



**Annual Report to the Legislature
For Calendar Year 2014**

**COASTAL ANADROMOUS FISH PASSAGE ASSESSMENT
AND REMEDIATION PROGRESS REPORT**



*Fort Goff (District 2, Redding) Fish Passage structure

**Prepared:
October 2015**

**Prepared by the California Department of Transportation
Division of Environmental Analysis**

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Executive Summary

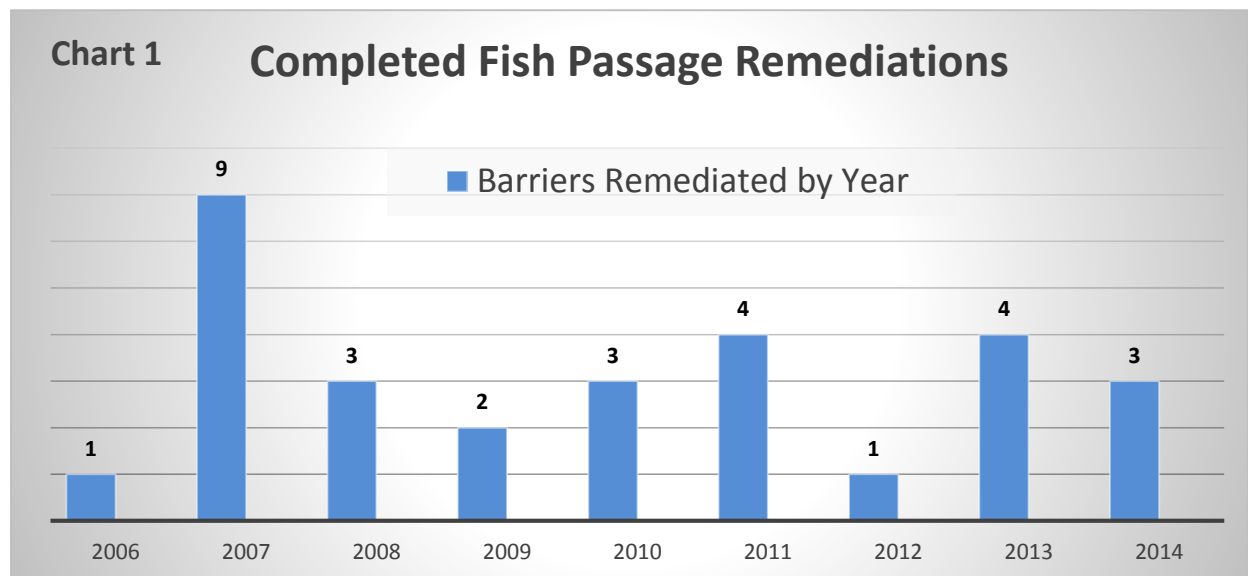
2014 Fish Passage Program Accomplishments

- Completed Fish Barrier Remediations = **3 Locations**
- Completed Fish Passage Assessments = **1 location**
- Active Fish Passage Remediation Projects (programmed) = **24 projects**
- Priority Fish Passage Barriers (future program) = **48 locations**

Quality Assurance Review and New Assessments

In coordination with the California Department of Fish and Wildlife (CDFW), the California Department of Transportation (Caltrans) continues to assess the Passage Assessment Database (PAD) for quality assurance review (QA/QC), of state highway locations. The purpose of the QA/QC is to improve and refine data for existing and new locations, which will help to inform future assessment needs, program staff and funding needs to develop and deliver fish passage remediation projects, and help to inform project priorities for recovery decisions. Completed locations have gone through the QA/QC process as well. Two additional locations have been added to the Completed list, which have not previously been reported, and 5 locations have been removed, due to continued partial barrier status, and duplicate or inaccurate information that has now been updated.

Chart 1 below, **Completed Fish Passage Remediations**, lists fish passage remediation projects by the Year which they were completed, as provided by the PAD.



Based on the PAD QA/QC, additional assessments were funded in 2014, to survey identified data gaps within San Mateo, Marin, Santa Cruz, Mendocino, Humboldt and Trinity Counties.

This information was recently incorporated into the PAD and will be included in the report to legislature for the 2015 Calendar year (Oct 2016).

The PAD also tracks resident fish, such as Modoc sucker and Lahonton cutthroat trout. In the 2013 report to Legislature, resident fish species were not excluded from the estimate of known barriers. Since SB 857 is specific to anadromous fish, this report has been updated to exclude non anadromous barriers, thus reducing the currently known barriers to anadromous species on the State Highway System by approximately 40 locations.

