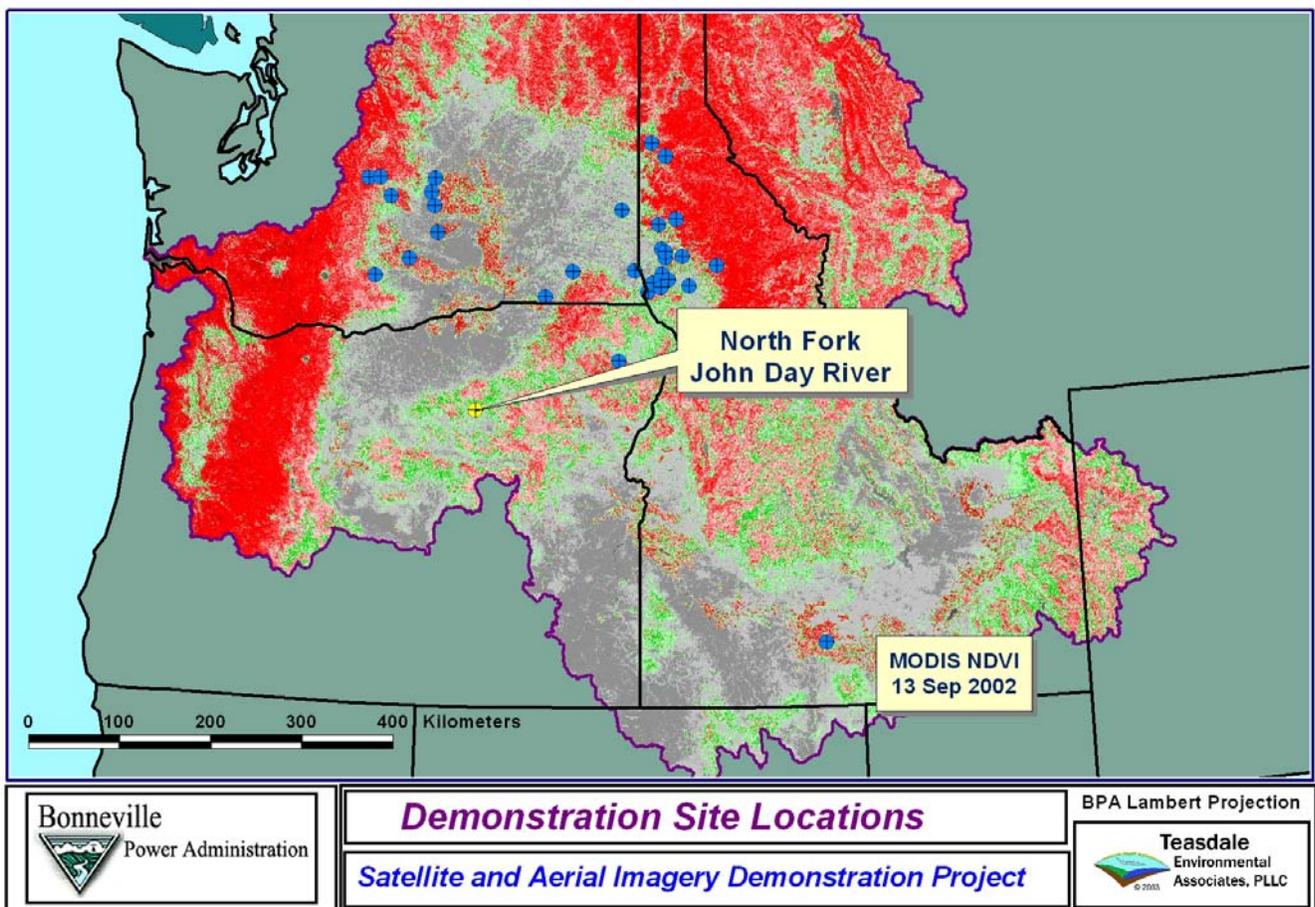


North Fork John Day	
Location	Grant County, OR
Water body	North Fork John Day River
Ecological Provenance	Columbia Plateau
Subbasin Name	John Day
BPA Hydrologic Unit Code ID	5931
Hydrologic Unit Code, 6 th Level	17070202021
Watershed Name	North Fork John Day, OR



Unique Characteristics

The North Fork of the John Day at the imagery demonstration site is a Rosgen Type E3 channel with low gradient confined within the steep mostly non-forest canyon lands of north central Oregon. The aerial imagery indicates that bed materials are a mix of cobble, gravel and sand. The entrenched and structurally controlled channel has a high width to depth ratio and numerous pools, riffles and glides. The contributing

watershed is 322 km² at the imaged reach. Ranching and recreation are the dominant land uses with some minor irrigation withdrawal.

Satellite imagery for this site includes Landsat 5 and Landsat 7. ASTER imagery was not yet available for the site. Digital color aerial imagery of the reach near Weippe was acquired on August 8, 2002. The aerial imagery was flown at two altitudes. Ancillary data includes topographic DRG's, DOQ's, watershed boundaries, and national land cover data.

Objective

The primary objective was to determine the extent of riparian shading along the North Fork of the John Day for stream temperature modeling by examination of very high-resolution digital aerial imagery. A secondary objective was to classify stream morphology and channel macrostructure from the imagery and judge whether riparian characteristics could be determined from Landsat imagery.

Results

The high altitude digital aerial flight provided complete stereoscopic coverage of the stream corridor. Stereo imagery is very helpful in determining the height class of riparian vegetation and shade potential. The higher-resolution low flight reveals details of the stream channel. Water was low and clear during the flight so most of the below surface channel is visible in the color aerial imagery. Riparian vegetation was sparse and shade potential low in the imaged reach.

The 15-meter resolution Landsat 7 panchromatic image (band 8) clearly showed the alignment of the river, but few in stream details. Some indications of riparian vegetation were visible in the Landsat visible and near infrared images, but the resolution was insufficient to judge shade potential for reach scale temperature modeling. It is likely possible to conclude from the Landsat imagery that shade providing riparian vegetation is generally sparse and would have minimal affect on subwatershed scale stream temperatures predictions.