CALTRANS FISH PASSAGE STATUS

SB 857 - SEC 3. ARTICLE 3.5 (STREETS & HIGHWAYS CODE)

- PROHIBITS ACTIONS THAT EXTEND THE LIFE OF A CULVERT OR BRIDGE BARRIER TO SALMON OR STEELHEAD, WITHOUT ADDRESSING BARRIER.
- REQUIRES CALTRANS TO;
  - REPORT ANNUAL PROGRESS ON ASSESSMENT, PRIORITIES, COMPLETED REMEDIATION LOCATION AND ACTIVE PROJECTS.
  - CONSTRUCT NEW PROJECTS THAT ARE NOT BARRIERS TO FISH.

2018 CALIFORNIA

- ~ **15,181 MILES** OF STATE HIGHWAY
  - LONGEST ROUTE – HWY 101, 807 MILES (EL CAMINO REAL/REDWOOD HIGHWAY)
  - SHORTEST ROUTE – HWY 275, 0.14 MILES, (TOWER BRIDGE)
  - HIGHEST SUMMIT – ROUTE 20 TIOGA PASS, 9,945 FEET ELEVATION
- CA HIGHWAY SYSTEM ACCOUNTS FOR ~ **9%** OF ROADS
  - 78% COUNTY AND CITY ROADS
  - 13% PRIVATE ROADS

FISH PASSAGE ASSESSMENTS, REPORTING, AND COORDINATORS

- MEET MONTHLY FOR HQ AND DISTRICT COORDINATION OF FISH PASSAGE EFFORTS
- CALTRANS HAS SURVEYED APPROX. **4,000** POTENTIAL BARRIERS TO ANADROMOUS FISH SINCE 2006.
- +/- **6,000** ADDITIONAL ASSESSMENTS NEEDED
- APPROX. **600** BARRIERS ARE CURRENTLY KNOWN ON THE STATE HIGHWAY SYSTEM.
- EACH DISTRICT WITH CURRENT OR HISTORIC ANADROMY HAS A BIOLOGY POINT OF CONTACT.

District	Coordinator
1- Eureka	Susan Leroy
2- Redding	Brenden Barney
3- Marysville	Hannah Harrell
4- Oakland	John Yeakel
5- SLO	Jim Walth
6- Fresno	Christina Anderson
7- Los Angeles	Peter Champion
10- Stockton	Christene Coffman
11- San Diego	Rush Abrams
12-Orange	Chris Waterston
HQ- Sac	Melinda Molnar 707-445-6627

INTERNAL PARTNERING

PLANNING

Pre-project planning, Project Initiation Documents (PID)

ENVIRONMENTAL

Coordinate science and data, fund assessments, coordinate internal and external permitting and efficiencies

DESIGN

Partner with agency fish passage engineers for successful project and standard design solutions

PROJECT MANAGEMENT

Project support and coordination with all internal Divisions and resource agency partners

RIGHT OF WAY

Rights to enter for barrier assessments and access for remediation projects

PROGRAMMING

Work with Project Management and Districts to find opportunities to fund priority barrier locations

MAINTENANCE

Culvert inspections, small remediation projects, maintain final State Highway System

EXTERNAL PARTNERING

FISH PASSAGE ADVISORY COMMITTEES (FISHPAC'S)

- FISHPAC'S
  - D1 – NORTH COAST (2003)
    - CALTRANS HQ BIOLOGY FUNDED LANG STUDY
  - D2 – KLAMATH-CASCADES (2007)
  - D4 – BAY AREA (2016)
  - D7, D11, D12 – SOUTHERN STEELHEAD (2017)
  - D5 – CENTRAL COAST (2017)
  - D3, D6, D10 – CENTRAL VALLEY (2018)
- FISHPAC WEBSITE; WWW.CAFISHPAC.ORG
- CALTRANS HQ BIOLOGY HAS SUPPORTED CREATING ALL FISHPAC'S, FACILITATION, GIS/MAPPING, PAD UPDATES, STORY MAP CREATION AND BIOS SUPPORT.