As new assessments are completed, barriers are remediated, and existing information is further refined in the PAD, the relative number of barrier locations and associated priorities will be updated to reflect the best available science and prioritization information.

Prioritization – Criteria and Partnering with CDFW

Caltrans and CDFW coordinate to determine the combined priority list of fish passage barriers on the state highway system. Once barrier locations have been assessed and identified, priorities are assigned, based on the relative habitat value at each location. The habitat value of each location is defined by the presence (or historic presence) and diversity of anadromous species, suitable upstream habitat quality and quantity and the localized knowledge of expert fisheries and hydraulic professionals.

Each parameter for prioritization criteria is necessary to understand and compare the recovery opportunities at individual locations. Any one parameter alone does not relay the significance of benefits for multiple species or translate into water availability during low flow, nor does it demonstrate the quality of habitat for rearing and migrating anadromous fish.

The drought has posed additional challenges to anadromous fish migration and the recovery of listed salmonid species. State and Federal partner agencies are working to identify stretches of watersheds that are likely to provide cool water during the late summer and early fall, in order to sustain salmon populations.

Partnering – Internal

Towards the end goal of improving fish passage remediation through project delivery and internal processes, Caltrans is working to align internal project delivery stakeholders.

Current internal alignment efforts that are underway;

- Define each divisions' roles and responsibilities, related to improving fish passage planning, development and implementation of projects.
- Work with Districts to identify opportunities to incorporate the updated list of 48 high priority fish passage locations into existing or future funded projects.
- Ensure that all identified fish passage barriers (culverts and bridges) have current inspections to determine if there are any overlapping transportation deficiencies.

- Work with NOAA and CDFW engineers to develop standard design solutions for the varied state highway fish barrier types (i.e. culvert replacement, new bridges, weirs), in order to meet species migration needs and to achieve design and approval efficiencies.

Partnering – External

Caltrans and NMFS finalized a Programmatic Biological Opinion (PBO) in October 2013, with the primary intent of streamlining fish passage projects. The geographic scope of the PBO is from the Oregon border to Santa Cruz County and is consistent with the range of Central California Coast Coho salmon, which are endangered in California. Caltrans and NOAA continue to work together to improve the efficiency of fish passage remediation projects. In July of 2015, Caltrans and NOAA executed a new interagency agreement, which includes a Caltrans-funded fish passage engineer position. This engineer will work under the direction of NOAA, with a primary focus on Caltrans fish passage locations, to include helping to scope solutions and fish passage design approvals.

In discussions with CDFW, management has conveyed a continued interest in working with Caltrans to streamline permitting efforts for routine activities, including fish passage. Caltrans and CDFW are also working on a new interagency agreement, which is expected to be executed before the end of 2015. The updated agreement also includes a Caltrans-funded fish passage engineer position. This engineer will work under the direction of CDFW, with a primary focus on Caltrans fish passage locations, to include helping to scope project solutions and fish passage design approvals.

Caltrans continues to participate in the California Fish Passage Forum (Forum). The Forum is a collaborative group that was established in 1999 by the California Natural Resources Agency to facilitate coordination of state, local and federal partners, toward the end goal of restoring anadromous fish (salmon and steelhead) populations to naturally sustainable levels. Fish Passage barriers are recognized as a major threat to anadromous fish in California and their removal or modification has the potential to yield the greatest cost-efficiency for short-term restoration activities. Based on this recognition, a primary objective of the Forum is to coordinate fish passage remediation activities in California.

The new Forum Memorandum of Understanding (MOU) is in the process of being renewed and signed by the directors of all Forum partners, to include Caltrans. The Director's approval provides a firm foundation for all partners of the Forum to work towards efficiencies and to help facilitate fish passage project delivery.

Purpose of Report

The purpose of this report is to provide fish passage assessment and remediation information for locations which Caltrans is responsible. This is in accordance with Article 3.5 of Chapter 1 of Division 1 of the Streets and Highways Code, SB 857 (Kuehl, Chapter 589 and Statue of 2005). This report updates Caltrans' progress and describes assessment and remediation activities between January 1 and December 31, 2014. In California, salmon and steelhead are listed under the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA), as shown in the **Species Listing Status** below.

