

Salmonid Restoration Federation • CDFG • NOAA Fisheries
Fish Passage at Stream Crossings Design Workshop

San Luis Obispo, CA
November 16-18, 2010

Tuesday, November 16th

- 8:00 a.m. Registration**
- 8:30 a.m. Welcome and Outline of the Day**
Dana Stolzman, Salmonid Restoration Federation
- Pre-course survey
- 8:45 a.m. Introductions & “What makes a successful project?”**
Group Exercise - Ross Taylor Facilitates
- 9:00 a.m. Aquatic Species and Stream Crossings**
Ross Taylor
- Ecological continuity of stream channels
 - Impacts of fragmenting populations
 - Overview of aquatic species of concern in California’s coastal streams
 - Characteristics of instream structures that create fish migration barriers
 - Fish swimming abilities and requirements
 - Ranking and prioritization of barriers for treatments
- 10:05 a.m. BREAK**
- 10:20 a.m. Overview of Channel Morphology and Stream Crossings**
Michael Love
- Introduction to stream channel morphology/types
 - Causes and impacts of channel incision and aggradation
 - Channel stability and the “urban equilibrium”
 - Interaction of stream crossings with channels
 - Causes of perched culverts; plunge pool vs. incision

Tuesday, November 16th (Continued)

10:45 a.m. Pre-design & Project Layout

Kozmo Bates

- Establishing project goals and objectives
- Spectrum of fish passage approaches
 - Hydraulic verses Geomorphic design approaches
 - Range of ecological benefits
- Site assessment requirements
- Project alignment
- Determining Vertical Adjustment Profiles (VAP)
- Headcut considerations
- Developing the project profile
- Selecting a design approach

12:00 p.m. Lunch Provided

1:00 p.m. NOAA Fisheries and California DFG Fish Passage Design Guidance

Rick Wantuck, NOAA Fisheries

- Overview of fish passage design guidelines
- FEMA and funding replacements for fish passage

1:45 p.m. Geomorphic Based Designs

Kozmo Bates

- Overarching principals of stream simulation
- Determining when the stream simulation and low-slope designs are applicable.
- Stream simulation design process
 - Reference reach
 - Bed design – bed materials and shape
 - Structure sizing
 - Stability/mobility analysis: Models, design flows, bed mobility, bed stability, flood capacity
- Low-slope design process
- Geomorphic considerations of low-water crossings (fords)
- Construction techniques

2:30 p.m. BREAK

2:45 p.m. Geomorphic Based Designs (continued)
Kozmo Bates

3:15 p.m. Profile Control Techniques
Michael Love

- Applicable design criteria
- Drop structures
 - Types (boulder, log, concrete, sheetpile weirs)
 - Shape, spacing, slope, and stability
 - Design Process

4:00 p.m. BREAK

4:15 p.m. Local case study
Tallant Road Bridge Replacement for Steelhead Passage
George Johnson, Santa Barbara City Creek's Planner

4:55 p.m. Outline of the next day's activities
Dana Stolzman

Wednesday, November 17th

8:30 a.m. Profile Control Techniques (continued)
Michael Love

- Geomorphic based designs
 - Types and applications
 - Design process
- Construction techniques

10: 00 a.m. BREAK

10:15p.m. Hydraulic Designs using Baffles and Fishways
Kozmo Bates

- Design criteria and fish behavior
- Use of baffles
- Design and analysis procedures
- Fishway types, applications, layouts
- The Do's and Don'ts

Wednesday, November 17th (continued)

- 11:30 a.m. Group exercises**
- 12:00 p.m. LUNCH (SUPPLIED)**
- 1:30 p.m. Small group reports**
Ross Taylor and Michael Love Facilitate
- 2:00 p.m. BREAK**
- 2:15 p.m. CDFG & NOAA Fisheries Project Review Requirements**
Margie Caisley, CDFG
- Project Specific Requirements Submittal Checklist
 - Design Plan Criteria requirements in the Fisheries Restoration Grants Program (FRGP)
- 2:45 p.m. Monitoring and adaptation**
Ross Taylor
- “What questions should monitoring answer?” - Group Exercise
 - Monitoring techniques
 - Examples from previous fish passage monitoring
 - Monitoring and Success Stories
- 3:45 p.m. BREAK**
- 4:00 p.m. Post course survey**
- 4:10 p.m. Local case study**
Lessons learned from a over decade of implementing fish passage projects in San Luis Obispo, Brian Stark, Conservation Director, Ojai Valley Land Conservancy.
- 4:50 p.m. Field trip logistics**
Dana Stolzman, Salmonid Restoration Federation

Thursday, November 18th

OPTION A Full Day Field Tour of Fish Passage Projects

8:30 a.m. Meeting location to be determined

12:00 p.m. Lunch provided

4:00 p.m. Return to Parking Lot

OPTION B Engineering Practicum and Half-Day Field Tour

Michael Love and Kozmo Bates

8:30 a.m. Guided exercises applying design procedures and equations for various fish passage project types; may include:

- Stream simulation bed design and specifications
- Geomorphic-based profile control design and specifications

12:00 p.m. Lunch provided and engineers join afternoon field tours

4:00 p.m. Return to Parking Lot