Kelly Bar Off-Channel Habitat Enhancement Project
North Fork Salmon River

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CDFW Fisheries Restoration Grant Program
River Setting

Fisheries:
- Coho
- Spring and fall-run Chinook
- Summer and winter steelhead
- Pacific lamprey
- Green sturgeon

Limiting Factors:
- High river water temperatures
- Lack of off-channel habitat (Winter and Summer)

Other Impairments:
- Lack of riparian cover
- Depleted large wood
- Timber harvesting and mining impacts
- High sediment loads
Project Objectives

- Create/enhance off-channel high flow (winter) and thermal (summer) refugia habitat
- Increase large wood complexity
- Increase riparian shading on the bar
Project Approach

- Surface and groundwater elevation monitoring (WY 2015)
- Water quality monitoring (WY 2015)
- Engineering surveys and design
- Riparian Restoration Design (SRRC/PWA)
- Construction (Summer 2019)
- Post-construction monitoring
Off-Channel Alcoves and High-Flow Channels

Sawyers Bar Road

Photo: Whelan Gilkerson
Off-Channel Alcoves and High Flow Channels

Kelly Bar Alcove
West Bar Alcove
Abutment Jams/High Flow Channels
Ponds and Seasonal Channel

Willow Pond

Kelly Pond

Kelly Gulch

NF Salmon R.

Seasonal Channel/Alcove

Photo: Whelan Gilkerson
Seasonal Channel
Riparian Restoration
- Planting Islands
- Live stakes (4,000)
- Brush Baffles
Planting Islands & Brush Baffles
Project Area

- Sawyers Bar Road
- Willow Pond
- Kelly Pond
- Kelly High Flow Channel
- Abutment Jam
- Seasonal Channel/Alcove
- Kelly Gulch
- NF Salmon R.

Photo: Whelan Gilkerson
Pre-Construction Dissolved Oxygen

The graph shows the dissolved oxygen levels over time from September 2014 to October 2015. The x-axis represents the time period, while the y-axis represents the dissolved oxygen levels in mg/L. The data is categorized into three groups: 2015 NF River, 2015 Kelly Pond, and 2015 Willow Pond. The 2015 River Flow is also plotted on the right y-axis in cfs. The graph indicates a significant increase in dissolved oxygen levels in April 2015.
Average Monthly Flows
(Somes Bar USGS Gage 1911-2020)
Post-Construction Monitoring-Kelly Pond

**Top Graph:**
- **Y-axis:** Temperature, °C
- **X-axis:** Jan to Aug
- **Legend:**
  - 2015 River
  - 2015 Kelly Pond
  - 2020 Kelly Pond
  - 2020 River Temp
- **Threshold** line at 20 °C

**Bottom Graph:**
- **Y-axis:** Dissolved Oxygen (mg/L)
- **X-axis:** Jan to Aug
- **Legend:**
  - 2020 Kelly Pond
  - 2015 Kelly Pond
Fish in Kelly Pond

Fish Captured in Kelly Pond (June 24, 2020)
Water Temp 16.1 °C

- Steelhead (n = 46)
- Chinook (n = 2)
Post-Construction Monitoring - Willow Pond

**Temperature**
- **Threshold**

**Dissolved Oxygen**
- **Data Points**: 2020 Willow Hobo, 2015 Willow Pond, 2020 Willow Pond
Questions?