Species Listing Status - State and Federal Anadromous Species Listing

| Species | Range | State/Federal Listing | Caltrans Districts with identified Barriers to species Habitat |
|-----------|---|-----------------------|---|
| Coho | Oregon to Northern CA coast Oregon (N. Punta Gorda) | Threatened | District 1 (Eureka), District 2 (Redding) |
| Coho | Central CA coast (S. Punta Gorda to Monterey Bay) | Endangered | District 1 (Eureka), District 4 (Oakland) |
| Chinook | California Coastal – Klamath River to Russian River | Threatened | District 1 (Eureka), District 4 (Oakland) |
| Chinook | Central Valley Spring – Sacramento & Feather River | Threatened | District 2 (Redding), District 3 (Marysville) ¹ |
| Chinook | Sacramento River Winter – Sac River & tributaries | Endangered | District 2 (Redding), District 3 (Marysville) |
| Steelhead | Northern CA Coastal – Redwood Creek to Gualala River | Threatened | District 1 (Eureka), District 4 (Oakland) |
| Steelhead | CA Central Valley – Sacramento, San Joaquin Rivers & tributaries | Threatened | District 2 (Redding), District 3 (Marysville), District 6 (Fresno), District 10 (Stockton) |
| Steelhead | Central CA Coast – Russian River to Aptos Creek | Threatened | District 1 (Eureka), District 4 (Oakland), District 5 (San Luis Obispo) |
| Steelhead | Southern Central CA Coastal – Pajaro River to, but not including, Santa Maria River | Threatened | District 5 (San Luis Obispo) |
| Steelhead | S. CA Coast – Santa Maria River to U.S./Mexico Border | Endangered | District 5 (San Luis Obispo), District 7 (Los Angeles), District 11 (San Diego), District 12 (Orange) |

¹ District 3 (Marysville), District 6 (Fresno) and District 10 (Stockton); are within the ranges of anadromous fish, however there have been no barriers to anadromy identified on the state highway system within those Districts, by either Caltrans or the California Department of Fish and Wildlife.

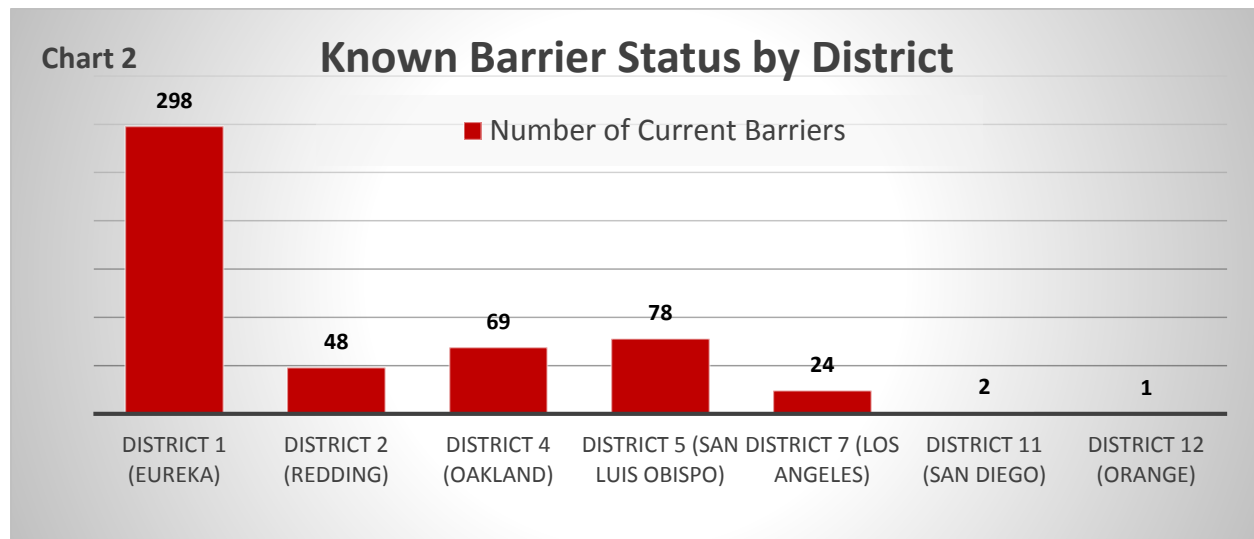
As noted in the **Species Listing Status** on page 6, three species are currently listed as endangered (red), while all other species noted are currently listed as threatened. In consideration of prioritizing fish barrier locations for funding, endangered species are assigned an increased priority value over species listed as threatened. The increased priority status is commensurate with the need of assisted recovery efforts for endangered species and in alignment with the California Environmental Quality Act. Locations with habitat for multiple listed species are also given increased priority value.

Caltrans District boundaries are shown below, as related to the listed species and the District Offices.



Performance Measures

Since 2006, Caltrans has been tracking information, related to planning, project delivery and implementation of fish passage remediation projects. Currently, there are an estimated **520** barriers to fish on the state highway system, shown below in Chart 2, **Known Barrier Status by District**, (per PAD).



