

Geography At Sonoma State University

Characterizing Sediment Transportation Through Copeland Creek's Alluvial Fan

Chase Takajo ~ Senior Thesis Project

Motivation

- The Sonoma County Water Agency inherited management of the stream following channelization by the Army Corp of Engineers
- Sedimentation in the channel is a problem because it decreases the ability of the stream to move high flows through Rohnert Park and could contribute to flooding both the campus and communities neighboring the stream
 - Sediment deposited in the Laguna de Santa Rosa degrades an important wetland, and
 - Decreases flood water storage – increasing flooding on the lower Russian River



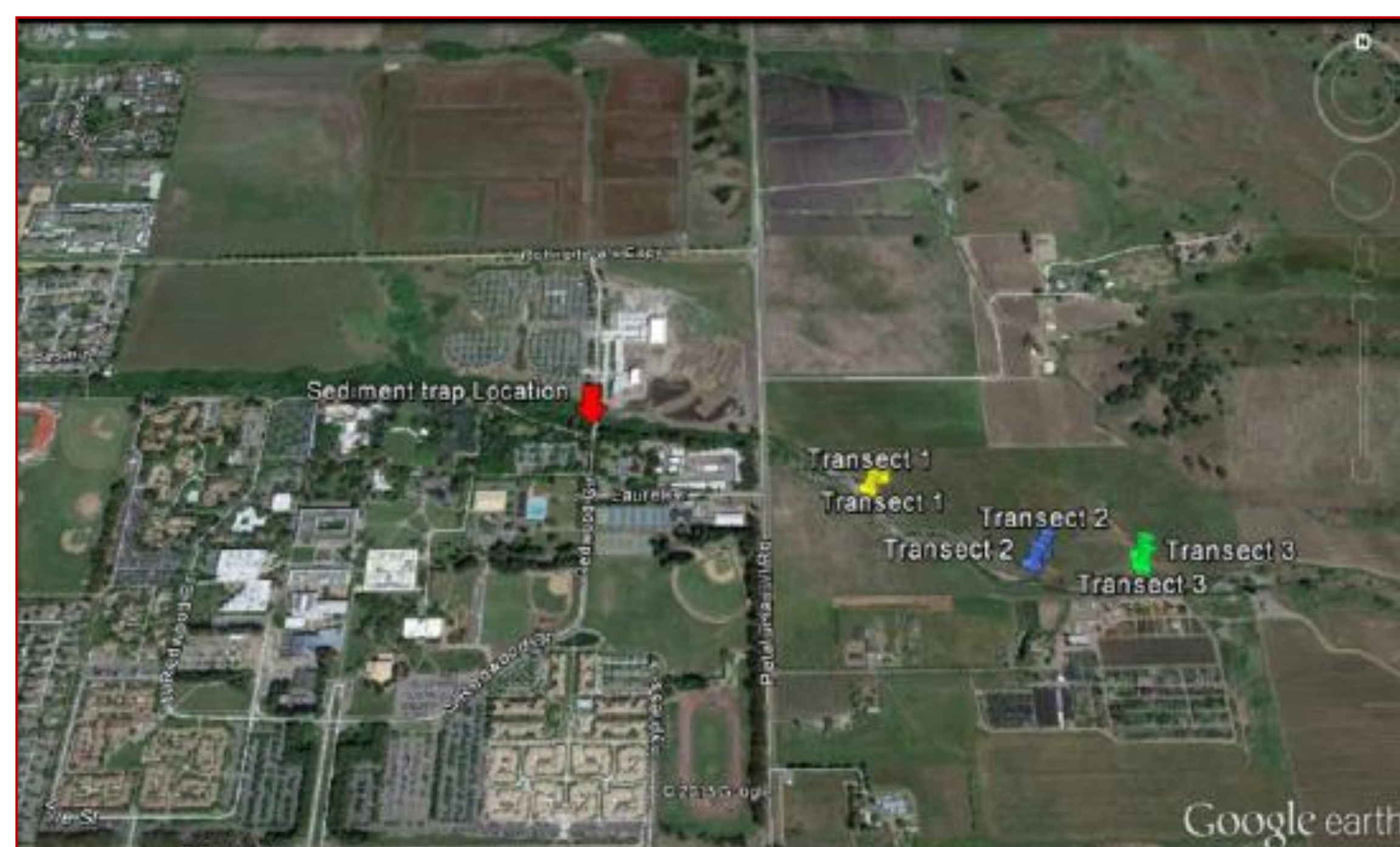
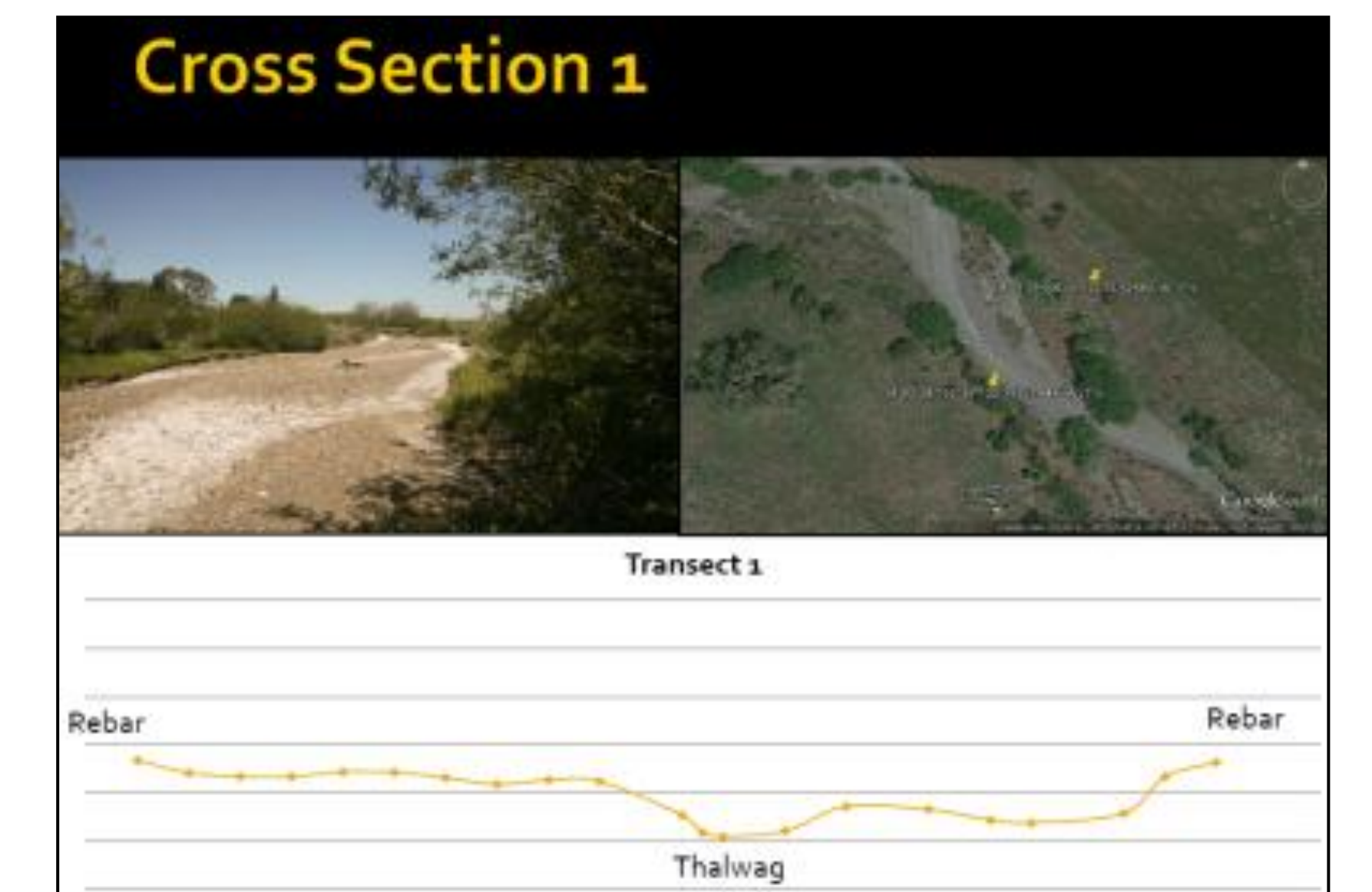
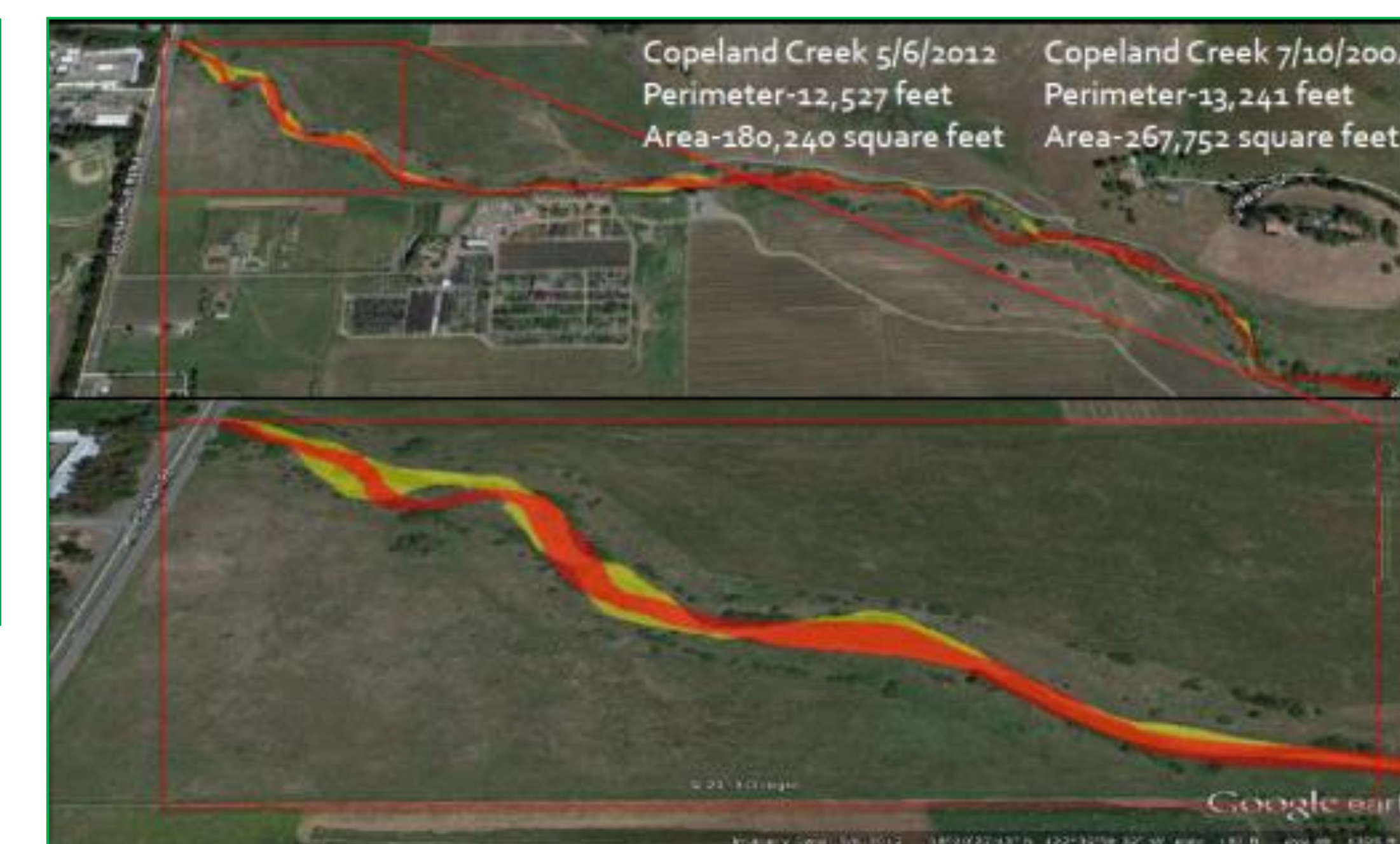
Sonoma State University Copeland Creek Master Plan

