



Truckee River Watershed Council

Collaborative solutions to protect, enhance and restore the Truckee River Watershed

Middle Martis Creek Wetlands Restoration Project

Calistoga Project Update - Feb. 8th, 2017

Middle Martis Creek Restoration Project

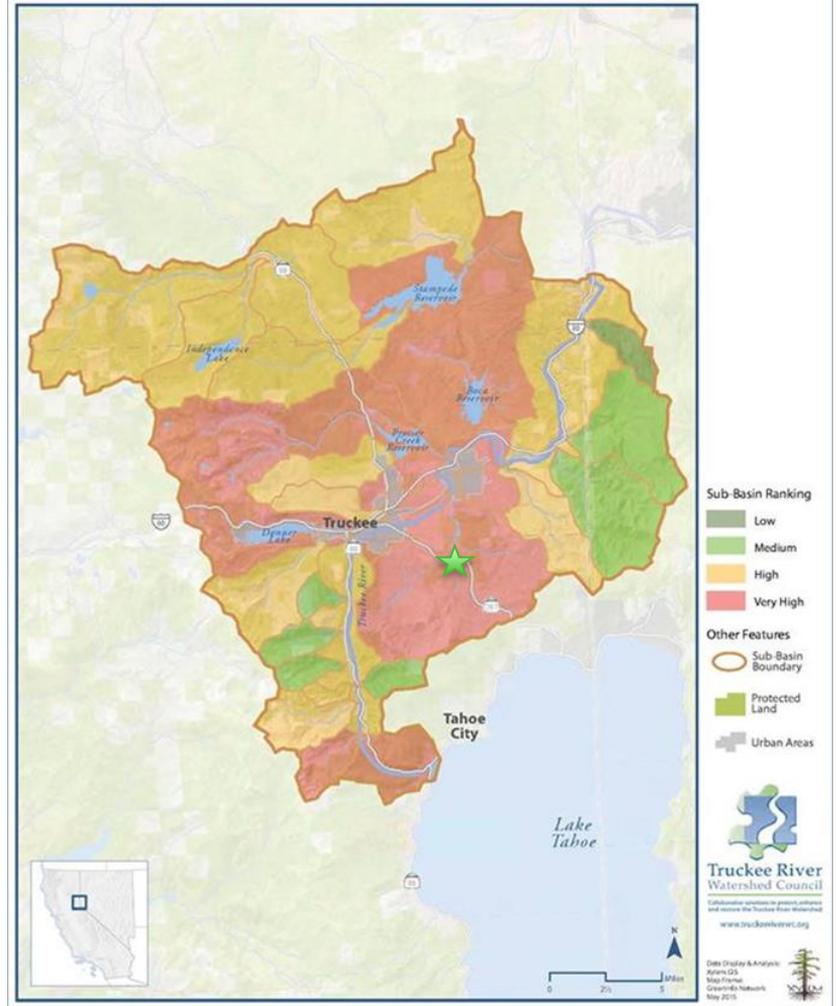
- Project location
- Pre-restoration condition
- Project partners
- GHG Research
- Restoration
- Next steps



