**Klamath River Fisheries Monitoring**

**June 2025 Workshop - Breakout Group Outcomes**

**Escapement and Abundance** (adult-fish in) **–** Spawner surveys (redd, carcuss, weirs, harvest monitoring, disease monitoring, hatchery traps, snorkel surveys)

Upper, Mid Klamath River (including tribs), Lower Klamath and Trinity

1. *Why do it? What management purpose does it support?*
   1. Abundance estimates (non-anadromous and anadromous fish), spatial distribution and age composition
   2. Fisheries/harvest management
   3. Listed species protection – coho, spring-run, redband
   4. Tribal trust
   5. Dam removal response
   6. Hatchery effectiveness
   7. Disease (Ick) – early warning
   8. Fish passage (including Keno and Link dams)
   9. Status and trends
2. *Is the activity 1) essential, 2) really important, 3) nice to have. What are we getting out of the information? Do we still need it?*
   1. Mostly essential with some Priority 2 and ability to scale
   2. Harvest monitoring collects scales, genetic samples and CWTs
   3. Trib work to asses repopulation post dam removal could be reduced in the future
   4. Disease monitoring could be a 2, particularly over time, post dam removal
   5. Adult snorkeling survey in Lower Klamath is essential
   6. Fish passage at Keno is essential, but not currently happening
   7. Sonar is scalable – was high priority (1), but now Priority 2 (have assessed dam removal response)
3. *Who is funding it, and when does current funding end? How stable is it?*
   1. Iron Gate to Keno - CDFW, ODFW, FWS
   2. Mid Klamath watershed council does spawner survey and receives funds from PacificCorp
   3. USFWS Yreka office funds fall chinook & BOR funds winter redd survey for coho
   4. Cooperative work on redd and carcuss surveys is largely federally funded – not stable
   5. Adult weirs are federally funded (including Trinity)
   6. Adult sonar work conducted by Caltrout is funded by BOR
   7. Mid-Klamath snorkel work is federally funded – 2025 fall surveys are currently funded (FWS).
   8. Hatchery trap on Fall Creek funded by CDFW
   9. Hatchery trap on Trinity funded by USBR
4. *Other observations*
   1. Video weirs are good for spatial distribution, but not age

**Juvenile Out Migrant Monitoring**(snorkel surveys, screw traps, PIT tags)

Lower and Mid Klamath

1. *Why do it? What management purpose does it support?*
   1. Used for cohort reconstruction
   2. Assess travel times, predation and survival (PIT tags)
   3. Collect genetic samples (hands on fish)
   4. Spring snorkel surveys for coho on the Salmon River are used by Yurok to set spring seasons
   5. Mainstem snorkel surveys for Coho are tied to flow management to avoid dewatering redds
   6. Not clear how screw trap data is being used (need more discussion)
2. *Is the activity 1) essential, 2) really important, 3) nice to have. What are we getting out of the information? Do we still need it?*
   1. Some essential (Priority 1), some really important (Priority 2)
   2. Screw traps are scalable – currently lots of them – may not need them all.
   3. PIT tags could be scaled back – Priority 2
   4. Current genetic sampling study is essential for understanding spring run survival, but not high priority over the long-term
   5. Snorkel surveys are scalable (Priority 2) and could be reduced to every other year for status and trends, but are essential (Priority 1) for assessing restoration actions.
3. *Who is funding it, and when does current funding end? How stable is it?*
   1. Juvenile out migrant traps are included in BiOp. If the state couldn’t fund, BOR would take over
   2. Believe Dept (USFWS) and BOR Klamath funds juvenile migrant monitoring program.
   3. BOR funds screw trap in collaboration with USFWS Arcata. PacificCrop funds mid Klamath trib work.

Trinity (adults and juveniles)

* Weir and outmigrant screw trap are most important (believe funded at the moment through 2025)
* Spawner surveys that don’t feed into the run size estimation could be lower priority if funds are restricted
* Juvenile rearing habitat for production is at the top of the list for limiting factor on the Trinity and the spawning survey
* Outmigration is the ultimate data set for Trinity for restoration effectiveness
* Tributary efforts are piece meal and due to this are more “nice to have” and not high priority. This monitoring has been flashy/inconsistent.

**Adult Fish Passage**

Keno and Link River Dams

1. *Why do it? What management purpose does it support?*
   1. Passage capabilities/effectiveness (short-term)
   2. Escapement estimates
   3. Listed species presence
   4. Tribal trust
   5. Dam removal response
   6. Status and trends (outmigration and upstream movement)
2. *Is the activity 1) essential, 2) really important, 3) nice to have. What are we getting out of the information? Do we still need it?*
   1. Monitoring at both Keno and Link is a high priority in the near-term.
   2. Priority would be Link River Dam over Keno Dam (more effective monitoring as of now due to the infostructure of Keno).
   3. Keno could become Priority 2 over time
3. *Who is funding it, and when does current funding end? How stable is it?*
   1. BOR and ODFW – BiOp requirement

