

FY 2026 Science Planning

TRRP Interdisciplinary Team (IDT)
Represented by Eric Peterson, Science Coordinator



Science Plan

November 21, 2022



Overview

- IDT science proposal process
 - Including SAB evaluation and ranking
- Request approval of 2 project proposals
 - Addition of variable food intake to S3
 - Funding request: \$336,266
 - Biological response to thermal heterogeneity via turtles
 - Funding request: \$126,614
- Total: \$462,880

Science Plan

The long-term goals of the Program are to

- 1) *restore the form and function of the Trinity River, primarily the initial 40 miles below Lewiston Dam;*
- 2) *restore and maintain fish populations in the Trinity River to levels that existed prior to construction of the TRD; and*
- 3) *to facilitate full participation by dependent tribal, commercial, and sport fisheries through enhanced harvest opportunities.*

Table 3. This table provides a summary of the steps, timing, and responsibilities involved in the annual science planning process. IDT = Inter Disciplinary Team, SAB= Science Advisory Board, EDO=Executive Director's office, TMC= Trinity Management Council.

Key Uncertainties

- Wetted Width
 - Goal 1: Form
- Nutrient Flux
 - Goal 1: Function
- Temperature Regime
 - Goal 1: Function
- Fish Production
 - Goals 2 & 3: Fish
- ROD Effectiveness
 - Goals: all

Step #	Description	Whom	When
1	Confirm Key Uncertainties and determine focus for upcoming funding cycle	IDT	July (of previous fiscal year)
2	Develop specific research questions	IDT with input from SAB	Sept - Oct
3	Develop RFP	EDO supported by IDT + workgroups as needed	Nov - Dec
4	Post RFP	EDO	Jan 1 – Feb 28
5	Evaluation of individual project proposals	Workgroups + SAB	March - April
6	Develop science proposal (i.e., portfolio of projects to fund)	IDT	May
7	Presentation of science proposal	IDT	May
8	Funding decision	TMC	June
9	Contracting	EDO	Oct

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Science Plan *enhanced*

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Step #	Description	Whom	When
1	Coordinators solicit ideas from their workgroups	workgroups	June (a year ahead)
2	Confirm Key Uncertainties and determine focus for upcoming funding cycle	IDT with input from SAB	July
3	Develop specific research topics as Research Briefs	IDT with review from SAB	Sept - Oct
4	Develop RFP	EDO supported by IDT + workgroups as needed	Nov - Dec
5	Post RFP	EDO	Dec-Jan
6	Write Proposals	Individuals or ad hoc teams	Jan-Feb
7	Review of individual project proposals	Workgroups + SAB	March - April
8	Revise Proposals	Individuals or ad hoc teams	April-May
9	SAB Evaluation and Ranking	SAB	May
10	Develop science proposal (i.e., portfolio of projects to fund)	IDT	May-June
11	Presentation of science proposal	IDT	May-June
12	Funding decision	TMC	June
13	Contracting	EDO	Oct



Questions IDT Identified

- Q: Monitoring the Effects of Tributary Sedimentation Events on Salmonid Redds in the Mainstem Trinity River
 - Fish Production / ROD Effectiveness
 - *No proposal*
- Q: Development of a foodscape model for incorporation into the Stream Salmonid Simulator
 - Nutrient Flux / Fish Production
 - Proposal received
- Q: Can rehabilitation site design provide adequate thermal diversity for Northwestern pond turtle (*Actinemys marmorata*) growth?
 - Temperature Regime
 - Proposal received

Q: Development of a foodscape model for incorporation into the Stream Salmonid Simulator

- Title: Linking fish foraging with population dynamics: Incorporating variable consumption into the Stream Salmonid Simulator [S3]
- Partnership: M. Dodrill (USGS), R. Perry (USGS), K. Lindke (CDFW), C. Laskodi (YTFFP), S. Naman (NMFS), and N. Som (USGS).
- Funding Request: \$336,266 (to USGS)
- Background:
 - S3 currently accounts for consumption at a uniform rate across river length and time.
- Project (2-fold):
 - Enable variation
 - consumption rate
 - Drift foraging model*
 - Calibration
 - Available drift data
 - Otolith collection (250 juvenile Chinook)
 - Report by end of September 2027
- * more complex than it sounds
 - numerous variables per SRH2D mesh cell, per flow, to compute lookup tables for efficient running of S3
 - may require USGS High Performance Computing Center



Image: Aaron Martin

Q: Can rehabilitation site design provide adequate thermal diversity for Northwestern Pond Turtle (*Actinemys marmorata*) growth?

- Title: Thermal Assessment of Turtle Growth and Habitats at Rehabilitation Sites
- Partnership: J. Alvarez (HVT), D. Ashton (ARS), B. Nissen (USFWS)
- Funding request: \$126,614 (to HVT and ARS)
- Background:
 - A prior study shows reduced growth in focal-reach turtles versus South Fork TR ([Ashton et al. 2015](#))
- Project:
 - 1 summer fieldwork
 - 3 sites selected by occupancy - younger turtles (better to measure growth)
 - 2 weeks of site visits to capture and measure growth annuli
 - Temperature sampling at used features, mainstem, and site in general
 - Analysis: Growth (annuli) versus temperature; can also compare existing data from other thermal regimes
 - Potential comparison to SRH2D temperature model (Yurok collaboration)
 - Report drafted by December 2026



SAB Evaluation and Ranking

- Did not evaluate cost
- Overall, the SAB agrees each project can provide important learnings to the Trinity River and are worthy of funding, but with consideration to noted concerns
 - assumptions needed to develop a drift foraging module in the S3 model may overshadow its predictive capacity
 - study design for Turtles using multiple methods to collect temperature data in rehabilitation and mainstem sites may not produce defensible results [particularly the general site sampling]
- Ranked the Dodrill et al. (drift foraging) proposal somewhat higher as it addresses the primary purpose of the TRRP—fish production

IDT request to TMC

- **Fund both completed proposals:**
 - Linking fish foraging with population dynamics: incorporating variable consumption into the Stream Salmonid Simulator
 - Authors: M. Dodrill (USGS), R. Perry (USGS), K. Lindke (CDFW), C. Laskodi (YTFFP), S. Naman (NMFS), and N. Som (USGS).
 - Funding request: \$336,266 (to USGS)
 - Thermal assessment of turtle growth and habitats at rehabilitation sites
 - Authors: J. Alvarez (HVT), D. Ashton (ARS), B. Nissen (USFWS)
 - Funding request: \$126,614 (to HVT and ARS)
- Total: \$462,880