Middle Martis Project Vicinity



The Middle Truckee River Watershed Priorities



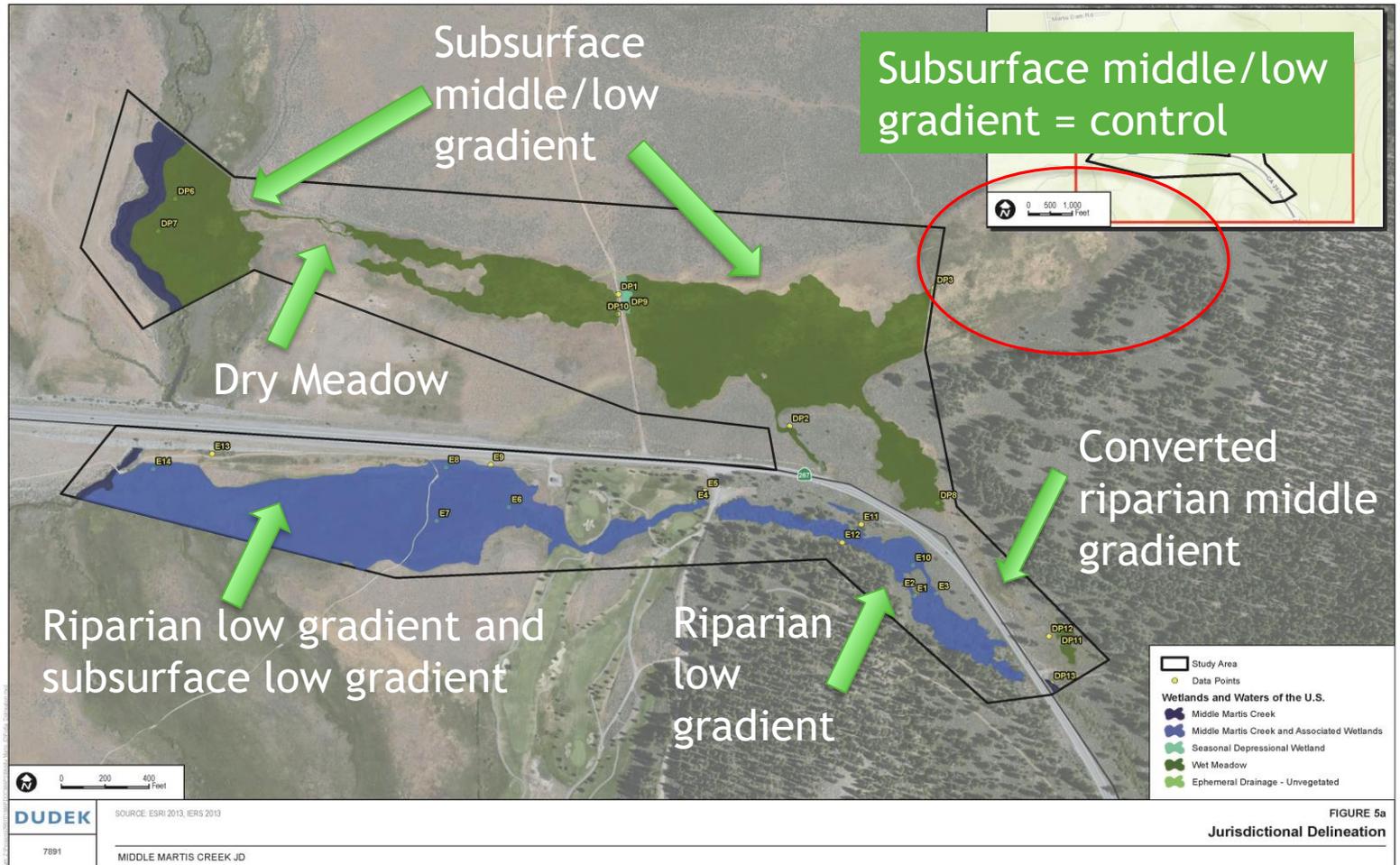
Middle Martis Creek Project Area



GHG Ref Meadow

Project Area

Meadow Types



Problems addressed

- Channel undersized for moderate flows
- Incision, erosion, and headcutting in Middle Martis Creek
- Meadow impacts
- Highway 267 flooding
- Access road and trail impacts



B. Hastings



Project Partners

Partners

- Caltrans
- Northstar California
- Northstar Community Services District
- Truckee Donner Land Trust
- Truckee Tahoe Airport District
- U.S. Army Corps of Engineers

Implementation & Monitoring Team

- Habitat Restoration Sciences
- Dyer Excavation
- Balance Hydrologics
- Dudek
- Auerbach Engineering
- Holdrege and Kull
- Susan Lindstrom, Consulting Archaeologist
- Stillwater Sciences
- Plumas Corp
- Tahoe Institute for Natural Science
- CS Ecological Surveys and Assessment



TRWC's role

- Each landowner addressing separately
- Problem too large for single entity
- TRWC identified root cause
- Brought landowners together



Solution

- Restore peak flows to north side of highway
- Split flows at existing culvert
- Maintain base flow on south side of Highway



Project Benefits

- Restore 40 acres wetland
- Improve 1 mile stream habitat & 2 acres riparian habitat
- Reduce GHG emissions
- Improve water quality
- Enhance fish and wildlife habitat
- Reduce infrastructure impacts



Restored alluvial fan channel



GHG Monitoring to Date

- Pre-project soil carbon 2015-2016
- Pre-project Nitrogen flux 2015 - 2016
- Post-project Nitrogen 2016-2018
 - “gap year” added for immediate post-restoration

Good news:

