

**Albeni Falls Dam
Pend Oreille River and Lake Pend
Oreille Monitoring Update: 2007**

by

**U.S. Army Corps of Engineers
Seattle District**

Albeni Falls/Pend Oreille River Update

- **Water Quality Program**
 - Total dissolved gas and temperature monitoring
 - Temperature study
 - Water quality study

Albeni Falls/Pend Oreille River Update

- Total Dissolved Gas Monitoring
 - Two monitoring sites
 - Albeni Falls forebay and tailwater
 - Seasonal sites (April 1 – September 15)
 - Sites calibrated every two weeks
 - COE data quality criteria (April 5, 2002)
 - Laboratory calibrations
 - Field calibrations
 - Performance checks
 - Equipment
 - Hydrolab MiniSonde 4a TDG sensor/Common Sensing barometer
 - Geomation Model 2380 DCP
 - Radio transmission/GOES station

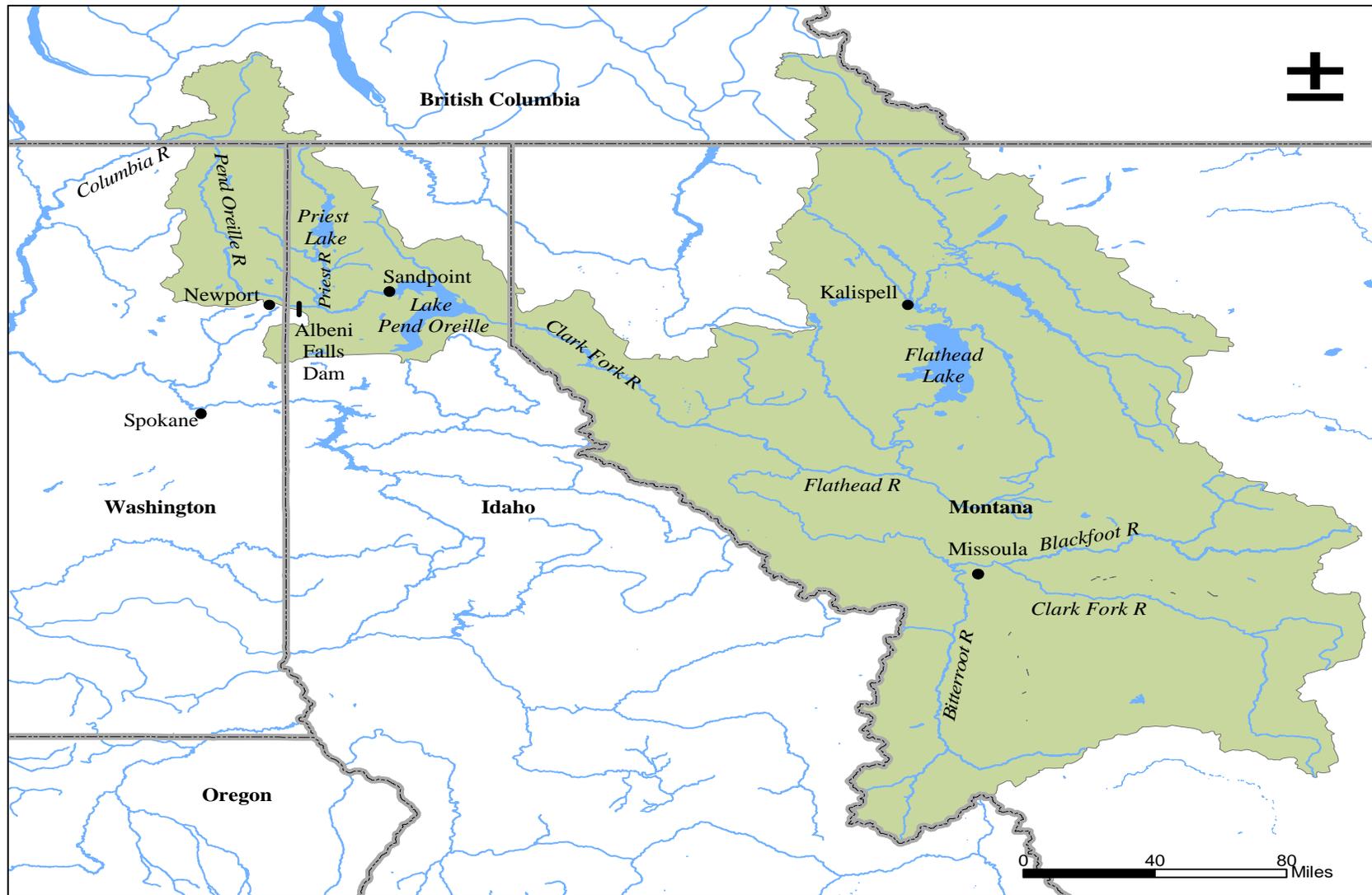


Figure 1. Location of the study area in the Pend Oreille River watershed.