FISHPAC'S - SCIENCE AND DATA

- **PASSAGE ASSESSMENT DATABASE – IMPROVING INFORMATION FOR ALL USERS**
- MEMBERS INCLUDE;
  - CALTRANS, CA FISH AND WILDLIFE, NATIONAL MARINE FISHERIES SERVICE, US FISH AND WILDLIFE, CALTROUT, COASTAL COMMISSION, TROUT UNLIMITED, STATE COASTAL CONSERVANCY,
- MAIN GOALS;
  - SHARE AND IMPROVE SCIENCE AND DATA - PRIORITIES
  - SUPPORT REMEDIATION PROJECTS AND EFFORTS
  - BIOLOGISTS AND ENGINEERS COORDINATE

FUTURE PRIORITIES – CALTRANS BARRIERS PRIORITIZATION

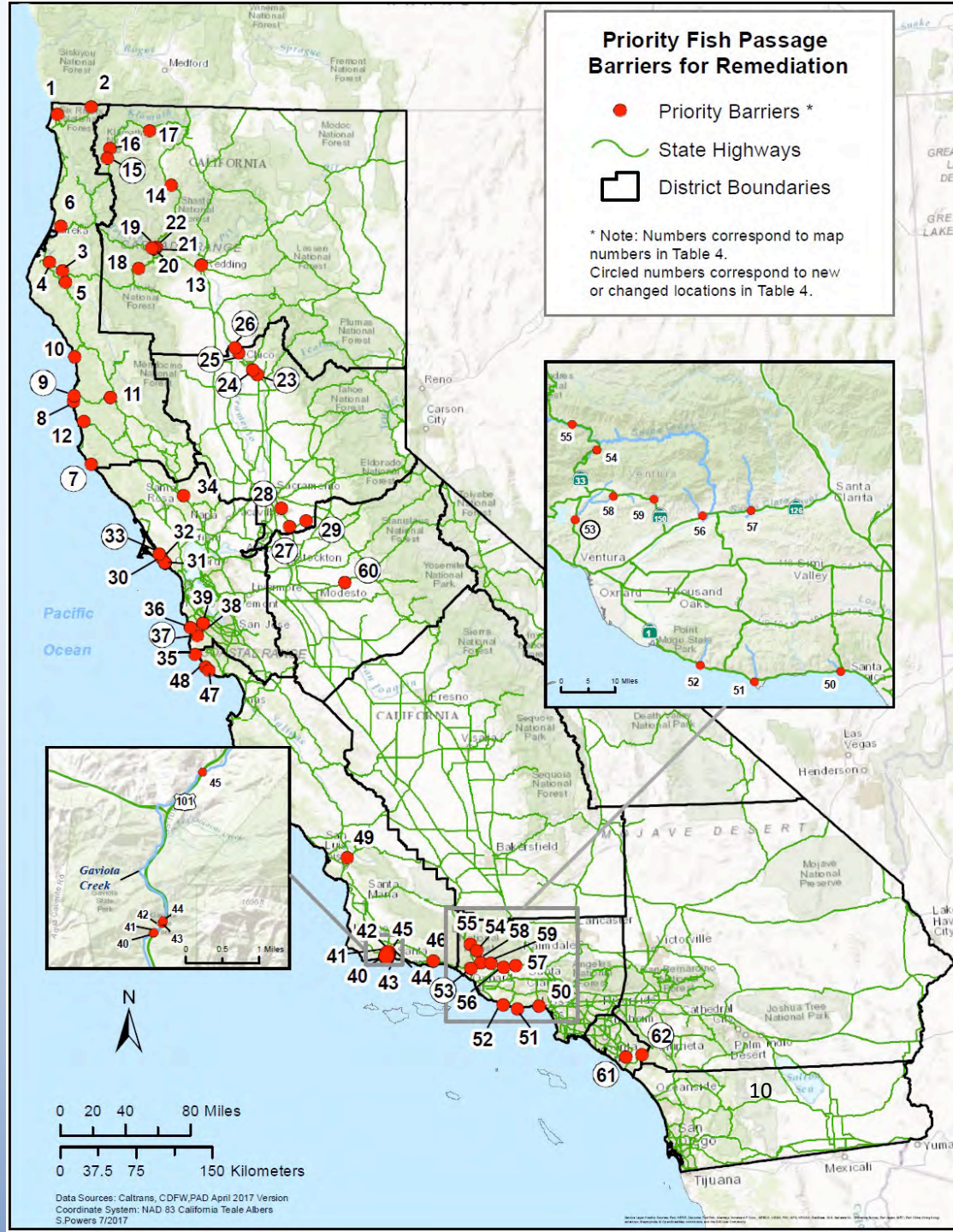
1. SELECT LOCATIONS FROM FISHPAC WEBSITE - OTHER KNOWN BARRIERS LIST (XL SPREADSHEET)
   - ANY NEW PROPOSED LOCATIONS MUST BE ADDED OR UPDATED IN PAD AND HAVE A PAD ID
2. FISHPAC'S IMPROVE AND UPDATE SCIENCE AND DATA FOR ALL LOCATIONS IN CONSIDERATION
   - SPECIES DIVERSITY, HABITAT QUALITY/QUANTITY AND PROFESSIONAL KNOWLEDGE
3. REFINE AND FINALIZE CRITERIA FOR PRIORITIZATION
   - MUST MEET REQUIREMENTS FOR CALTRANS
4. MEMBERS INDIVIDUALLY RANK ALL LOCATIONS
   - FACILITATOR COMBINES AND PROVIDES RANKINGS

