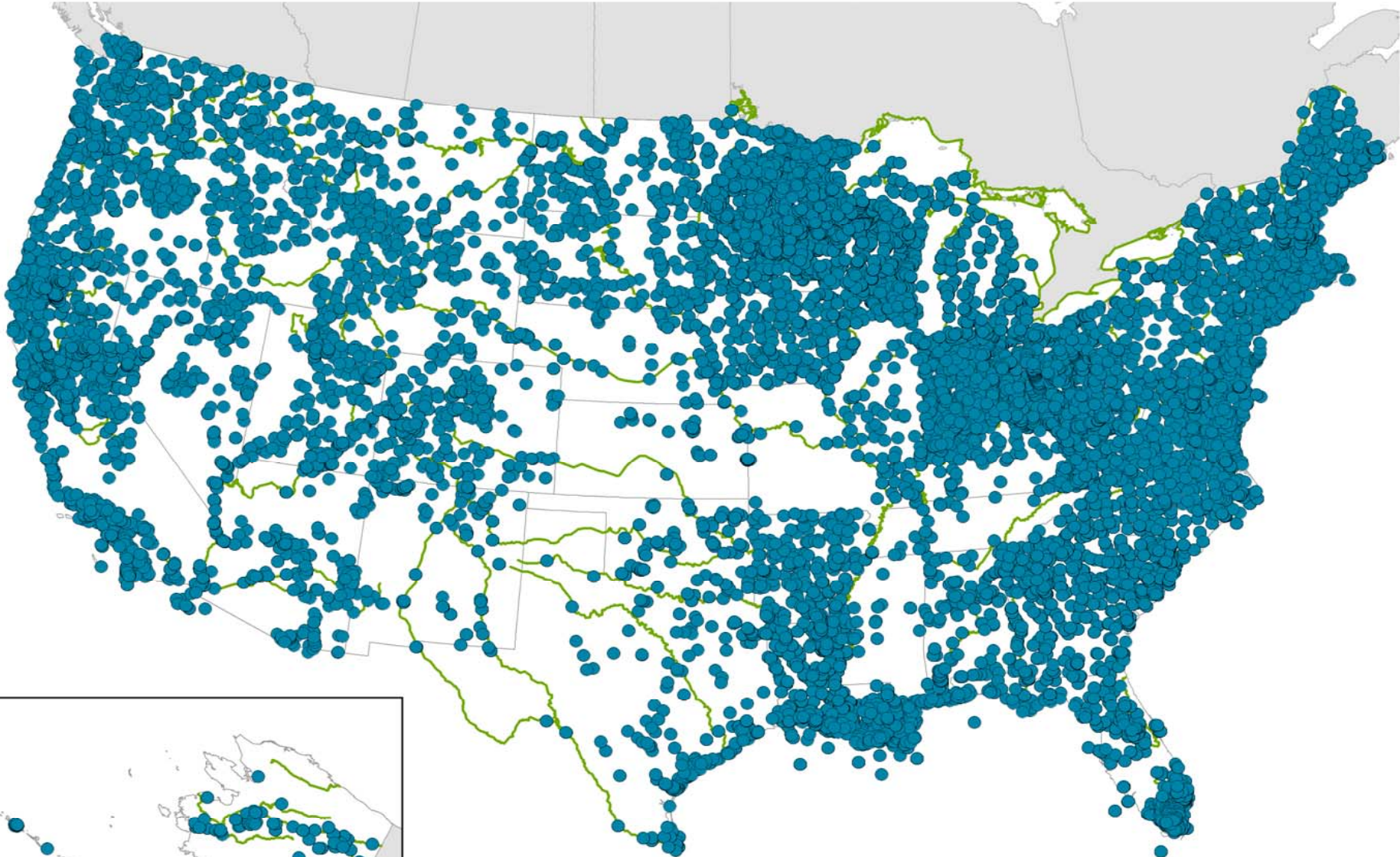


Source: Federal and state agencies, academic institutions,  
and individual researchers  
Projection: USA Contiguous Albers Equal Area Conic USGS Version  
Date: 5/2/2008  
Scale: 1:17,500,000

# MercNet's Role in National Mercury Monitoring Program

- Mapping the data collected in MercNet may assist in identifying:
  - Potential intensive sites
    - Trends
    - Causality
  - Potential cluster sites
  - Data gaps