GOAL 5:
Maintain hydraulic function of Copeland Creek for flood control protection of the University in a manner that combines flood control requirements with ecological restoration and water quality improvement.

Goals

- 1) The Past: Has the stream channel a sink for or source of sediment?
- 2) The Future: Establish cross-sectional surveys to study deposition and erosion
- 3) Establish sediment traps to allow quantification of sediment flow

Goal 1: Resurvey of stream channel width in 2004 and 2012 finds a 33% reduction indicating significant in-channel sediment deposition



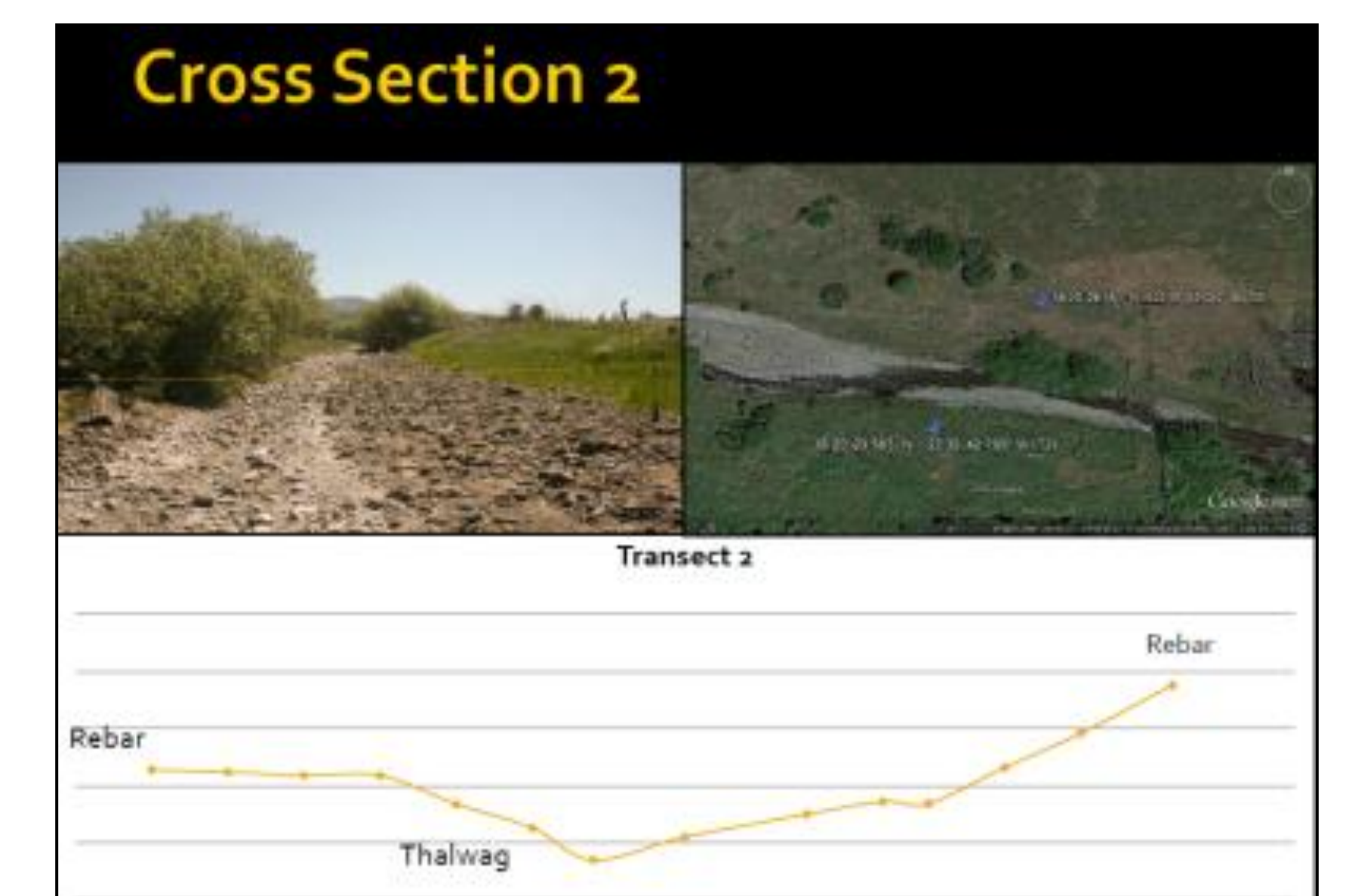
Goal 3: A site has been selected for the installation of a bed load trap and a suspended load trap. Monitoring of these traps during high flow events will allow the quantification of sediment transported through the stream reach through campus

SSU, county team up to study Copeland Creek

By JEREMY HAY
 Thursday, April 25, 2013



Goal 2: Three stream channel cross sectional surveys are monumented. This will allow on-going monitoring of stream channel deposition and erosion. This will help the water agency better understand sediment flows and inputs



Site map: The three cross-sectional surveys are located on Copeland Creek's alluvial fan. The sediment traps will be installed in the channelized portion of the creek near the bridges leading to the Green Music Center.