TDG Monitoring

ALFI Established 2004
ALQI Established 2005
Dates in Operation April – September
Calibration Frequency Biweekly



Albeni Falls Total Dissolved Gas Monitoring System



Albeni Falls Forebay (ALFI)



Albeni Falls Tailwater (ALQI)



ALQI →

Albeni Falls/Pend Oreille River Update

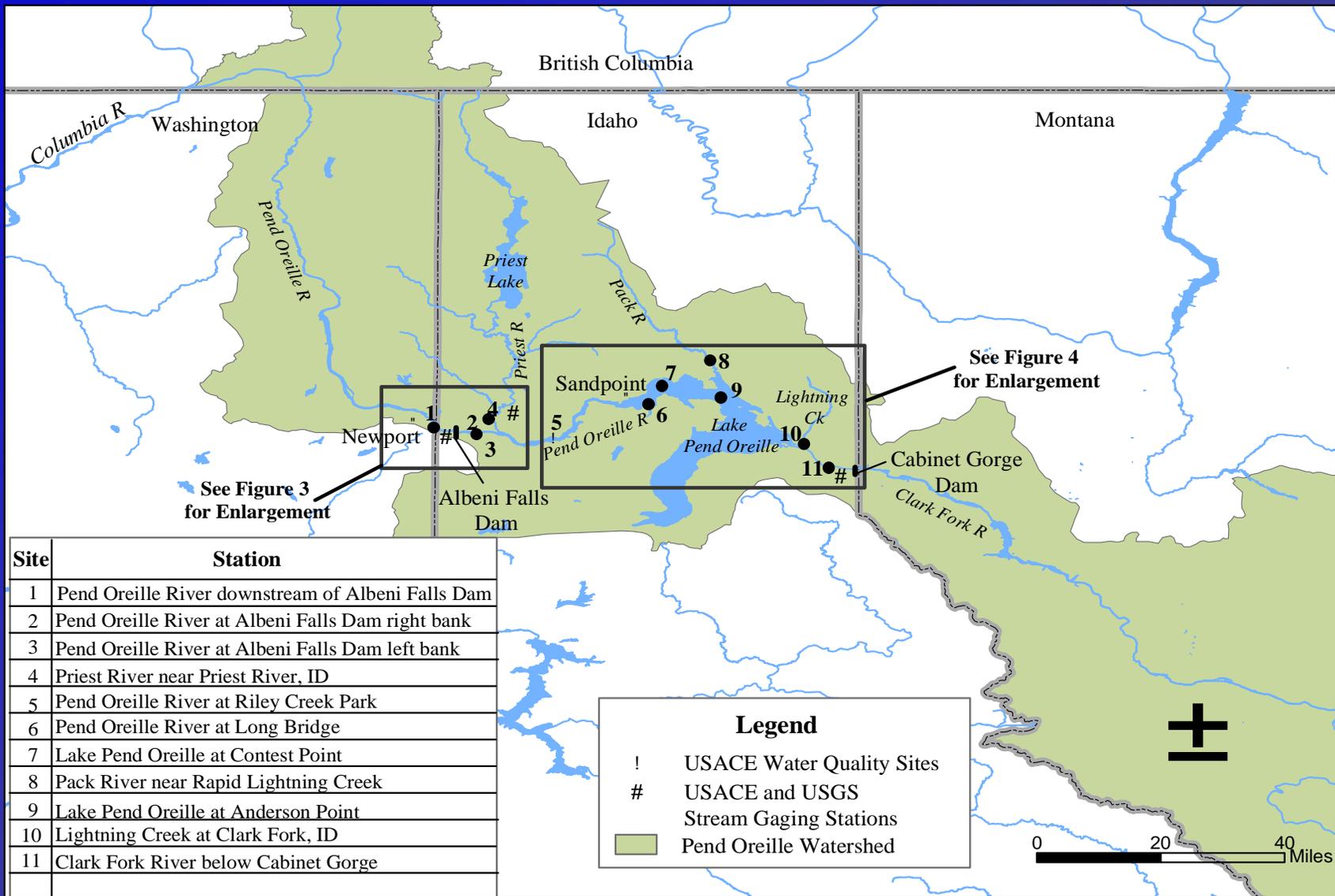
- Temperature Study

- Sampling Design

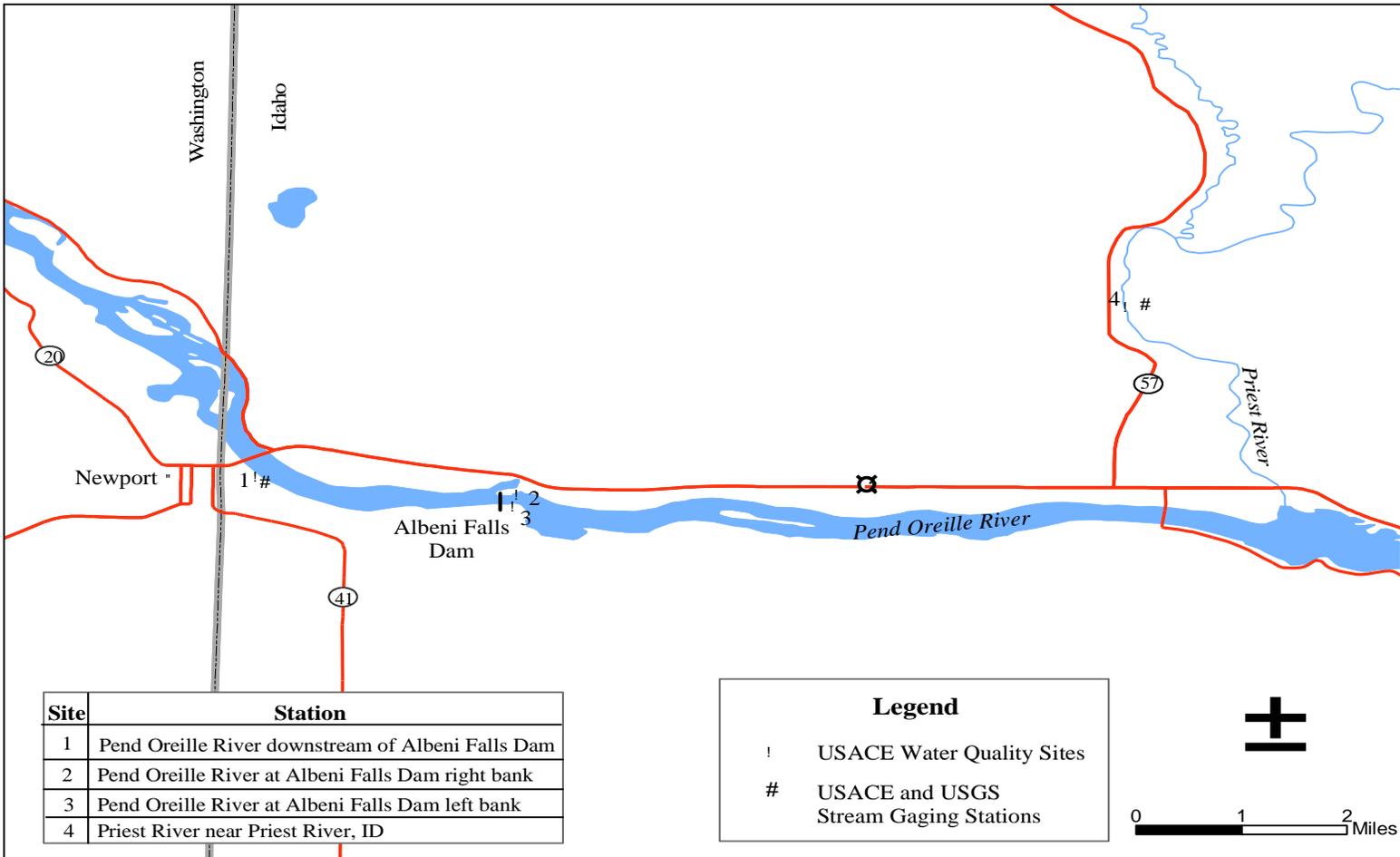
- Study conducted May 1 to November 1 2004, 2005 and 2006
 - Eleven temperature monitoring stations
 - In-river loggers deployed at eight stations representing mainstem and tributaries
 - In-river loggers deployed into the river as far as possible using cables and weights
 - In-lake loggers deployed at three stations representing a deep water station, a shallow water station, and the outlet
 - In-lake loggers deployed as a string attached to a buoy in a vertical profile