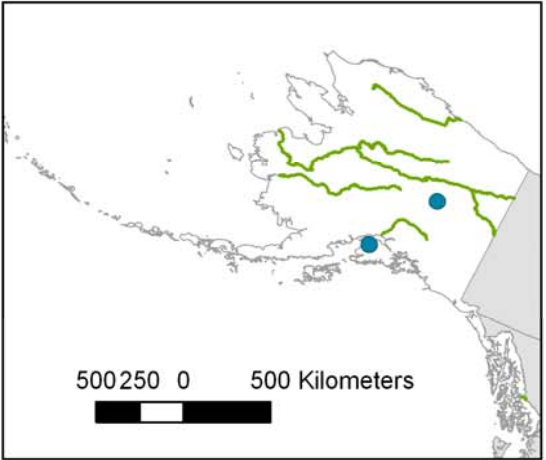
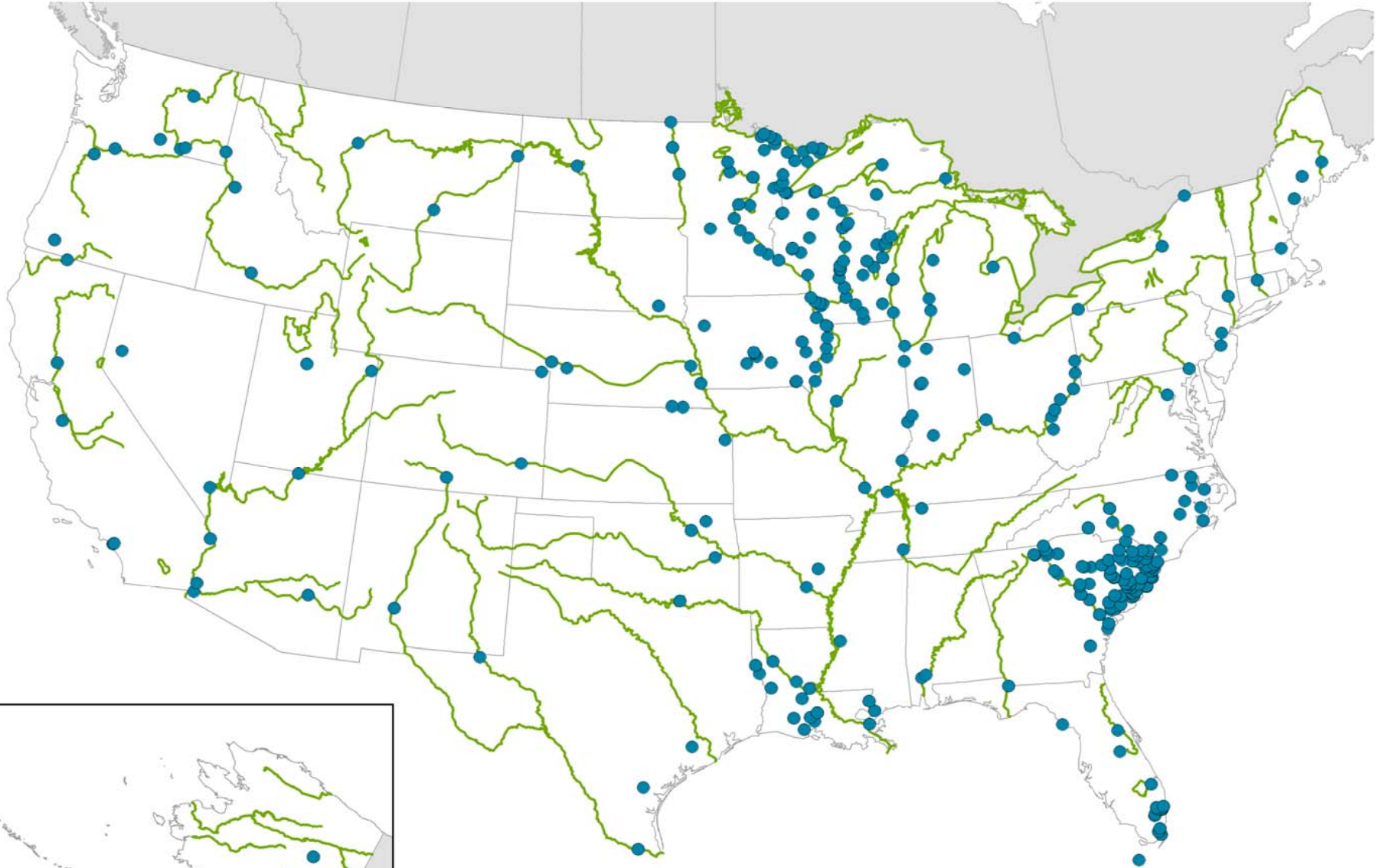




Sampling Locations ●

### Mercury Fish Tissue Sample Locations

Source: Federal and state agencies, academic institutions,  
and individual researchers  
Projection: USA Contiguous Albers Equal Area Conic  
USGS Version  
Date: 5/1/2008  
Scale: 1:17,500,000



