WHO DO YOU TRUST? Opportunities for Increasing Resiliency in Natural Resource Management (NRM)

CONTEXT
The Butte Creek and Sutter Bypass regions (Figure 1) support the strongest independent population of Central Valley Spring-Run Chinook Salmon (Oncorhynchus tschawytscha) (SRCS), a threatened species in California.

Water in this region is managed to meet agricultural, hydroelectric, urban, and species recovery needs. Providing for this diversity of needs becomes especially difficult during times of water scarcity.

Periods of water scarcity are becoming more frequent and intense as a result of climate change.

To cope with the unpredictable social and environmental impacts of water scarcity, management frameworks must be adaptive and resilient.

RESEARCH QUESTIONS
1. How do threatened and endangered aquatic species recovery projects engage stakeholders concerning water resources?
2. During events of water scarcity, how does stakeholder identity play a role in their ability to influence water resource decisions?

INTERNSHIP & METHODS
Internship with NOAA California Central Valley Office.

Initiated a status update on recovery actions outlined in the 2014 NOAA Recovery Plan for Central Valley Salmonids by reaching out to collaborators.

Research methods:
- Thematic public comment analysis of 2014 NOAA Recovery Plan
- Interviews with federal agency, state agency, agricultural user, and local organization stakeholder types
- Literature review

RESULTS
Research Question One
In the Butte Creek and Sutter Bypass region, the Central Valley Office engages with stakeholders for recovery of SRCS through:

A. Mediating recovery objectives and actions through the 2014 Recovery Plan
B. Evaluating and providing guidance on proposed projects and recovery initiatives
C. Seeking and developing partnerships, namely through the Butte Creek and Sutter Bypass Operations Group

Involved stakeholders may include federal agencies, state agencies, local organizations, agricultural users, recreational users, and private companies.

All stakeholder types express interest in collaboration with NOAA and other stakeholders, but recognize several barriers:

A. Resources of time and money
B. Limitations of the 2014 Recovery Plan (e.g., clarity of responsibilities, outdated information)
C. Development of trust relationships, especially between governmental agencies and local groups

Research Question Two
Local organizations are more likely to express concern related to stakeholder engagement than governmental agencies (Figure 2), as they are more impacted by NRM (Agrawal 2002).

Drought makes NRM more difficult:

"Drought strains trust because everything that could go wrong is exaggerated" - Federal Agency

Trust relationships make deliberation, compromise, and collaboration easier, increasing the resiliency of NRM.

There are four types of trust: procedural, dispositional, rational, and affinitive (Stern and Baird 2015; Coleman and Stern 2017).

In this region, rational and affinitive trust types are identified as opportunities for development.

IMPLICATIONS
Future Management of Butte Creek and Sutter Bypass
SRCS recovery is a common goal among stakeholders, but lack of trust relationships inhibits collaborative success.

Resiliency can be increased through building rational and affinitive trust types, which may be achieved through site visits and face-to-face communication.

Several stakeholders identified floodplain habitat restoration as a starting point for developing relationships.

Natural Resource Management Frameworks
Increasing the adaptive and resilient capacity of NRM frameworks does not have to be time and money intensive.

Identifying opportunities for improving stakeholder collaboration requires analysis of the unique management interests and stakeholder relationships in a region.

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