- Equipment

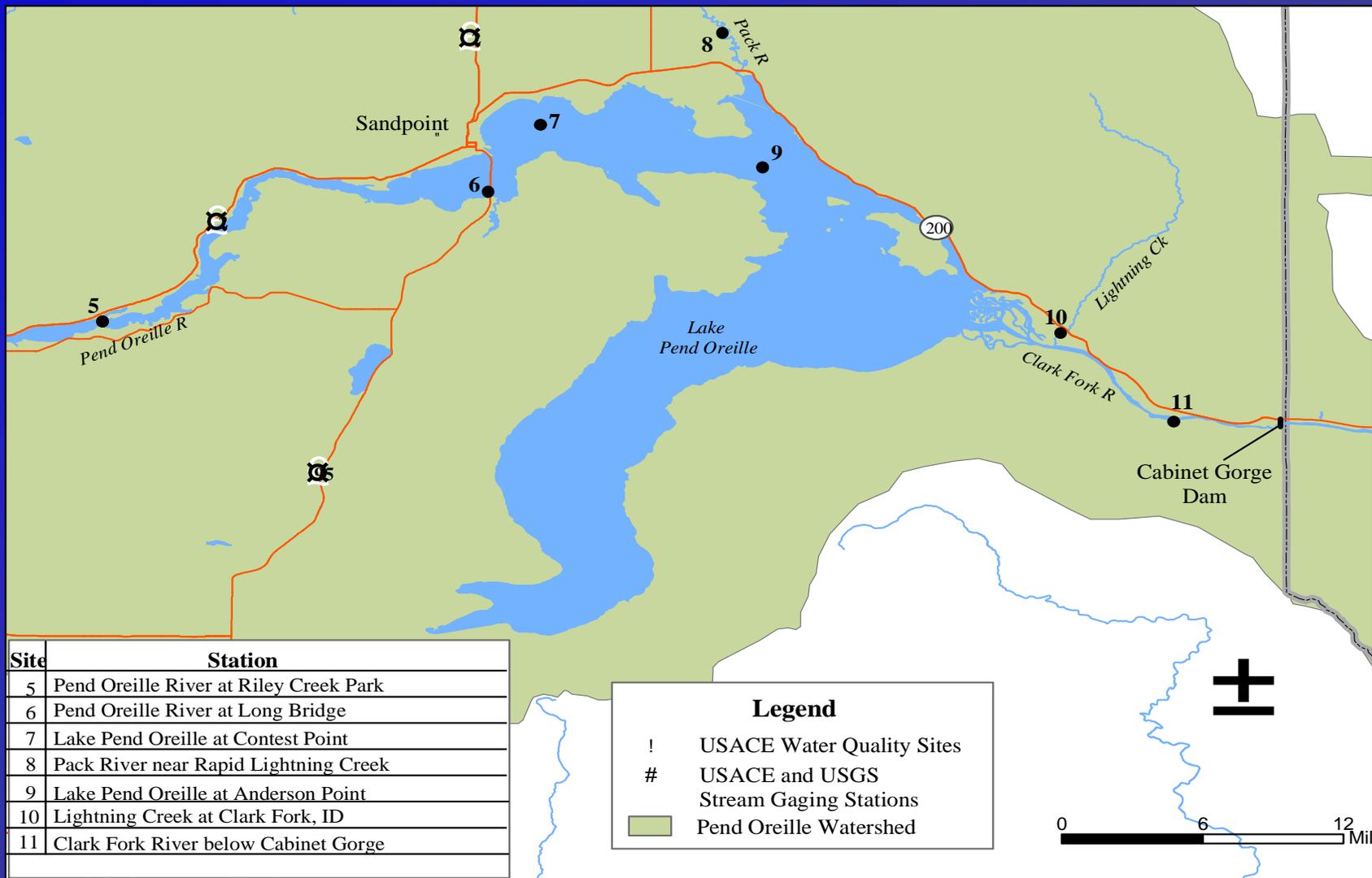
- Hydrolab MiniSonde 4a Water Quality Probes
 - Vemco Minilog and Onset StowAway/Tidbit thermal loggers



Location of study area in the Clark-Fork/Pend Oreille watershed.