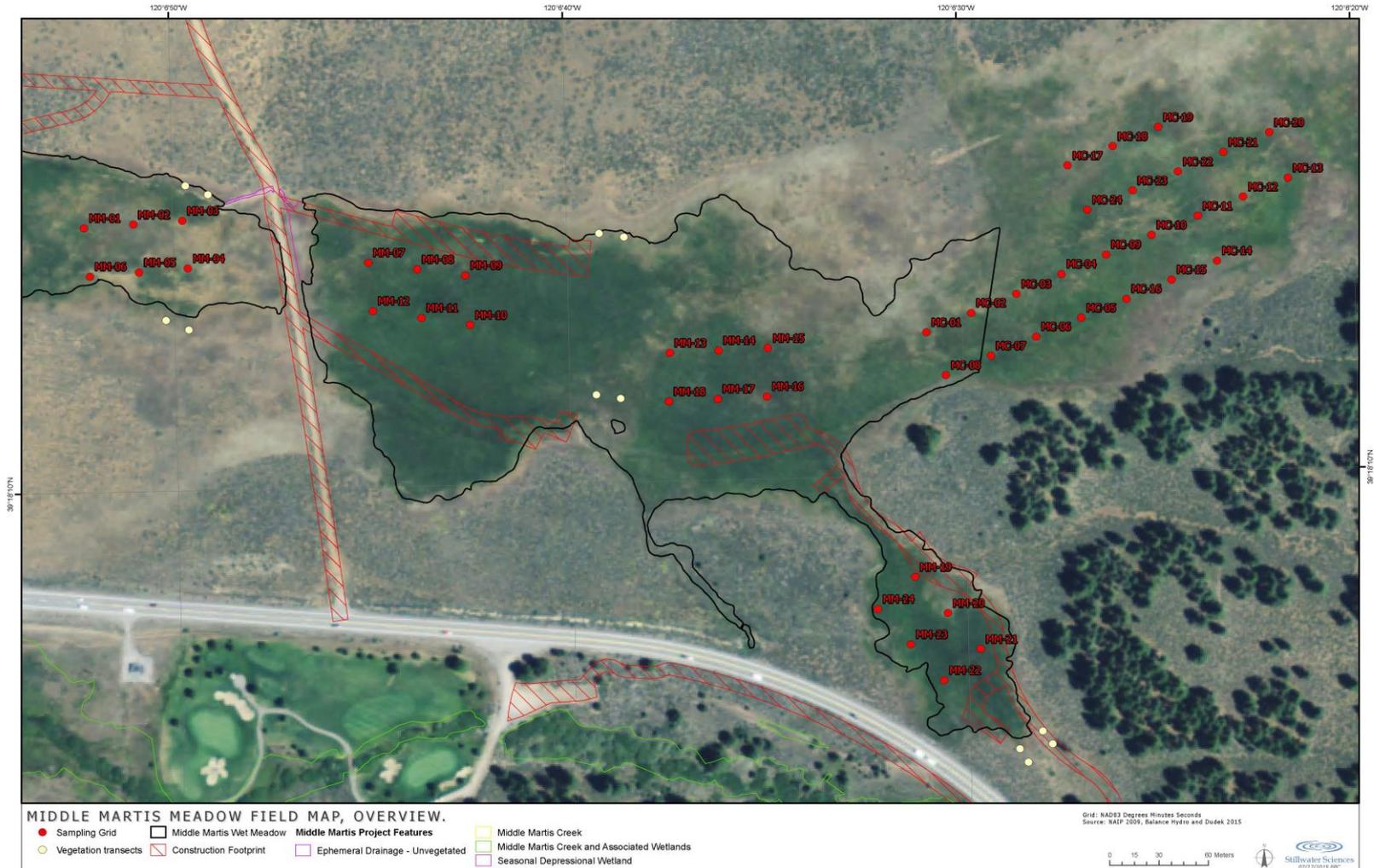
- Year-round access - monthly gas measurements

Bad news:

