Photomonitoring Jim Ford Creek – Weippe Prairie

Network parks where resource is being monitored

- Nez Perce National Historical Park (Weippe Prairie)

Importance: Status and Trend of a Degraded Stream

Nez Perce National Historical Park acquired Weippe Prairie and a 2 km stretch of Jim Ford Cr. in 2003. Past agricultural land use of Weippe Prairie involved site drainage and re-channelization of the creek, resulting in an incised channel and a reduced native riparian plant community. UCBN and NEPE staff initiated a photomonitoring program at permanent sites along Jim Ford Creek in support of the UCBN's integrated riparian monitoring program (Figure 1). In 2007, Oregon Museum of Science and Industry (OMSI) high school citizen science students assisted in the establishment of photopoints. In 2009, photopoints were rephotographed, providing the first opportunity for change detection (Figure 2).

Preliminary Results

Twelve permanent photopoints were strategically located along Jim Ford Cr. and old drainage canals. Precise measurements of the distance between the camera and photopoints, camera focal length, and camera height above ground were made in order to ensure exact replication of photo geometry each year. This careful approach will allow quantitative as well as qualitative interpretation of the changes that occur over time. To date, observed changes have primarily been in the continued erosion of stream and canal banks. For example, a canal headcut in photopoint 11a appears to be progressing upstream (Figure 2), although advanced vegetation growth obscures the 2007 headcut. Relocation and rephotography of sites has been challenging and instructive in terms of the level of precision needed in site measurements and leveling of equipment. A 3rd set of photographs will be collected in 2011.

Monitoring Objectives

- To track qualitative and quantitative changes in vegetation cover and composition and stream channel morphology along Jim Ford Creek.
- To evaluate the utility of photomonitoring for detecting vegetation and stream morphology change in NPS riparian monitoring programs.

Management Applications

- Provide information on the rate and extent of vegetation and channel bank morphology change along Jim Ford Creek, and support Weippe Prairie site management planning and assessment of any eventual restoration efforts.

Contact Information

Tom Rodhouse, Tom_Rodhouse@nps.gov

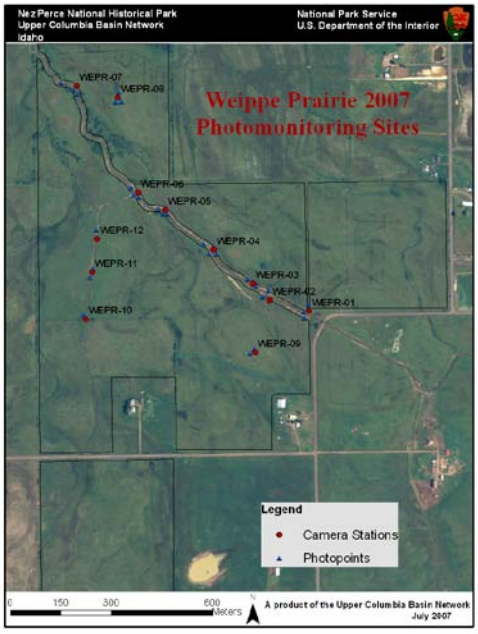

Figure 1. Weippe Prairie photomonitoring locations.

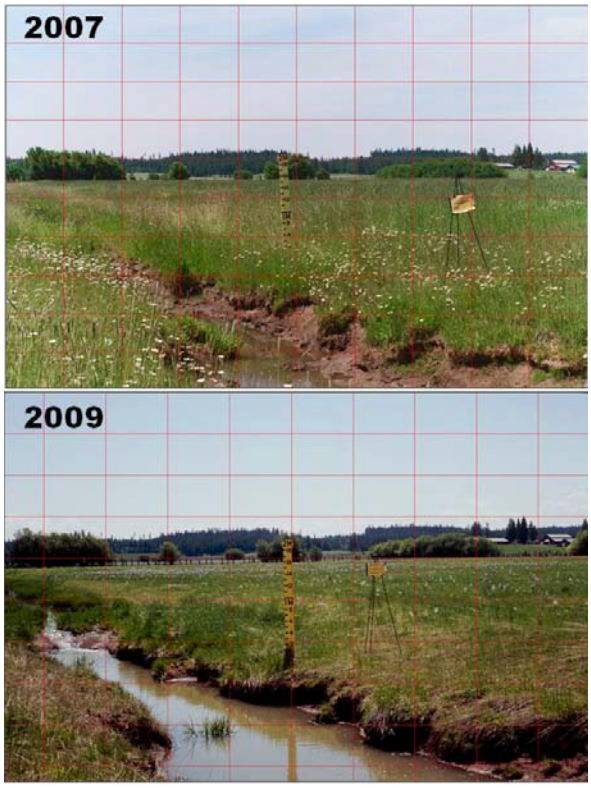

Figure 2. Repeat photographs are analyzed for change using a point-intercept approach similar to that used by botanists sampling horizontally in plot frames or "quadrats". Note the developing headcut in the ditch in 2009. The meter board provides a vertical reference point from which measurement s of plant and streambank height can be made.