Locations of monitoring stations near Albeni Falls Dam.



Location of monitoring stations near Lake Pend Oreille.

Albeni Falls/Pend Oreille River Update

- **Temperature Study**

- Data from 2004 and 2005 have been downloaded and QA/QCd
- Loggers from 2006 study were retrieved and downloaded
- 2006 data is currently being QA/QCd
- Final report will be generated in 2007

Albeni Falls/Pend Oreille River Update

- **Water Quality Study**

- Goals and Objectives

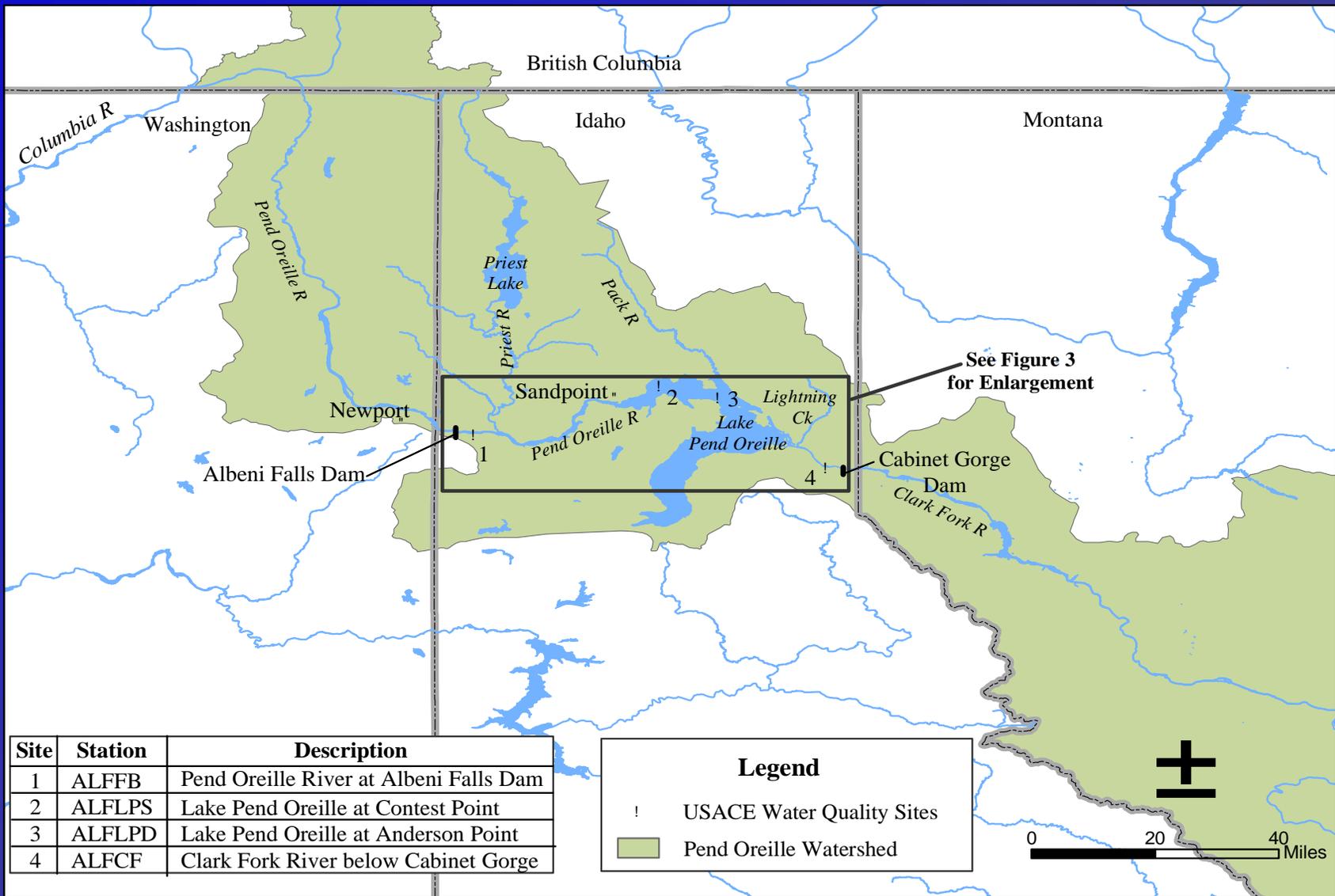
- Establish current conditions
 - Understand relationship between Albeni Falls Dam and water quality in Pend Oreille River system

