AGENDA

Salmonid Restoration Federation
Fish Passage Design and Engineering Field School

Santa Barbara, CA February 19-21, 2025

Wednesday, February 19th

9:00 a.m. **Welcome and Outline of the Day**
Dana Stolzman, Mike Love, Ross Taylor

9:10 a.m. **Primer on Fish Passage Design Approaches**
Mike Love

- Spectrum of fish passage approaches
- Walk through simple stream simulation design

9:30 a.m. **Aquatic Species and Stream Crossings**
Ross Taylor

- Ecological continuity of stream channels
- Aquatic organisms of concern in California's coastal streams
- Characteristics of instream structures that block fish movement
- Impacts of fragmenting populations
- Fish swimming abilities and requirements
- Ranking and prioritization of barriers for treatments
- Reasons for implementing fish passage projects and
- Fish passage resources

10:30 a.m. **BREAK**

10:45 a.m. **"What makes a successful stream crossing project?"**
Group Input lead by Ross Taylor

11:00 a.m. **Assessing Geomorphic Risks for Stream Crossing Projects**
Mike Love

- Causes of perched culverts; plunge pool vs. incision
- Causes and impacts of channel incision
- Risk assessments for channel incision with stream crossing projects
- Placing stream crossings in aggraded channels

11:30 a.m. **Neefus Gulch Channel Profile Analysis - Part 1**
Exercise

- Identify stable slope segments and knickpoints
- Estimate degree of incision (vertical offsets) at each knickpoint

Salmonid Restoration Federation
Fish Passage Design and Engineering Field School

Santa Barbara, CA February 19-21, 2025

12:00 p.m. **Lunch**

1:00 p.m. **Pre-design & Project Layout**

Mike Love

- Hydraulic verses Geomorphic design approaches
- Site assessment overview
- Project alignment and project profile
- Determining Vertical Adjustment Profiles (VAP)
- Selecting a design approach

1:45 p.m. **NOAA Fisheries Fish Passage Guidance and Criteria**

Emily Thomas, Hydraulic Engineer

- NOAA Fisheries West Coast Region Fish Passage Guidelines

2:15 p.m. **BREAK**

2:30 p.m. **Neefus Gulch Channel Profile Analysis – Part 2**

Exercise

- Set low and high VAP profiles
- Set a project profile at crossing
- Show final project designs

3:00 p.m. **Stream Simulation Design**

Mike Love

- Overarching principals of stream simulation
- Where it is/is not applicable
- Stream simulation design process
  - Project profile for stream simulation
  - Suitable reference reach
  - Bed design – bed materials, shape, thickness
  - Banklines, key features
  - Selecting crossing structure type and size

3:50 p.m. **BREAK**

4:05 p.m. **Local Fish Passage Projects and Field Tour Teaser**

Mauricio Gomez, South Coast Habitat Restoration

Tim Robinson, Cachuma Operation and Maintenance Board

4:50 p.m. **Field Tour Logistics**

5:00 p.m. **Adjourn**

AGENDA

Salmonid Restoration Federation
Fish Passage Design and Engineering Field School

Santa Barbara, CA February 19-21, 2025

Thursday, February 20th

9:00 a.m. **Depart from Mar Monte Hotel Parking Lot**

- Bradbury Dam Overlook
- Quiota Creek Crossings

12:15 p.m. **Lunch at River Park, San Ynez River, Lompoc**

- Salispuedes Creek at Highway 1 and Jalama Road
- El Jaro Creek at Rancho San Julian
- Arroyo Honda Creek

4:30 p.m. **Return to Mar Monte Hotel Parking Lot**

Friday, February 21st

9:00 a.m. **Stream Simulation Design – Continued**
Mike Love

- Stability/mobility analysis for stream simulation culverts
- Construction techniques

9:30 p.m. **Nickerson Creek Tributary Stream Simulation Design Exercise**

- Section A – Interpret geomorphic site data
- Section B – Design profile and alignment
- Section C - Design streambed shape and material mixture
- Sections D and E – Optional

10:15 a.m. **BREAK**

10:30 a.m. **Overview of Hydraulic Designs for Stream Crossings**
Mike Love

- Fishway with stream crossings
- Fish baffles in culverts
- Types, applications, and limitations

Salmonid Restoration Federation
Fish Passage Design and Engineering Field School

Santa Barbara, CA February 19-21, 2025

10:50 a.m. **CDFW Guidance on Fish Passage and Stream Restoration**
Kristine Pepper, CFDW Senior Hydraulic Engineer

- Fish Bulletin 183: Log & Boulder Weirs
- Fish Bulletin 184: Large Wood in Stream Habitat Restoration
- Fish Bulletin 185: Low-Tech Process-Based Stream Restoration

11:20 a.m. **Geomorphic-Based Profile Control Techniques**
Mike Love

- Applications
- Geomorphic based roughened channels
  - Basis of approach
  - Types and applications
  - Design process and construction techniques

12:00 p.m. **Lunch**

1:00 p.m. **Geomorphic-Based Profile Control Techniques – Continued**
Mike Love

- Drop structure types (boulder, log, concrete weirs)
- Shape, spacing, slope, and stability
- Design Process

1:30 p.m. **Monitoring and Adaptation**
Ross Taylor

- Questions that monitoring should answer
- Monitoring techniques
- Examples of previous fish passage monitoring

2:30 p.m. **BREAK**

2:45 p.m. **Traditional Hydraulic Designs for Stream Crossings**
Mike Love

- Fishways with stream crossings
- Fish baffles in culverts
- Types, applications and limitations

3:30 p.m. **BREAK**

3:45 p.m. **South Coast Fish Passage Projects: Opportunities and Challenges**
Sandra Jacobson, California Trout South Coast Region Director

4:15 p.m. **Adjourn**