



➤ Is the meadow surface flooding at the 1.5 year reoccurrence interval frequency?

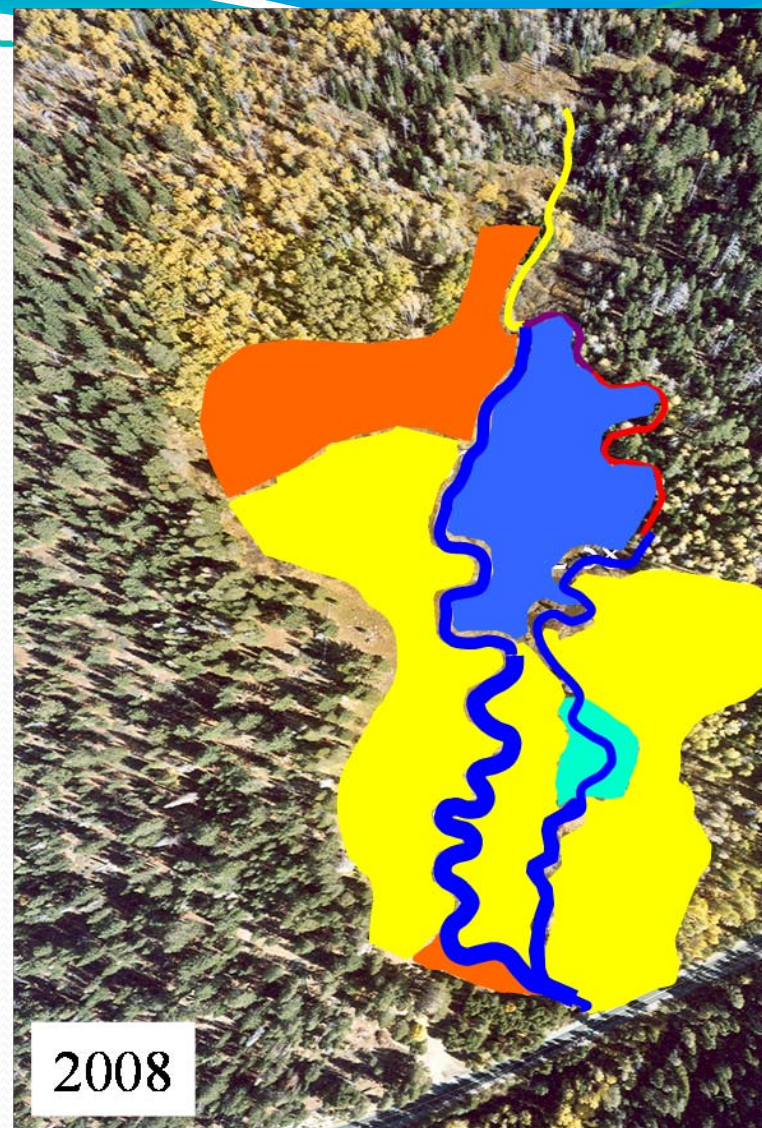
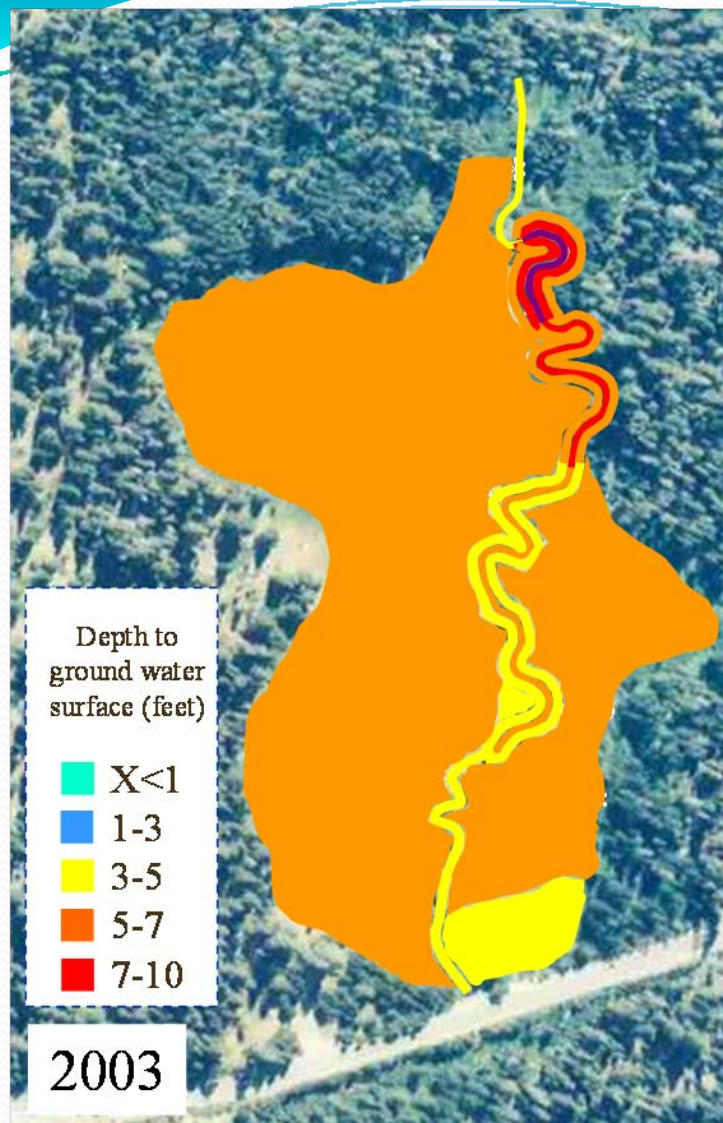
Indicator: Flow level (stage) measured with a pressure transducer , and Visual observations.