ENGINEERING SOLUTIONS

- THE LONG-TERM SOLUTION FOR A MAJORITY OF FISH BARRIERS ARE SMALL BRIDGES
- CALTRANS STRUCTURES HAS A ENGINEER WORKING ON FISH PASSAGE STANDARD PLANS FOR SMALL BRIDGES (20 TO 120 FEET)
- CALTRANS HAS FUNDED ENGINEERING POSITION AT CDFW AND NMFS – JOHN WOOSTER AND RICK MACALA
- CALTRANS HQ DESIGN HYDRAULICS CONVENES MONTHLY MEETINGS OF THE INTERAGENCY FISH PASSAGE ENGINEERING GROUP
  - COORDINATE ENGINEERING ISSUES TO INCLUDE TRAINING, GUIDANCE AND PARTNERING.
  - RESEARCH; 1) GUIDANCE TO DETERMINE THE ACTIVE CHANNEL WIDTH (FULL-SPAN SOLUTIONS), AND 2) PILOT EXPERT INSPECTIONS OF 44 LOCATIONS REMEDIATED BETWEEN 2006-2017.

FISH PASSAGE PRIORITIES

- **62** PRIORITY LOCATIONS (ALL 10 DISTRICTS/FISHPAC'S
- IDENTIFY FUNDING POTENTIAL FOR PRIORITY LOCATIONS



ACTIVE (FUNDED) LOCATIONS

- **40** ACTIVE PROJECTS BEING DEVELOPED FOR IMPLEMENTATION OF FISH PASSAGE SOLUTIONS

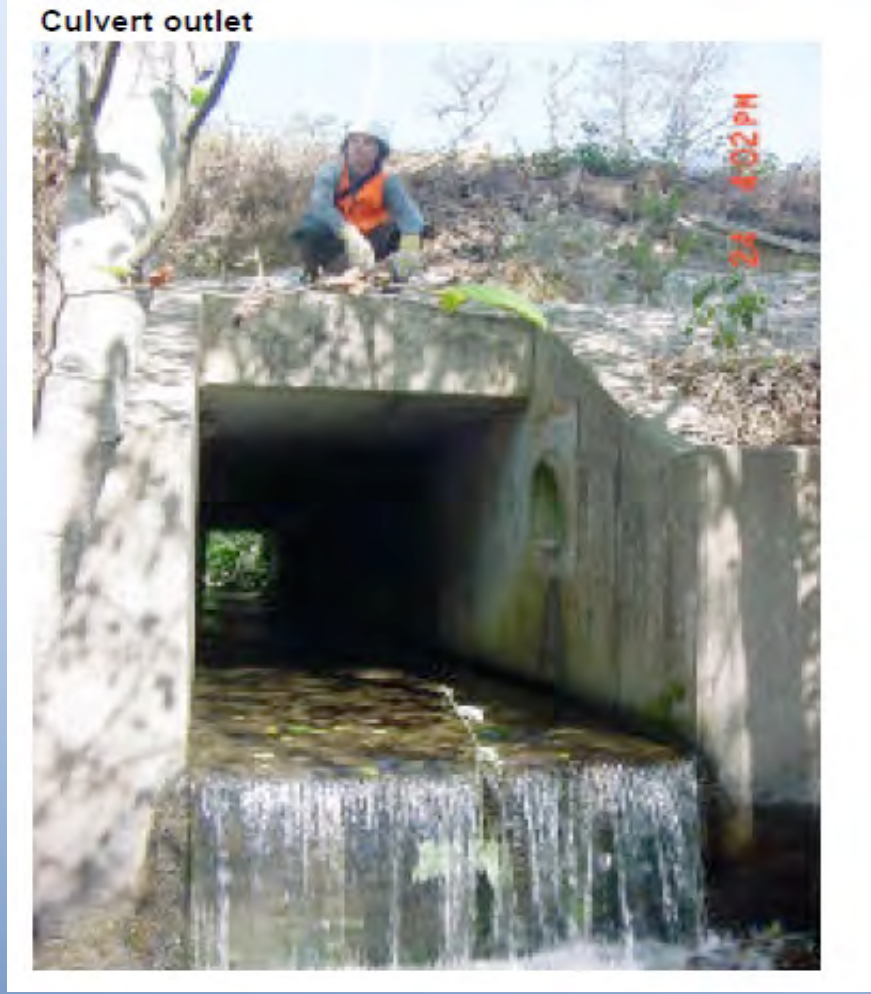
BARRIER STATUS

- **44** BARRIERS REMEDIATED FROM 2006 TO 2017
- **~600** KNOWN BARRIERS
  - INCLUDES **40** FISH PASSAGE LOCATIONS IN PROJECT DEVELOPMENT AND **62** PRIORITY LOCATIONS FOR FUNDING

Caltrans

TYPICAL HIGHWAY BARRIERS

TYPICAL HIGHWAY BARRIERS



TYPICAL HIGHWAY FULL REMEDIATION

TYPICAL HYDRAULIC (PARTIAL) REMEDIATION

CALTRANS GOALS AND CRITERIA – SMALL BRIDGES

- SMALL BRIDGE SOLUTIONS THAT ADDRESS TYPICAL SALMON AND STEELHEAD BARRIERS ON THE STATE HIGHWAY (20-120 FT SPAN).
- BRIDGES THAT SPAN THE FULL CHANNEL WITHOUT IMPEDING FLOW AND THAT CAN BE MODIFIED FOR SITE SPECIFIC NEEDS.