Project costs

Costs associated with private, local or other state DOT's are not comparable to the costs of fish passage barrier remediations on the California state highway system for a number of considerations, including;

- As a state, California has some of the highest seismicity (earthquake) standards, which require a foundation analysis, geotechnical investigations (drilling), load bearing analysis and, in general, a more robust substructure (foundation) is required.
- The standard design life-span for structures in California is 70 years. Many of the comparable fish passage remediations on the Oregon and Washington highway system are designed to a 30 year, life span.
- Transport trucking, commerce and safety standards require wider shoulders, safety barriers, and other elements, which are not required on private, local and county routes.

After 10 years of delivering fish passage remediation projects, Caltrans staff and resource partners are becoming more efficient and expert at planning and implementation. Through efforts to increase staff expertise, the implementation of standard designs, and continued partnering with regulatory agencies for permitting and other efficiencies, the costs for planning and developing projects will likely continue to reduce.

Ranges of those costs are in the **Cost Summary - Estimated Cost Ranges** table, below.
Estimated costs include planning, design, permitting, construction and post-construction monitoring for successful implementation of fish passage projects.

Cost Summary - Estimated Cost Ranges (2006 – 2013)

| Remediation Category | Range of Costs in millions (average) ² | Percentage of known barrier Locations Estimated for Each Remediation Category ³ |
|---|---|--|
| Large Bridge defined as <u>Greater</u> than 50-ft | \$3M to \$8.4M (\$5.7 M) | 6%, (approx. 31 locations) |
| Small Bridge defined as <u>Less</u> than 50-ft | \$1.8M to \$2.5M (\$2.15M) | 40% (approx. 208 locations) |
| Large Culvert Replacement of undersized culvert, with <u>80-inch culvert or larger</u> . Some foundation work may be necessary. | \$300K to \$1M (\$650K) | 30% (approx. 156 locations) |
| Retrofit Retrofit existing culvert or structure to accommodate fish passage. | \$450K to \$1.4M (\$925K) | 24% (approx. 125 locations) |

Upstream Habitat Value

Passage Assessment Database staff at CDFW are working to estimate extents of anadromous habitat that exist above barriers (or previous barriers), by use of remote sensing and GIS. These estimates require field surveys to verify the extent of habitat. Caltrans is working with CDFW to verify habitat availability upstream of all locations, to include completed, active and priority locations. Some of these values are known but many of the identified locations do not have verified upstream surveys. When upstream habitat areas are verified by field survey, those values will be updated in PAD and used to prioritize current barriers. This metric will also help to determine the progress of efforts to restore habitat access above barriers on the state highway system.

² The average estimated costs are reflective of materials, labor and items, at a rate that is consistent with 2006-2013 industry.

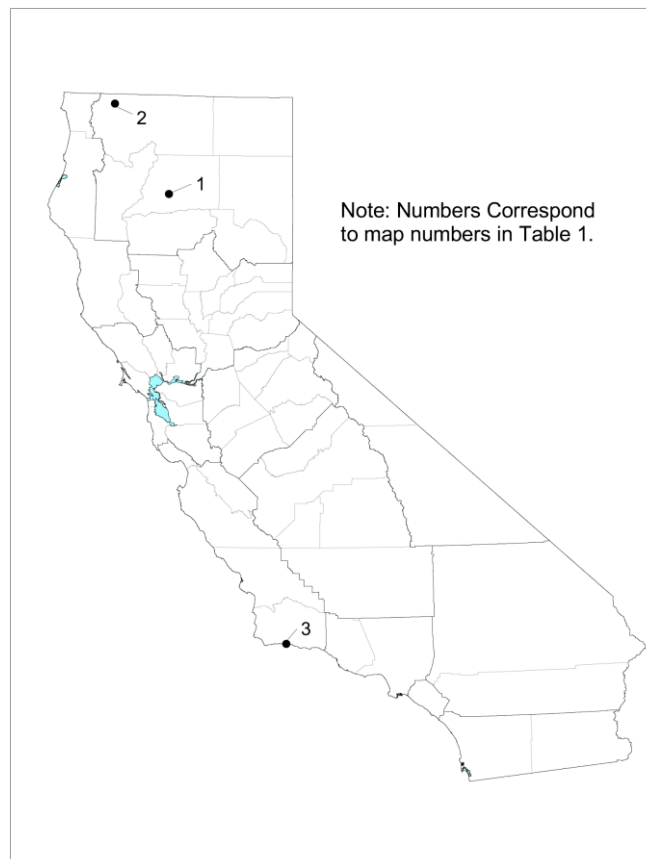
³ Percentage of locations is an estimate of the types of solutions for the existing 520 known barriers. This estimate is based on the percentage of solutions in each category, for the 30 locations that have been remediated on the state highway system, since 2006. Information from the Caltrans Project Management database was used to estimate cost ranges and averages.

