

Telemetry Study Summary Framework

July 19, 2019

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Study Timing: <ul style="list-style-type: none"> Study Duration: 3 years Release Dates: 5/5-6/15; 10/1-12/15 	Study site(s): <ul style="list-style-type: none"> Collection site: Mill Creek 39.5950.75N, 121.5803.38 W Release location: at screw trap
Fish	
<ul style="list-style-type: none"> Species-race: Central Valley steelhead Life stage: smolt Source: wild 	Size (median & range): <ul style="list-style-type: none"> Average Weight: 69.5 g. Average Length: 182 mm
Transmitter Information <ul style="list-style-type: none"> Type/model: ATS SS300/SS400 Weight (gm): .30 PRI/life of tag: 5 sec PRI 	Implant procedure <ul style="list-style-type: none"> Surgical placement of acoustic tag in peritoneal cavity of juvenile salmon. Incision closed using two sutures.
Telemetry Receivers: <ul style="list-style-type: none"> Receivers Maintained: 2 Technologic receivers in Deer Creek maintained by CDFW. Additional receivers deployed in Sacramento River/Delta/SF Bay by USGS and UCSC Receiver Deployment: Deployed in Mill once tagging begins (fall and spring periods) and remain in place for 30+ days after last fish is tagged Coordination with other studies/receivers needed? Yes. Coordination with deployment of receivers in Sacramento River/Delta/Bay Frequency of data download required: 2X year for Mill Creek receivers 	
Survival estimate (per species or objective) <ul style="list-style-type: none"> Type (project, etc.): NOAA-UCSC 1A Value & SE: .30 (+/-10%) Sample size/replicate: up to 100 fish in fall and spring tagging period # replicates: NA Fish tagged as available based on RST captures Analytical model: River and STAR models. These models analyses will be completed by NMFS at the end of the year 	
Hypothesis test and results (if applicable) <ul style="list-style-type: none"> H₀: NA H_a: NA Conclusion: Observational 	
Characteristics of estimate <ul style="list-style-type: none"> Effects reflected (direct, total, etc.): Evaluate survival in Mill Creek, the Sacramento River, Delta and San Francisco Bay across multiple years. Associate movement and survival 	

rates with flow and water temperature in each region to evaluate their influence on smolt survival.

- Absolute or relative: Absolute survival

Environmental/operating conditions (if applicable)

- Relevant discharge indices: Mill Creek flow 1,500 cfs or less
- Temperature: <22
- TDG: NA
- Treatment(s): Flow, turbidity, temperature

Unique study characteristics: The high numbers of steelhead smolts captured by rotary screw trap in lower Mill Creek (Tehama County) makes this study ideal for acoustic tagging purposes. The average smolt size is large enough that concerns for acoustic tag shedding are low, and the high numbers of fish captured allows for large sample sizes to be tagged and released seasonally (fall period and spring period). This study is unique in that it gives managers a snapshot into survival and movement rates of natural-origin Central Valley steelhead smolts.