- Sampling Design

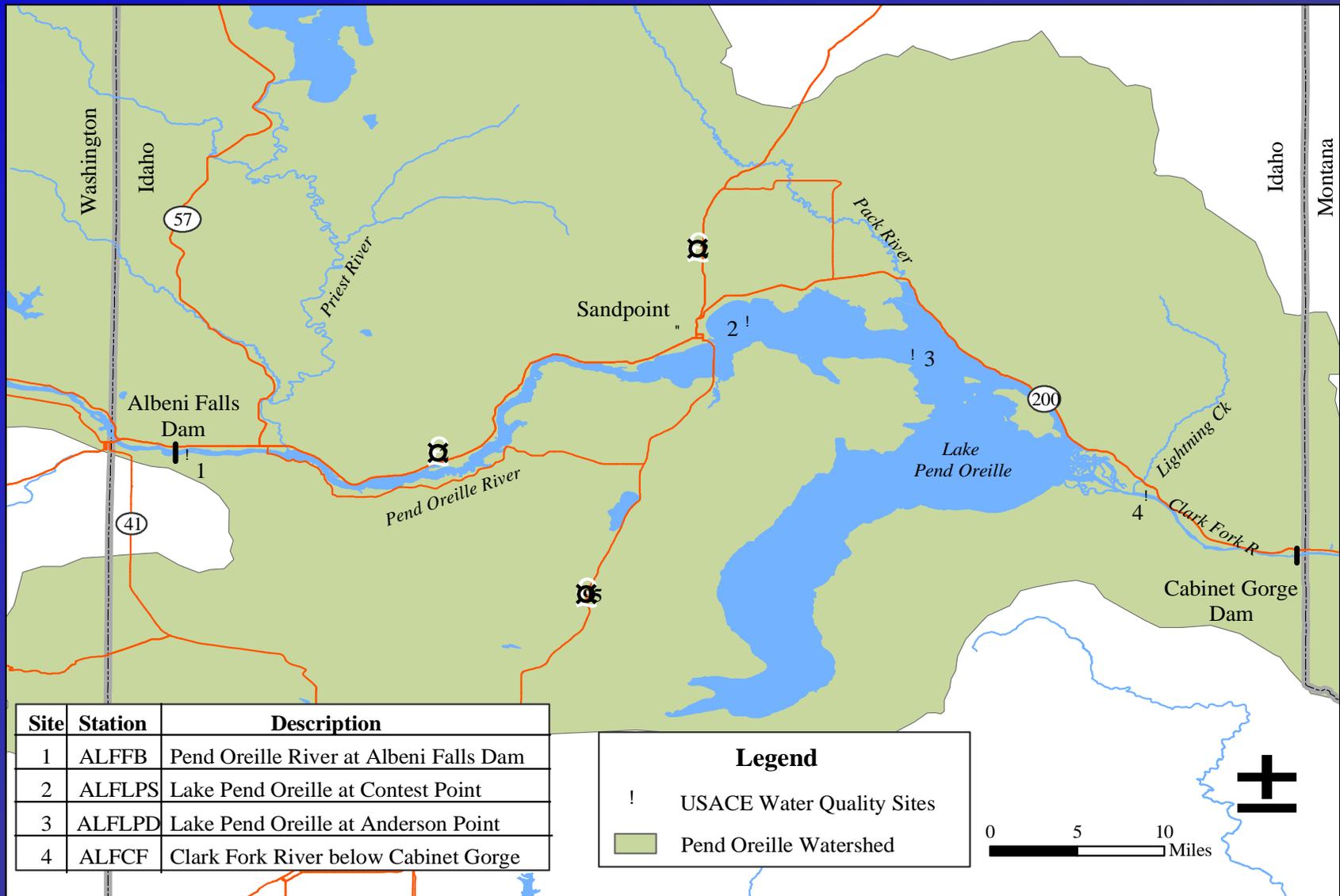
- February to November 2005/2006
 - March to October 2007
 - Two in-lake stations and two in-river stations
 - In-lake stations represent deep water and shallow water pelagic sites

- Parameters

- Nutrients
 - Anions/Cations
 - Metals
 - Phytoplankton/Chlorophyll a
 - Zooplankton



Location of study area in the Clark-Fork/Pend Oreille watershed.



Location of study area near Albeni Falls Dam.