2014 Completed Fish Passage Remediations

Three fish passage remediation projects were completed in 2014. Table 1, 2014 Completed Fish Passage Remediations, contains information on the locations. Below Table 1 is Figure 1, a map of the locations listed in Table 1.

| Table 1 – 2014 Completed Fish Passage Remediation | | | | | | | |
|---|-------------------|---------------|-------|-----------|----------|------------------------------|------------------------------|
| Map # | Caltrans District | County | Route | Post Mile | Pad ID # | Stream Name | Project Name |
| 1 | 2 | Shasta | 299 | 32.2 | 737295 | Yank Creek/Lemm Creek Bridge | Yank Creek/Lemm Creek Bridge |
| 2 | 2 | Siskiyou | 96 | 56.0 | 707168 | Klamath River | Fort Goff Creek |
| 3 | 5 | Santa Barbara | 101 | 38.8 | 707168 | Pacific Ocean | Tajiguas Creek |

Figure 1 - 2014 Completed Fish Passage Remediation



2014 Completed Fish Passage Assessments

One fish passage assessments was completed in 2014. Table 2, 2014 Completed Fish Passage Assessments, contains information on the assessment location. Below Table 2 is Figure 2, showing the locations that are listed in Table 2.

| Table 2 – 2014 Completed Fish Passage Assessments | | | | | | | | |
|---|-------------------|-------------|----------|-------|-----------|----------|----------------|---------------|
| Map # | Caltrans District | Report Date | County | Route | Post Mile | Pad ID # | Stream Name | Tributary to |
| 1 | 1 | Oct 2014 | Humboldt | 96 | 8.83 | 707141 | Campbell Creek | Trinity River |

Figure 2 - 2014 Completed Fish Passage Assessments



Active Fish Passage Remediation Projects

Caltrans is currently developing projects to remediate 24 fish passage barrier locations. Table 3 below, Active Fish Passage Remediation Projects, lists the current remediation project locations. Locations are either funded through construction, or partially funded for planning, design or permitting. Figure 3, (page 14), is a map of locations that are listed in Table 3.