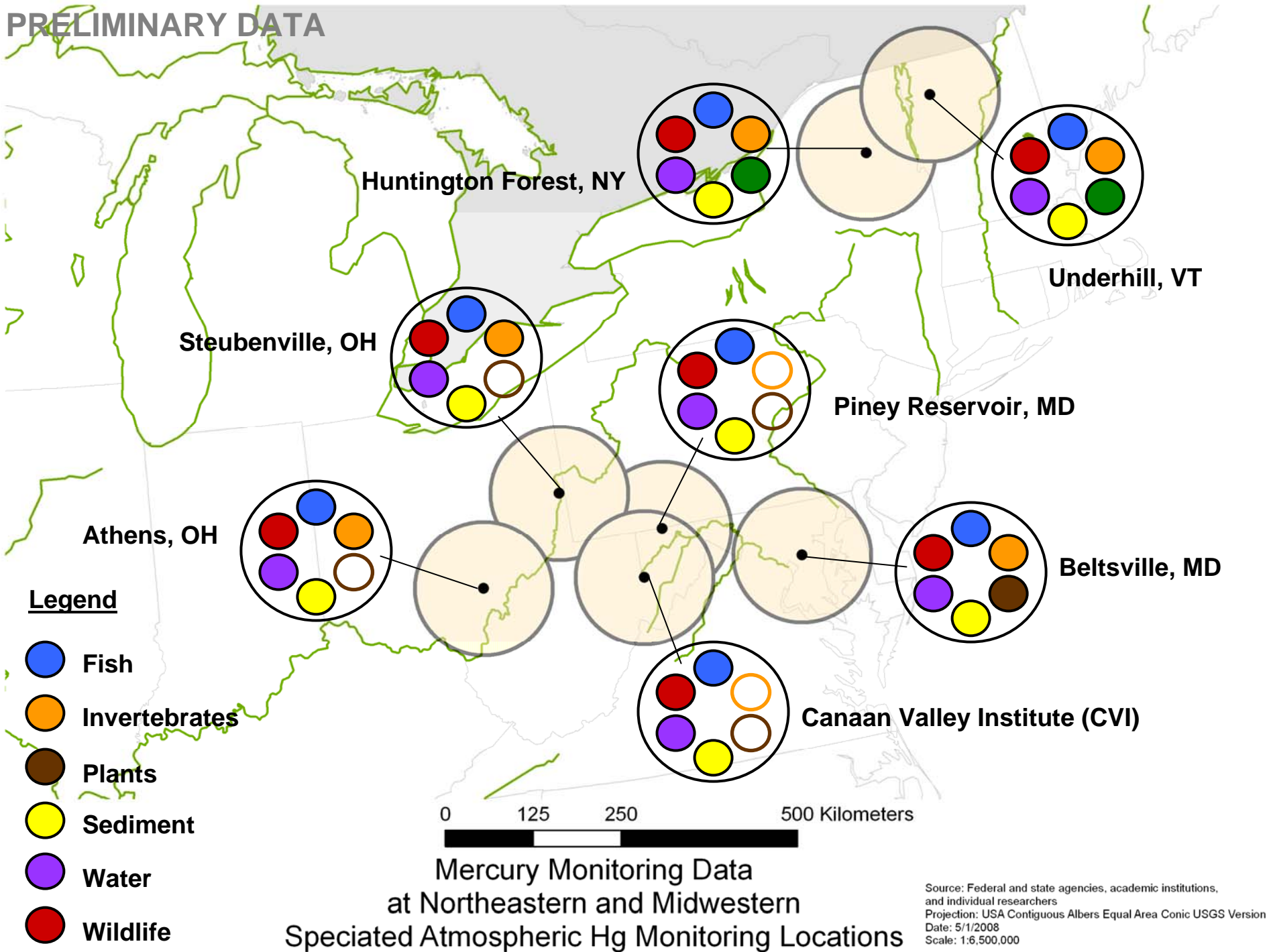
Sampling Locations ●

### Mercury Fish Tissue Sample Locations with Repeat Sampling in at least Five Distinct Years

Source: Federal and state agencies, academic institutions, and individual researchers  
Projection: USA Contiguous Albers Equal Area Conic  
USGS Version  
Date: 5/1/2008  
Scale: 1:17,500,000