**Juvenile Entrainment** (PIT Tags arrays)

Lake Ewauna and Mainstem Keno to Link River

1. *Why do it? What management purpose does it support?*
   1. Helps determine juvenile escapement
   2. Choke point for bad water quality – TMDL requirements
   3. Tribal trust
   4. Dam removal response
   5. Status and trends (outmigration)
2. *Is the activity 1) essential, 2) really important, 3) nice to have. What are we getting out of the information? Do we still need it?*
   1. Water quality monitoring is essential (Priority 1)
   2. Priority level for PIT Tag arrays not identified by the breakout group.
3. *Who is funding it, and when does current funding end? How stable is it?*
   1. BOR – stable for 2-3 years
   2. USGS is managing the PIT Tag arrays (with BOR funding). May need to hand off to others due to staff reductions.

**Adult and Juvenile Sucker Populations** (Acoustic and radio telemetry, water quality)

Upper Klamath Lake

1. *Why do it? What management purpose does it support?*
   1. Tribal trust
   2. BiOp requirement – ESA
   3. Population assessments
   4. Status and trends
2. *Is the activity 1) essential, 2) really important, 3) nice to have. What are we getting out of the information? Do we still need it?*
   1. The following activities are all essential:
      1. Tagging and monitoring of Suckers;
      2. PIT Tag Arrays support not just suckers but also the USFWS sucker Hatchery efforts and Salmonid monitoring; and
      3. Water Quality (Algae/bacteria/cyanotoxin) - human and animal health.
3. *Who is funding it, and when does current funding end? How stable is it?*
   1. BOR, FWS, Klamath Tribes
   2. Acoustic Telemetry- 2-3 years of funding but is given yearly.
   3. Radio Telemetry: RTR contract for analysis will be ending in 2025.

Williamson River (PIT Tag Arrays, weirs, Redband spawning surveys)

1. *Why do it? What management purpose does it support?*
   1. Tribal trust and harvest
   2. BiOp requirement – ESA
   3. Sucker monitoring as well as other fishes (e.g. Redband)
   4. Inform management decisions, including angler regulations
   5. Status and trends
2. *Is the activity 1) essential, 2) really important, 3) nice to have. What are we getting out of the information? Do we still need it?*
   1. The following activities are all essential:
      1. Sucker monitoring;
      2. Redband spawning surveys; and
      3. Water quality.
   2. PIT Tag monitoring may need to be expand for salmonids and may become essential (#1) for both spring and fall chinook.
3. *Who is funding it, and when does current funding end? How stable is it?*
   1. Sucker monitoring – BOR
   2. Redband spawning surveys – ODFW (mostly personnel)
   3. Water quality - some projects and funding is supported by the Klamath Tribes (nutrient input after the Boot Leg fire (2-3 yrs of funding) BOR funded and is ending soon.

Other Tributaries and Activities in the Headwaters

* Clear Lake USGS suckers (Adult Monitoring)- BOR funded for another 2 years as of now, Juvenile monitoring is BOR funded through 2026.
* Gerber Reservoir (USFWS Net Pen Suckers, BOR Sucker Tagging).
* Tule Lake/Sheepy: USFWS monitoring of wild and SARP (net pen) sucker populations, water quality USFWS for fish and birds (essential) support the wildlife refuge.
* Wood River: ESA Bull Trout, Suckers (essential), salmon reintroduction, Water Quality )(NPS Sun creek has projects for Redband and bull trout movement, EDNA samples have been taken in the Wood River mainstem (not funded long term).
* Bull Trout in Upper Klamath- Projects are planned annually by the Bull trout working group- most is funded by NPS since it is within the park. Some additional funding ODFW/Tribes/Trout Unlimited (Personnel based). Oregon Forest grant for some Bull Trout monitoring and restoration and reintroduction (% years of funding starting 2025ish). Catena foundation is contributing private funding starting this year to help bull trout monitoring.
* Sun Creek - adult bull trout trap and electrofishing annually (NPS). Funding supplemented by Catena foundation
* NPS has a 5-year funding for Wood and Sprague Bull Trout monitoring, and has secure funding for Sun Creek.
* Avian Predation is considered important for suckers as well as the introduction of salmonids back into the system. The funding for Avian Predation scans has not been stable and varies depending on the year. ­ Projects by (USGS and Real-time Research). Essential for evaluating SARP releases.
* Pacific Lamprey- although not in the Klamath Headwaters yet is will likely be essential #1. In addition to the other lamprey species in the headwater region that are not specifically studied.
* Eye Fluke USGS/ Fish health monitoring/ Thiamine…….Fish Health in General (#1). Thiamine Study -by USFWS/OSU has a report planned for later in 2025.
* Stream Flow and Measurements, ground water (#1)- gauge in NPS may be going away, maintained by the USGS and NPS would like this gauge to stay maintained.
* Thermographs (#1 but scale could be reduced…continuous would be preferred and is inexpensive)
* Klamath Tribes hatchery was not specifically discussed. The hatchery supports suckers and is/will support salmon