Result: Approximately 10% of channel went overbank for 6 days in 2008, approximately 50% of the meadow during a 21 day period following rain on snow events in May of 2009. Over bank flooding during the spring of 2009 was observed to have resulted in the deposition of fine sediments and organic detritus throughout the floodplain.

➤ Is the ground water level in the central meadow sufficiently shallow to support the colonization and maintenance of desired meadow species?

Indicator: GW levels, measured at twelve groundwater monitoring wells.

Result: Increased wetted area with available water for plants during the late summer is estimated to have increased 10% in 2007 and 60% in 2008.



Late Summer ground water levels in Cookhouse Meadow



May 5, 2009



May 18, 2008



May 18, 2008



➤ Are dry meadow grass species and conifers in the central meadow being out competed and replaced with desired meadow species indicative of wetter hydrologic conditions?

Indicator: Weixelman plot transects, measures overall status and trend of vegetation. Photopoints.

Result: Weixelman data collected, not yet analyzed. To be completed in 2010.

➤ What is the response of planted vegetation in the project such as sod along the new channel, willow stakes and willow mats?

Indicator: modified Greenline method, measures percent cover of live sod, and percent of live willow stakes and mats.

Result: In spring 2007, 85% sod cover, 100% sprouting willow stakes, 91% willow mats (in 2006).





Future Monitoring :

Long term effectiveness monitoring elements:

Wildlife Response: Pre and post project monitoring of wildlife response related to this project has been conducted through a contractor from 2004 through 2008. Still need to perform in house evaluation /synthesis of results and findings.

Vegetation Response: Still need to complete Weixelman Vegetation Analysis. Will repeat data collection in 2013.

Geomorphology: Repeat channel morphology /photopoint measurements in 2013.

Visual Observations and Photopoints: Visit site every year, particularly after major flow events.



Insert Blackwood Construction Photos

Blackwood Creek Project Implementation

*Geomorphic form restoration—Providing
the foundation to restore riparian
vegetation structure,
habitats, and aquatic life*

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Phase I

Likely fish migration impairment (LWQCB, 2007)



Post Construction - 09-2003



Phase I



06-05-07



Fish ladder site - post 12/31 flood

1-13-06

Phase II



Dashed line is channel bed elevation upstream

Likely fish migration impairment (LWO)



Sept 2006

Pre Construction - Aug 2006