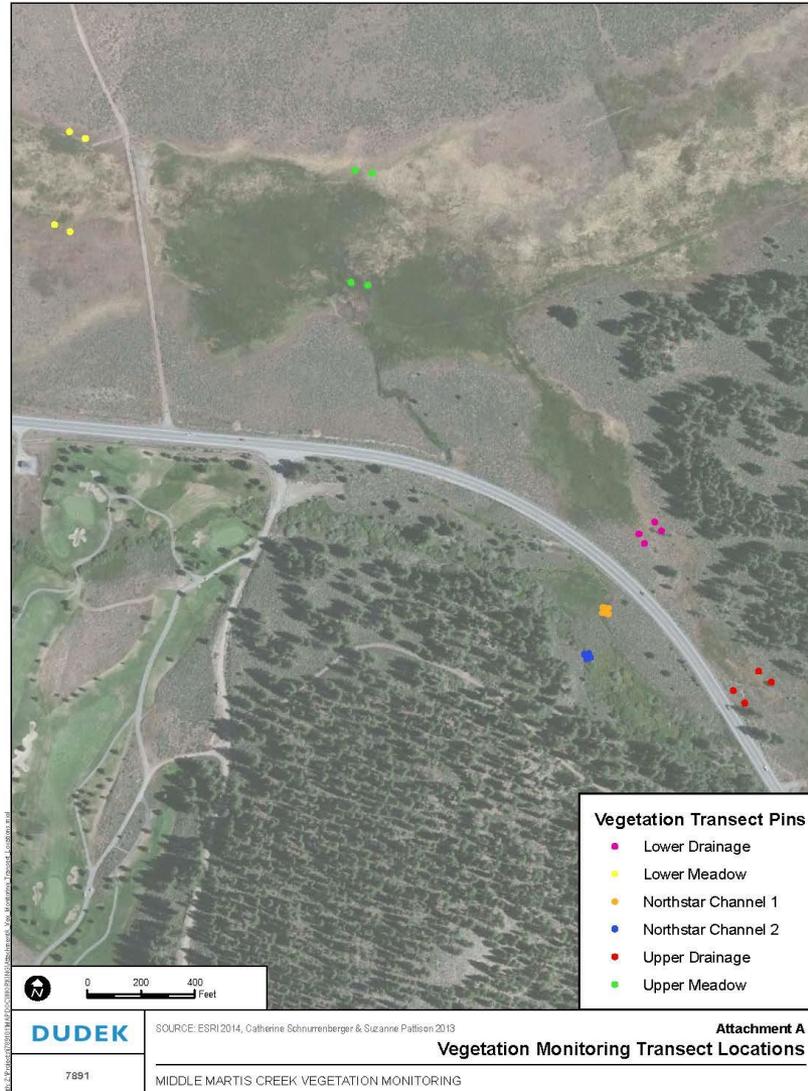
- Rocky soil - soil samples incomplete



Soil carbon and GHG plots



Pre-project data - vegetation plots