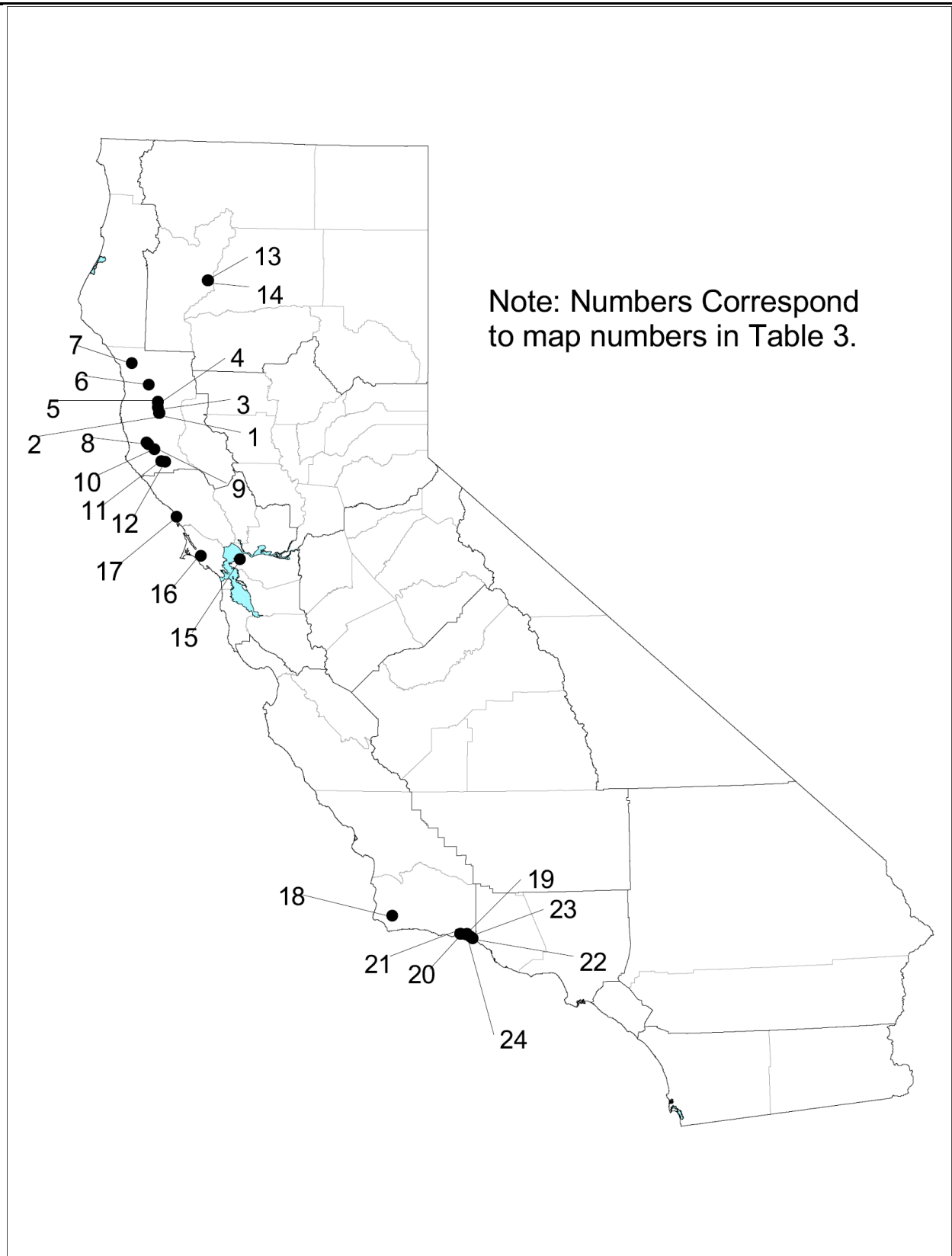
| Table 3 – Active Fish Passage Remediation Projects | | | | | | |
|---|--------------------------|-----------------------------------|-------------------------------------|-----------------|----------------------------------|-----------------------------------|
| Map # | Caltrans District | County – Route – Post Mile | Estimated Year of Completion | PAD ID # | Stream Name | Project Name |
| 1 | 1 | Mendocino – 101 – PM 44.0 | 2017 | 713107 | Unnamed tributary to Haehl Creek | Willits Bypass |
| 2 | 1 | Mendocino – 101 – PM 44.5 | 2017 | 712894 | Unnamed tributary to Haehl Creek | Willits Bypass |
| 3 | 1 | Mendocino – 101 – 48.14 | 2017 | 705136 | Upp Creek | Willits Bypass |
| 4 | 1 | Mendocino – 101 – PM 52.36 | 2017 | 707085 | South Fork Ryan Creek | Willits Bypass Mitigation |
| 5 | 1 | Mendocino – 101 – PM 52.25 | 2017 | 707086 | North Fork Ryan Creek | Willits Bypass Mitigation |
| 6 | 1 | Mendocino – 101 – PM 66.5 | 2016 | 707096 | Ten Mile Creek | 36 Culverts |
| 7 | 1 | Mendocino – 101 – PM 89.04 | 2019 | 706954 | Cedar Creek | Cedar Creek |
| 8 | 1 | Mendocino – 128 – PM 20.15 | 2016 | 707196 | Unnamed | 22 Culverts ⁴ |
| 9 | 1 | Mendocino – 128 – PM 21.8 | 2016 | 707199 | Clow Creek | 22 Culverts |
| 10 | 1 | Mendocino – 128 – PM 27.54 | 2016 | 707205 | Graveyard Creek | 22 Culverts |
| 11 | 1 | Mendocino – 128 – PM 36.63 | 2016 | 707208 | Lost Creek | 22 Culverts |
| 12 | 1 | Mendocino – 128 – PM 39.88 | 2016 | 707210 | Beebe Creek | 22 culverts |
| 13 | 2 | Trinity – 299 – PM 68.0 | 2015 | 720511 | Little Grass Valley Creek | Trinity Dam Boulevard Fish Ladder |

⁴ 22 culverts; only 5 of the 22 culverts have fish passage issues, all 5 are listed in this table.