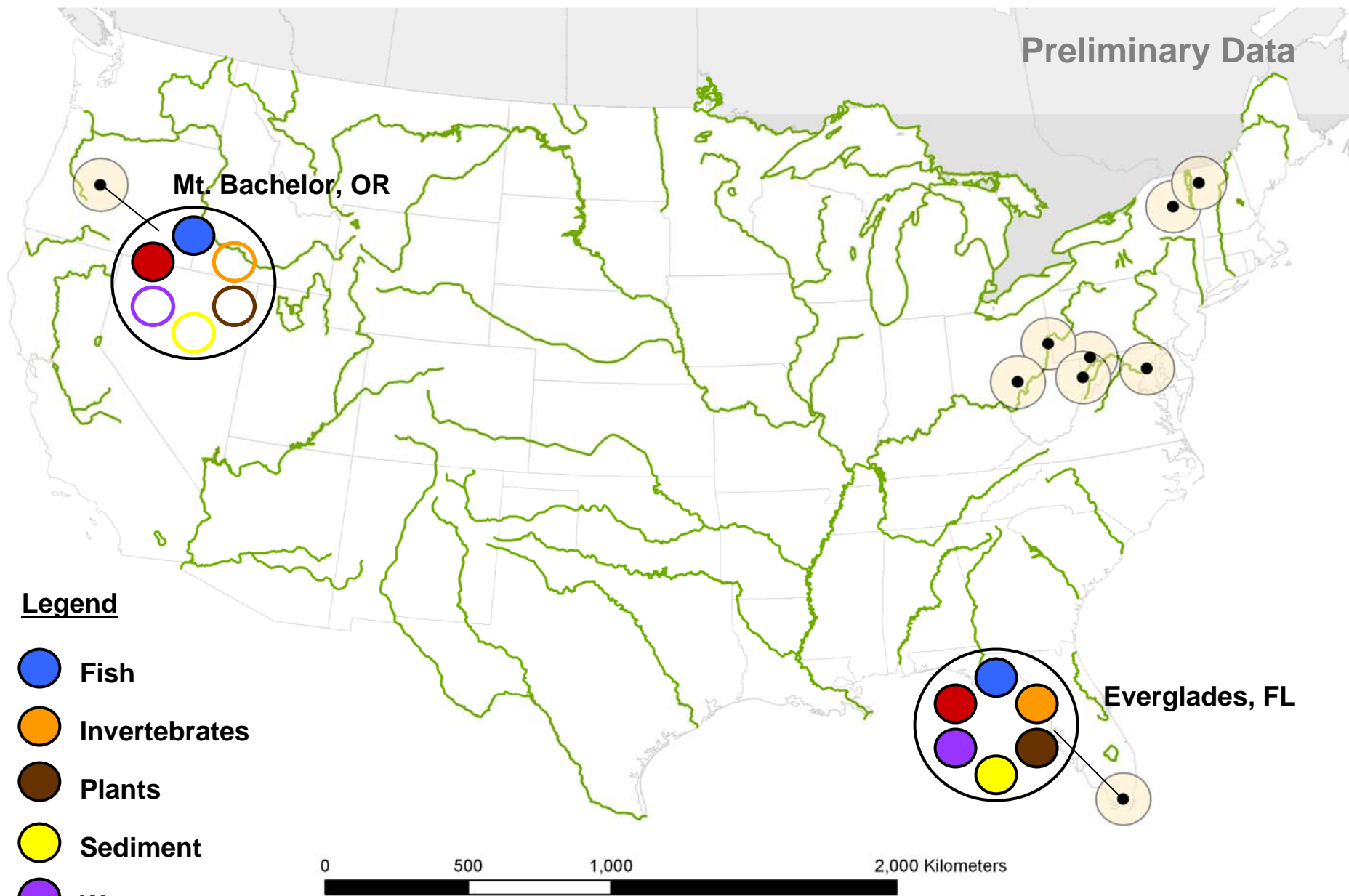
# PRELIMINARY DATA









Mercury Monitoring Data  
at Northeastern and Midwestern  
Speciated Atmospheric Hg Monitoring Locations

Source: Federal and state agencies, academic institutions, and individual researchers  
Projection: USA Contiguous Albers Equal Area Conic USGS Version  
Date: 5/1/2008  
Scale: 1:6,500,000

Preliminary Data



**Legend**

-  Fish
-  Invertebrates
-  Plants
-  Sediment
-  Water
-  Wildlife

**Mercury Monitoring Data  
at Southeast and Western  
Speciated Ambient Hg Monitoring Locations**

Source: Federal and state agencies, academic institutions,  
and individual researchers  
Projection: USA Albers Equal Area Conic USGS Version  
Date: 5/1/2008  
Scale: 1:17,500,000

# Future Use of MercNet

- Completion
  - Contribute data through data submission form included in briefing binder
- Shared resource for mercury monitoring community
  - Meta-data made available to community to facilitate collaboration
  - Additional investigation, resources, and discussion would be necessary to expand on MercNet meta-database to create a mercury monitoring database