Pre-project data - Hydrologic stations

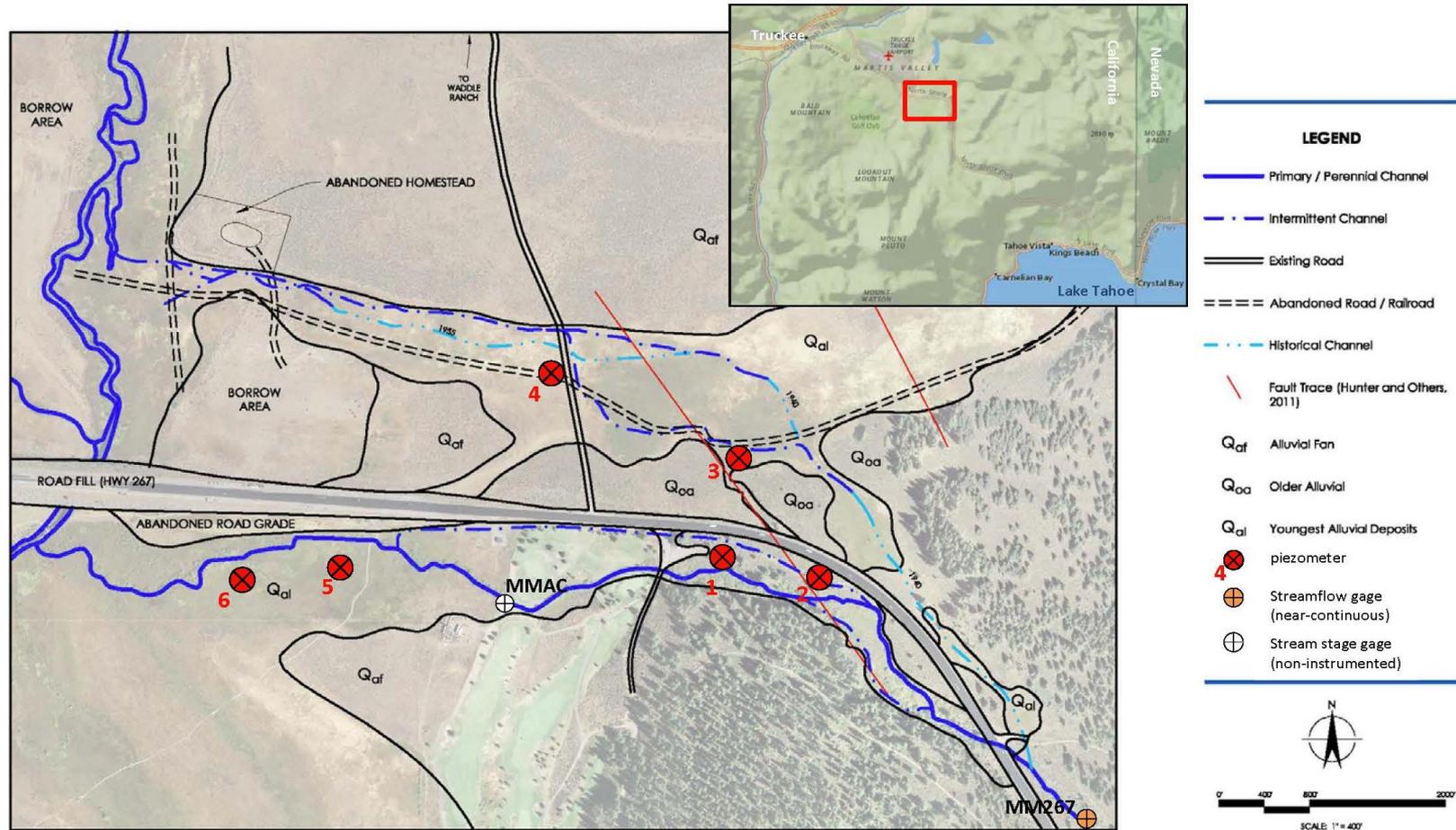
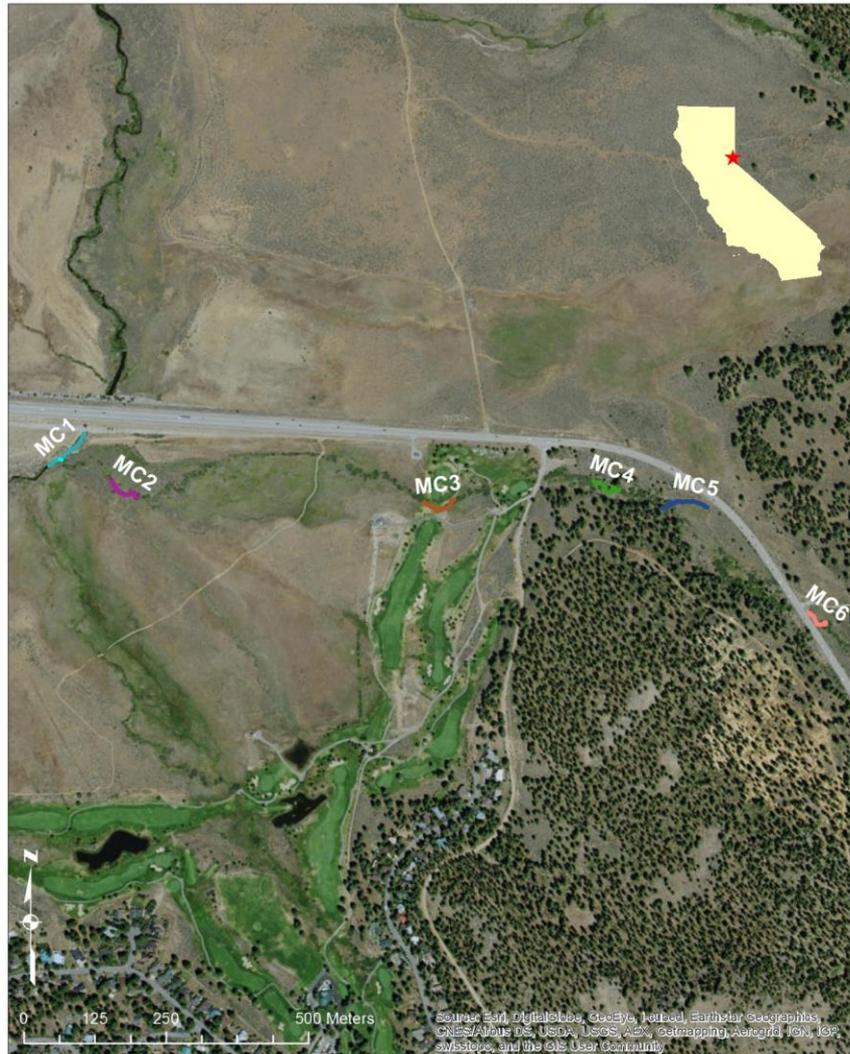