| Map # | Caltrans District | County – Route – Post Mile | Estimated Year of Completion | PAD ID # | Stream Name | Project Name |
|-------|-------------------|-------------------------------|------------------------------|----------|---------------------------|--|
| 14 | 2 | Trinity – 299 – PM 68.2 | 2015 | 735688 | Little Grass Valley Creek | Trinity Dam Boulevard Fish Ladder |
| 15 | 4 | Contra Costa – 80 – PM 8.4 | 2016 | 723716 | Pinole Creek | Pinole Creek ⁵ (RCD, by Encroachment) |
| 16 | 4 | Marin – 1 – PM 24.77 | 2018 | 732502 | Tributary to Olema Creek | Olema Creek Culvert Replacement |
| 17 | 4 | Sonoma – 1 – PM 15.1 | 2019 | 733223 | Scotty Creek | Gleason Beach Highway Realignment |
| 18 | 5 | Santa Barbara – 1 – PM 15.6 | 2019 | 700085 | Salsipuedes Creek | Salsipuedes Bridge Replacement |
| 19 | 5 | Santa Barbara – 101 – PM 5.6 | 2023 | 734310 | Arroyo Parida Creek | South Coast HOV |
| 20 | 5 | Santa Barbara – 101 – PM 9.4 | 2023 | 705161 | Romero Creek | South Coast HOV (0N700) |
| 21 | 5 | Santa Barbara – 101 – PM 9.6 | 2023 | 734342 | San Ysidro Creek | South Coast HOV (0N700) |
| 22 | 5 | Santa Barbara – 101 – PM 0.0 | 2023 | 707368 | Rincon Creek | South Coast HOV (0N700) |
| 23 | 5 | Santa Barbara – 101 – PM 2.2 | 2020 | 707182 | Carpinteria Creek | Highway 101 Linden/ Casitas Pass (4482U) |
| 24 | 5 | Santa Barbara – 192 – PM 15.5 | 2019 | 706239 | Arroyo Parida Creek | Arroyo Parida Creek (39610) |

⁵ The Contra Costa Resource Conservation District is the sponsor of this project and has worked with Caltrans through the Encroachment Permit process.

Figure 3 - Active Fish Passage Remediation Projects



Priority Fish Passage Barriers for Remediation

Table 4, Priority Fish Passage Barriers for Remediation, is listed below. All listed crossings have equal priority. The locations that are **bold and underlined** are locations that are new to the 2014 Fish Passage Annual Report. There are 48 locations identified on the priority table.

| Table 4 – Priority Fish Passage Barriers for Remediation | | | | | |
|---|--------------------------|-----------------------------------|-----------------|--------------------------------|------------------------------|
| Map # | Caltrans District | County – Route – Post Mile | PAD ID # | Stream Name | Tributary to |
| 1 | 1 | Del Norte – 101 – PM 39.78 | 707134 | Dominie Creek | Smith River |
| 2 | 1 | Del Norte – 197 – PM 5.0 | 707143 | Sultan Creek | Smith River |
| 3 | 1 | Del Norte – 197 – PM 6.15 | 707142 | Little Mill Creek | Smith River |
| 4 | 1 | Del Norte – 199 – PM 31.31 | 707137 | Griffin Creek ⁶ | Middle Fork Smith River |
| 5 | 1 | Humboldt – 101 – PM 124.49 | 713025 | Little Lost Man | Prairie Creek |
| 6 | 1 | Humboldt – 254 – PM 4.18 | 707157 | Fish Creek – Ave of the Giants | South Fork Eel River |
| 7 | 1 | Humboldt – 299 – PM 2.97 | 713051 | Essex Gulch | Mad River |
| 8 | 1 | Mendocino – 1 – PM 4.64 | 713068 | Fish Rock Gulch | Pacific Ocean |
| 9 | 1 | Mendocino – 1 – PM 54.62 | 707070 | Doyle Creek | Pacific Ocean |
| 10 | 1 | Mendocino – 1 – PM 58.78 | 707072 | Digger Creek | Pacific Ocean |
| 11 | 2 | Shasta – 36 – PM 3.6 | 737281 | Harrison Gulch | Middle Fork Cottonwood Creek |
| 12 | 2 | Shasta – 273 – PM 18.0 | 707132 | Sulphur Creek | Sacramento River |
| 13 | 2 | Siskiyou – 3 – PM 6.5 | 707148 | Big Mill Creek | Scott River |
| 14 | 2 | Siskiyou – 5 – PM 27.2 | 720504 | Parks Creek | Shasta River |

⁶ Broken Kettle Creek was removed from the priority list, due to recent information, which indicated that another location, Griffin Creek, rates higher in biological significance. CDFW Region 1 staff and Caltrans District 1 staff partnered to make this determination.

