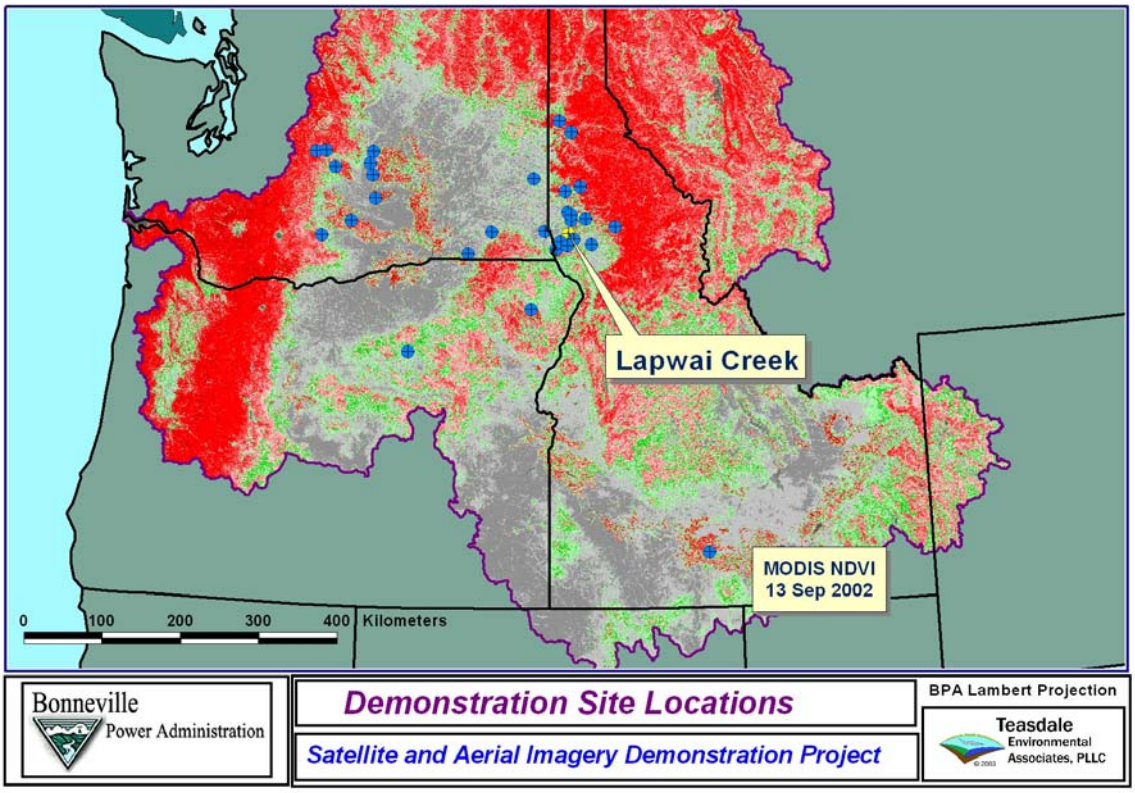
Lapwai Creek Demonstration Site	
Location	**Nez Perce and Lewis Counties, ID Nez Perce Reservation**
Water body	**Lapwai Creek**
Ecological Provenance	**Mountain Snake**
Subbasin Name	**Clearwater**
BPA Hydrologic Unit Code ID	**3855**
Hydrologic Unit Code, 6th Level	**170603062901**
Watershed Name	**Clearwater, ID**



Unique Characteristics

Lapwai Creek watershed is 608 km^2 (235 mi^2) in the lower Clearwater River basin near Lapwai, ID on the Nez Perce Indian Reservation. Lapwai Creek is a highly mobile alluvial stream that flows trough steep canyon lands from the Camas Prairie to the agricultural valley near the City of Lapwai. Many sections of the natural stream are channelized. Mean annual flow is about 80 cfs. Flows are very low during late summer (1-2 cfs). Lower Lapwai Creek has a cobble and gravel bed and is most nearly a Rosgen Type C3 channel. The riparian zone and flood plain is well developed in

some locations and absent at others. Agricultural use occupy the riparian zone along the lower reaches the stream.

Satellite imagery for this site includes Landsat 5, Landsat 7, ASTER, MTI, and IKONOS. Digital color and color infrared aerial imagery was acquired on several flights in 2001 and 2002. Ancillary data includes topographic DRG's, DOQ's, watershed boundaries and national land cover data.

Objective

The primary objective was to acquire seasonal very high-resolution digital color and color infrared imagery of the Lapwai Creek riparian zone and floodplain. Secondary objectives were to characterize land cover and develop an initial hydrologic model for the watershed.

Results

The several datasets of very high-resolution digital aerial imagery show the seasonal changes of the riparian zone vegetation. Lapwai Creek is relatively narrow and seasonally dry in some reaches. Morphology of the stream was difficult to classify from the aerial imagery in some locations. Irrigated fields were observe in the aerial and satellite imagery. The imagery and supporting data reveal the characteristics of riparian vegetation and stream channel, status of riparian plantings, stream improvement structures, proximity of development. An initial hydrologic model and pollutant export model were developed from the GIS datasets and satellite imagery. Process of development of these models are detailed in a tutorial.