Figure 1. Middle Martis Creek Wetland Restoration Surface and Groundwater Monitoring Locations, Placer County, California.

Pre-project data - Aquatic habitat



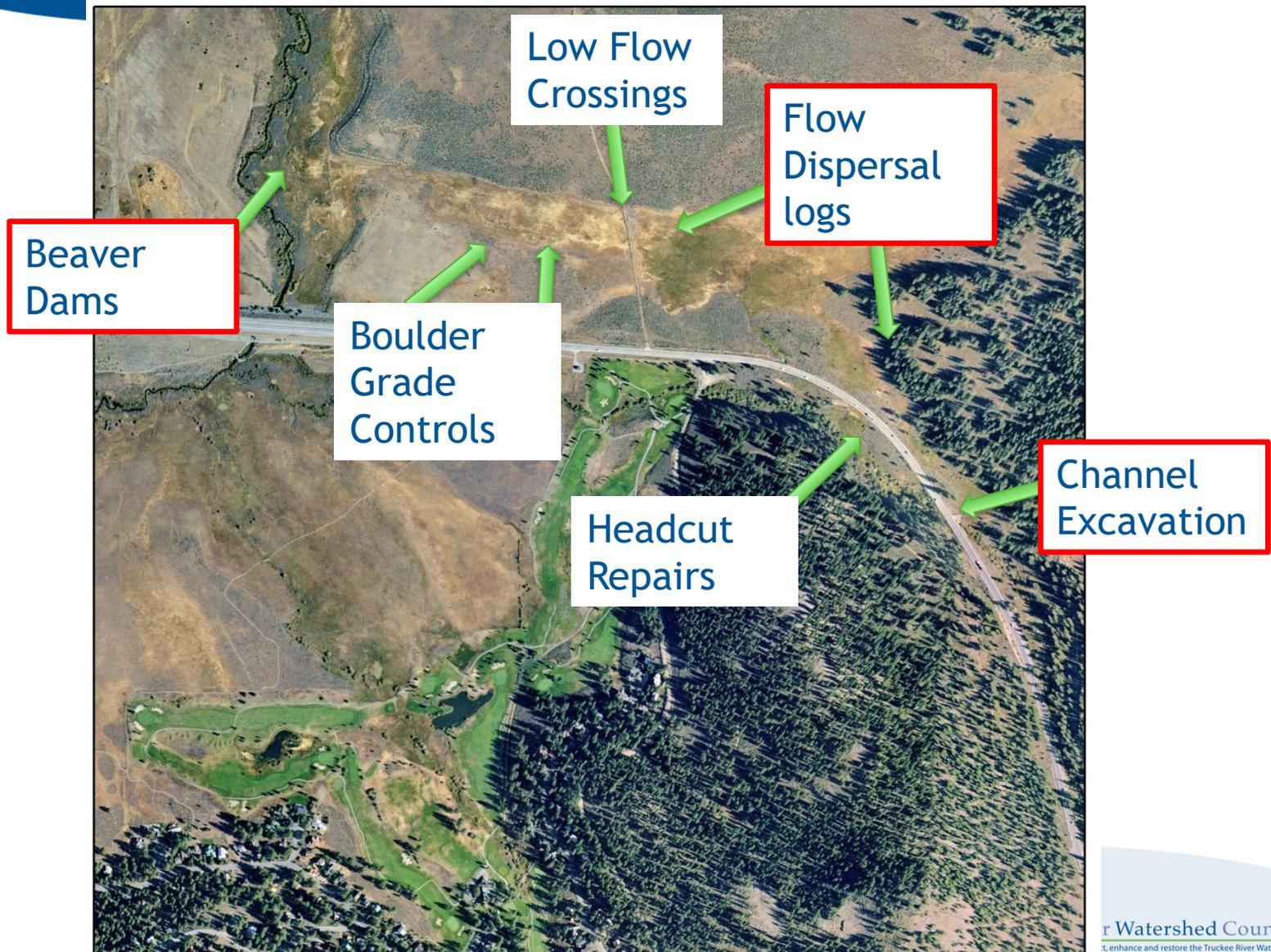
Locator Map
Martis Creek Meadow Surveys
Truckee River Watershed
Placer County, California

