RECLAMATION
Managing Water in the West

Steelhead Monitoring Plan
2013 Results

Donald E. Portz, Ph.D.

Bureau of Reclamation
Fisheries & Wildlife Resources Group

U.S. Department of the Interior
Bureau of Reclamation

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2013 Monitoring Report

Annual Steelhead Monitoring Report can be found on the San Joaquin River Restoration website

http://restoresjr.net/

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Managing Water in the West

Central Valley Steelhead Monitoring Plan for the San Joaquin River Restoration Area

2013 Monitoring Results for National Marine Fisheries Service Permit 16608

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U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region and
Denver Technical Service Center

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Steelhead Monitoring Plan

- In 2012, Reclamation implemented a steelhead monitoring and detection plan for the SJR upstream of the Merced River confluence that would, in the event of a capture, document and transport fish to suitable habitats downstream from the mouth of the Merced River.

- Central Valley steelhead distinct population segment includes tributaries to the SJR and therefore the presence of steelhead must be monitored.

- Interim flows could attract adult steelhead into the Restoration Area and attracted fish would not have access to appropriate spawning habitat due to a number of impassable barriers.

History

- Steelhead are currently extirpated from all waters upstream of the Merced-San Joaquin river confluence (Eilers *et al*. 2010)

- Believed to have been historically abundant in the SJR and may have spawned at least as far upstream as the natural barrier located at the present-day site of Mammoth Pool and the upper reaches of SJR tributaries.

- Steelhead abundance and distribution in the SJR Basin have substantially decreased and steelhead have been extirpated from the Restoration Area due to the construction of Friant Dam blocking access to historical upstream spawning and rearing habitat (McEwan 2001)

Monitoring

Period:

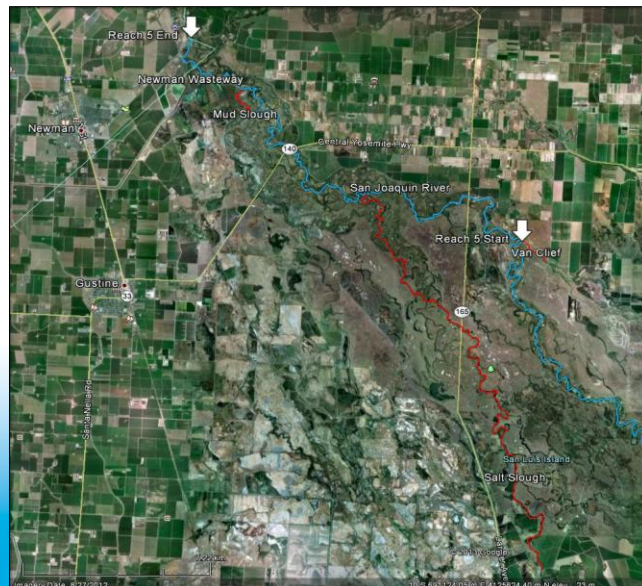- Sampling conducted from January — March 2013

Location:

- SJR-Merced Confluence to approximately 3.5 miles upstream of Hwy 165 Bridge (Reach 5) and adjoining sloughs.

Monitoring Area

Total of approximately 37.4 river miles monitored:

- Approximately 18 SJR miles

- 19.4 miles of slough tributaries

Sampling Methods

Sampling Methods:

- Boat Electrofishing
- Fyke nets with wing walls and fish traps
- Steelhead-specific trammel nets
- Hills Ferry Barrier and Fyke Trap
  (provides barrier during fall flows)

Migrating adult steelhead are difficult to monitor with commonly used salmonid monitoring techniques (*e.g.,* carcass surveys, snorkel surveys, redd counts) due to their unique life-history traits and turbid water conditions in most of the Restoration Area.

Sampling Methods

Boat Electrofishing

Boat Electrofishing Locations

Sampling Methods

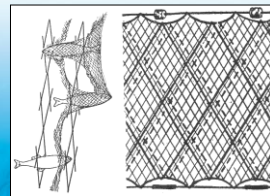**Fyke net traps with wing walls**

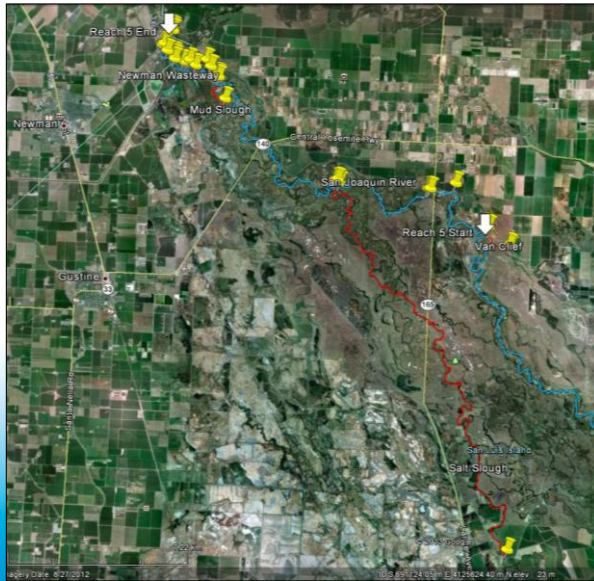## Fyke Netting Locations
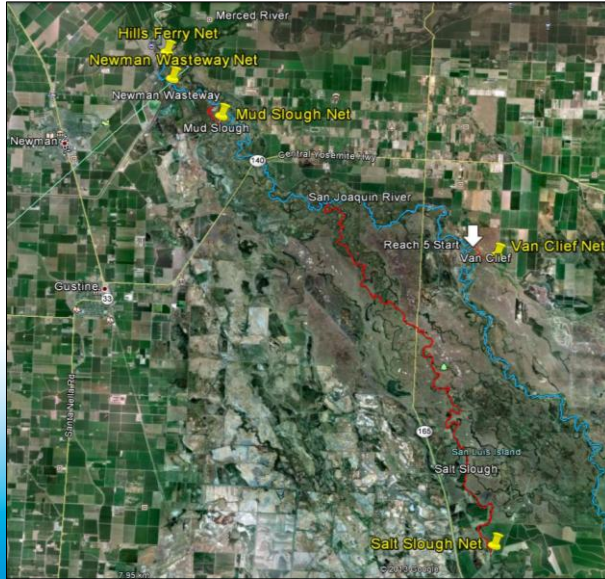
Sampling Methods

Steelhead-specific trammel nets

Trammel Netting Locations

Sampling Methods

Hills Ferry Barrier and Fyke Trap

Results

Total Number of Individuals Species (n=1,248)

* 27 fish species

Results

Endemic fish composition

Native fishes
75

Non-native fishes
1173

Results

Sampling technique

	E-Fishing	Fyke Trap	Trammel Net
Species Captured	673	393	182
Native	36	9	30
Non-native	637	384	152

Conclusions

- No Central Valley Steelhead were observed or captured during monitoring

- 2014 sampling will be performed from the confluence to the furthest upstream section of continuous wetted river channel

- 6 of 27 fish species were native to the SJR, though populations of native fish species were much less compared to non-native

- Valuable data to develop a foundational baseline of fish community assemblages and native fishes for Reach 5 of the SJRRP

- Important study for the SJRRP to ensure its commitment to restore and maintain fish populations within the Restoration Area

Preliminary Draft, Subject to Revision