- SCOUR RESISTANT FOUNDATIONS THAT WILL LAST ~100 YEARS
- AVOID AND MINIMIZE ROCK REVETMENT, WHICH CAN BE A BARRIER TO FISH.

ANALYSIS OF FOUNDATIONS ALTERNATIVES

Pile Size (inches)	Pile Type	Range of Depth (ft)	
		Minimum	Maximum
12	Precast Concrete	30	50
14	H-beam piles	40	80
14	Steel pipe piles	40	80
15	Precast Concrete	40	60
16	H-beam piles	40	80
16	Steel pipe piles	40	80
24	Steel pipe piles	40	100
36	Steel pipe piles	50	150

- **8** POTENTIAL FOUNDATIONS ALTERNATIVES AND RANGES OF DEPTHS ARE BEING CONSIDERED TO SUPPORT THE SINGLE-SPAN SUPERSTRUCTURES.
- STRUCTURES FOUNDATIONS COMMITTEE IS CURRENTLY WORKING WITH TRANSLAB GEOTECHNICAL ENGINEERS ON A PARAMETRIC PILE STRIKE ANALYSIS IN ORDER TO ESTIMATE STRIKE COUNTS REQUIRED FOR THE RANGE OF POTENTIAL DEPTHS.
- FOUNDATIONS ALTERNATIVES THAT MOVE FORWARD WILL DEPEND ON THE STRIKE ANALYSIS AND POTENTIAL FOR TAKE.

FOUNDATIONS ANALYSIS CONSIDERATIONS

- LAND-BASED PILE DRIVING, FOR SINGLE SPAN ABUTMENTS
- NO ANTICIPATED PILE DRIVING WOULD OCCUR DIRECTLY IN THE WET CHANNEL DUE TO;
  - LOW FLOW SEASON WORK WINDOW
  - PROJECT ISOLATION AND DEWATERING
  - RELATIVELY SMALL SIZE OF MOST STREAMS AND CREEKS THAT HAVE FISH PASSAGE BARRIERS

DES PROJECT DELIVERY
DIVISION OF ENGINEERING SERVICES

LITTLE MILL CREEK – CONVENTIONAL CONSTRUCTION WITH PRECAST ELEMENTS

CULVERT REPLACED WITH PRECAST/PRESTRESSED "I" GIRDER BRIDGE

01-DN-197-6.15
Bridge No. 01-0084

DES PROJECT DELIVERY
DIVISION OF ENGINEERING SERVICES

OTHER WILDLIFE BENEFITS

Photo courtesy WA DOT

QUESTIONS?