Pre-project data - avian point count stations



Figure 1. Overview map depicting locations of clusters of sampling stations, 2013, 2015. North is indicated by the orange arrow. Blue points are point count stations along the East Fork of Martis Creek. Orange and white points are along the Middle Fork of Martis Creek, with orange points being upstream of proposed restoration, and white points below. Coordinates are provided in Table 1.

Middle Martis Creek 2016 Construction





Little bit of flow...



Little more flow....



A LOT of flow!



Middle Martis Creek Project Area















CA

A192738
2014



Middle Martis Creek Project Area



Beaver
Dams





R. Sresovich







Thank you Funders!

- Donors to the Truckee River Watershed Council
- Project Partners
- California Department of Fish and Wildlife
- Lahontan Regional Water Quality Control Board
- The Martis Fund
- National Fish and Wildlife Foundation
- Tahoe Truckee Community Foundation



Questions?





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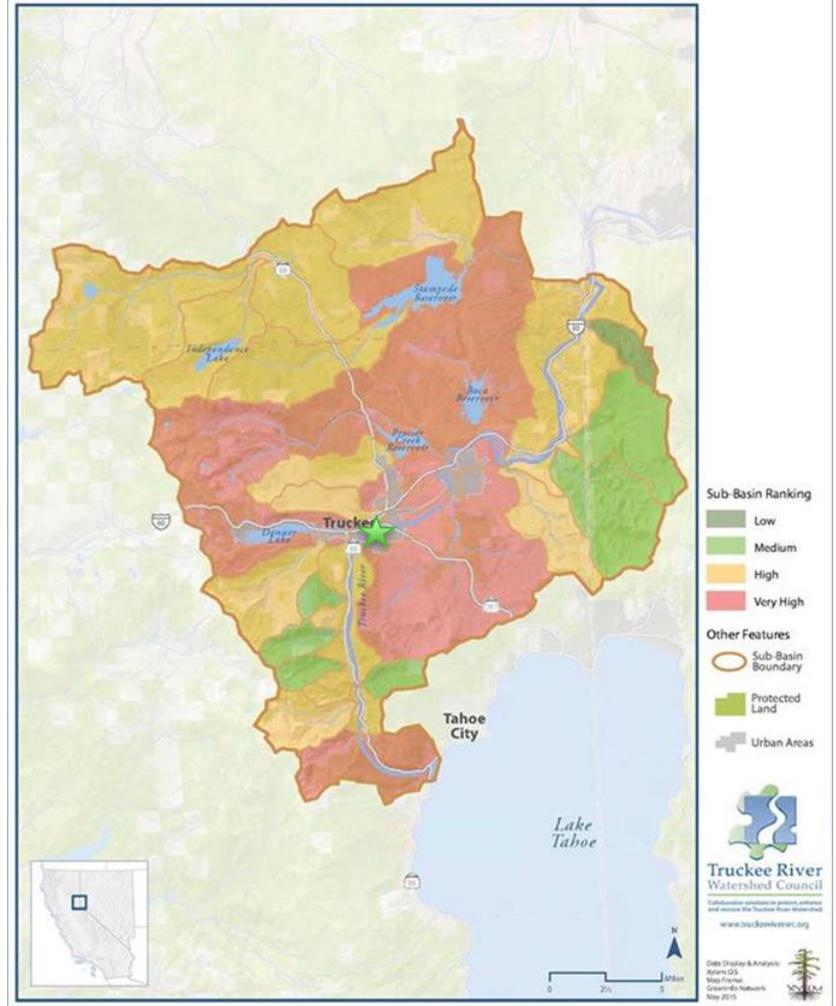
Truckee Meadows Restoration Project

Calistoga Project Update - Feb. 8th, 2017

Truckee Meadows Project Vicinity



The Middle Truckee River Watershed Priorities



Truckee Meadows Restoration Project



- Wet Montane Meadow
- Dry Montane Meadow
- Ephemeral Drainage

Truckee Meadows Restoration Partnership

- Town of Truckee
- Truckee Donner Public Utility District
- Truckee Donner Recreation and Park District
- Truckee Sanitation District
- Truckee Tahoe Airport District
- Truckee Donner Land Trust



What is the Problem?

- Fragmented wetland complex
- None of wetlands are fully functioning
 - Disconnected Hydrology
 - Significant storm Runoff
 - Significant Erosion
 - Inappropriate Land Use



Photo Credit: Balance Hydrologics



Project goals and objectives

- Improve and reconnect hydrology of meadow
- Increase high flow attenuation
- Expand meadow and riparian habitat
- Reduce erosion and sedimentation
- Create recreation and education opportunities
- Offset greenhouse gas emissions



Project Area Historical and Now

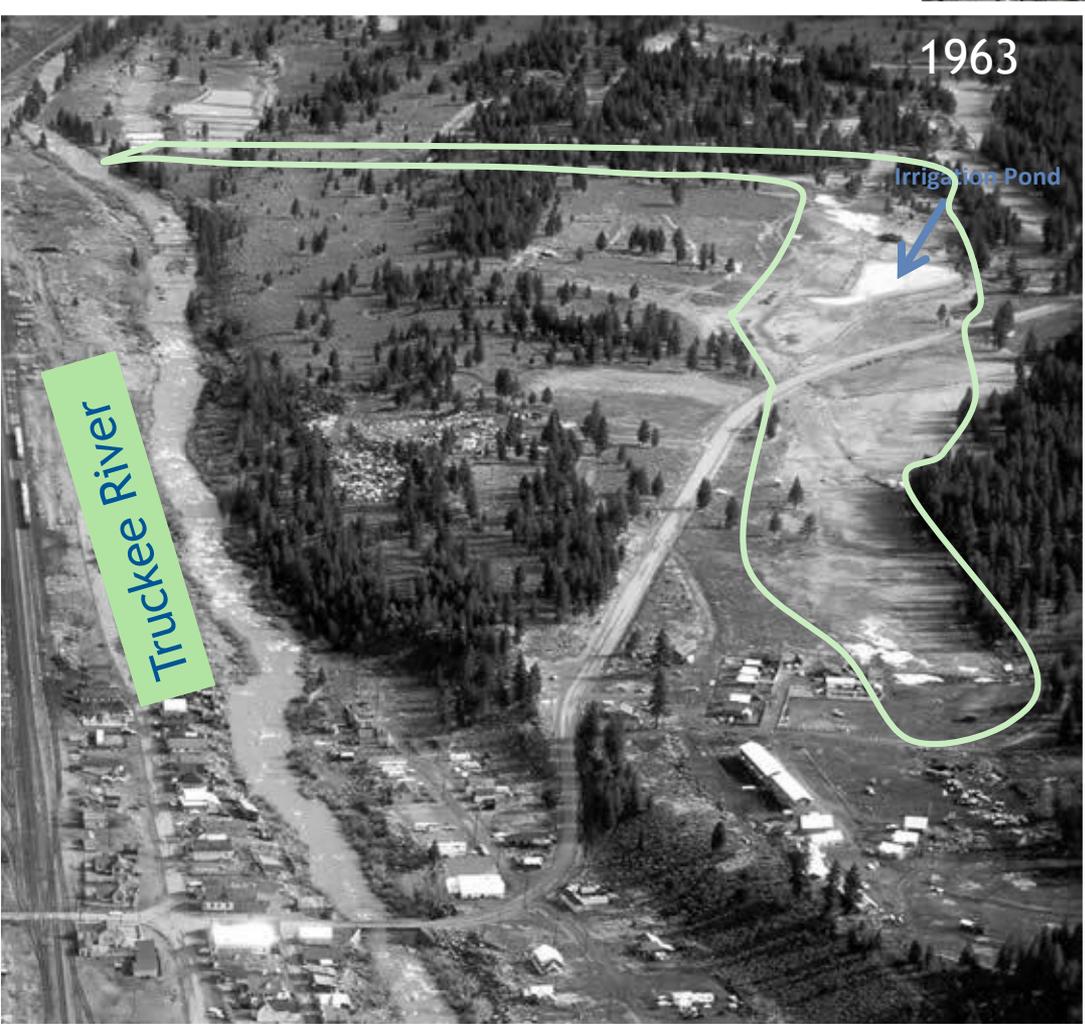
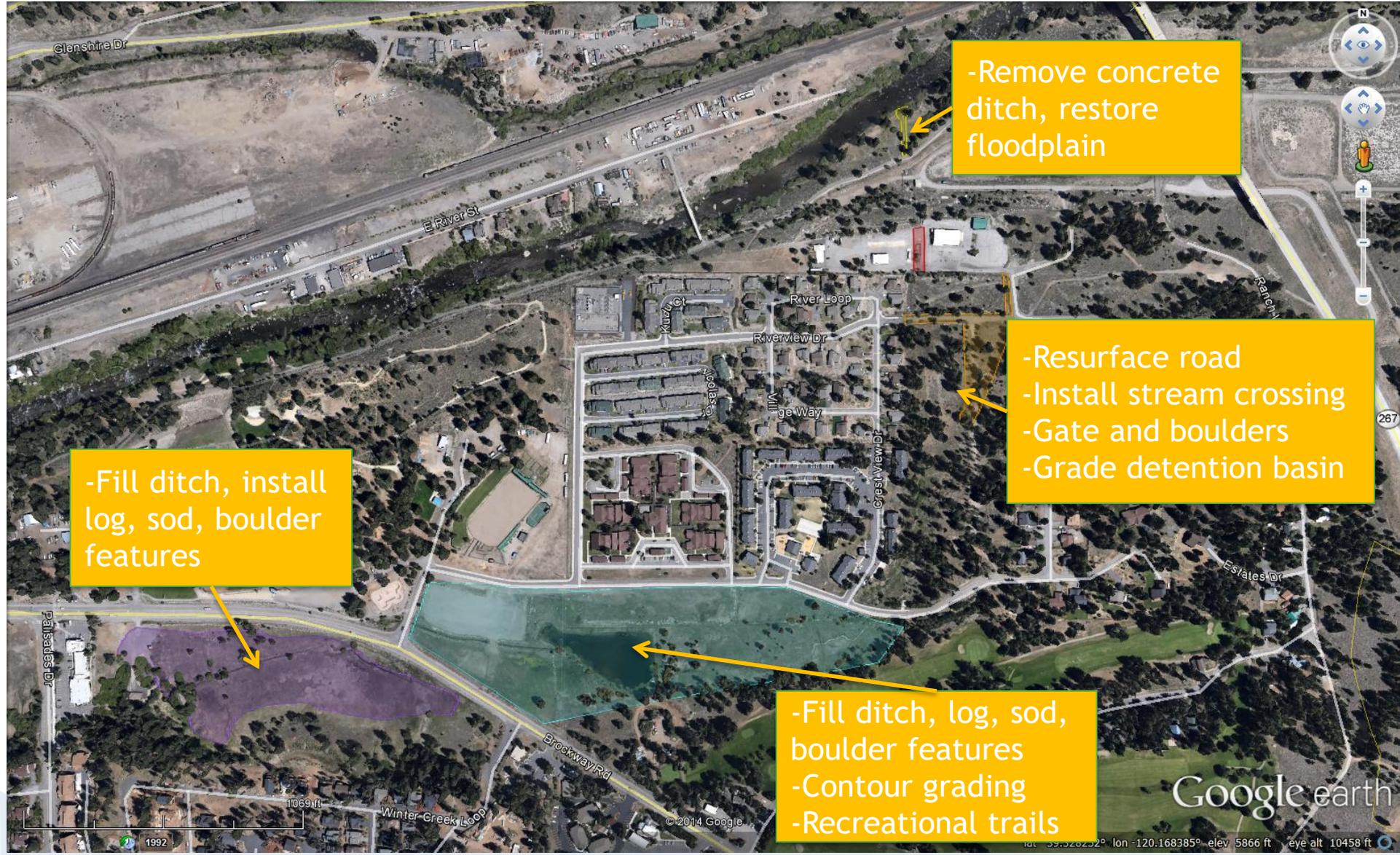


Photo Credit CA Dept of Transportation

Truckee Meadows Restoration Project



-Remove concrete ditch, restore floodplain

-Resurface road
-Install stream crossing
-Gate and boulders
-Grade detention basin

-Fill ditch, install log, sod, boulder features

-Fill ditch, log, sod, boulder features
-Contour grading
-Recreational trails

GHG sampling plots



GHG Sampling plots - control site



Next Steps

- Permitting in process
- Pre-project monitoring through summer 2017
- Implementation fall 2017
- Post-project monitoring 2019



QUESTIONS?



Photo Credit: Balance Hydrologics



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