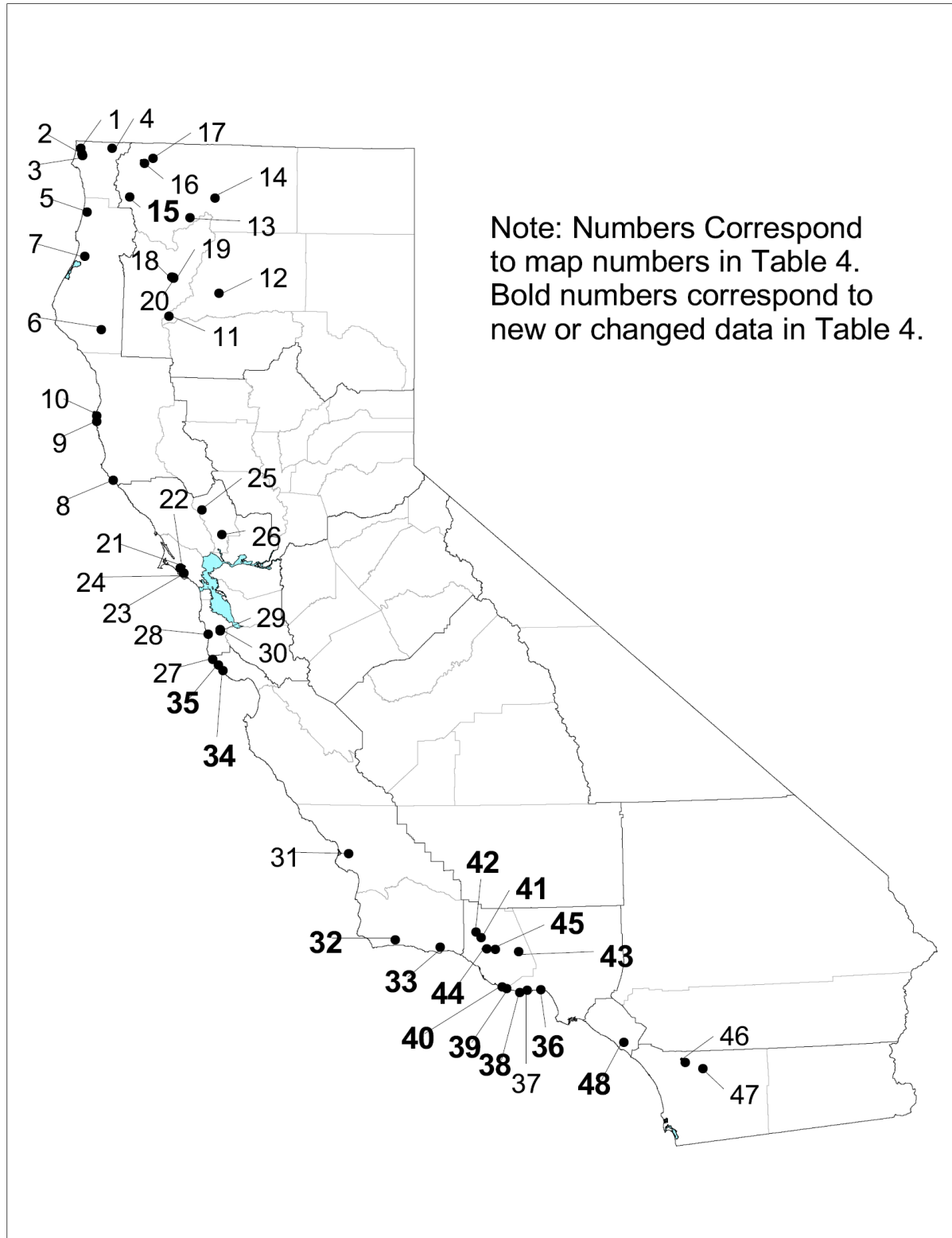
| Map # | Caltrans District | County – Route – Post Mile | PAD ID # | Stream Name | Tributary to |
|------------------|-------------------|---|----------------------|-------------------------------|---|
| <u>15</u> | <u>2</u> | <u>Siskiyou – 96 – PM 9.1</u> | <u>720537</u> | <u>Sandy Bar Creek</u> | <u>Klamath River⁷</u> |
| 16 | 2 | Siskiyou – 96 – PM 43.5 | 720541 | Cade Creek | Klamath River |
| 17 | 2 | Siskiyou – 96 – PM 56.9 | 707169 | Portuguese Creek | Klamath River |
| 18 | 2 | Trinity – 299 – PM 49.6 | 720522 | West Weaver Creek | Trinity River |
| 19 | 2 | Trinity – 299 – PM 51.2 | 737674 | Sydney Gulch | Trinity River |
| 20 | 2 | Trinity – 299 – PM 51.4 | 735941 | Garden Gulch | Trinity River |
| 21 | 4 | Marin – 1 – PM 22.67 | 706059 | John West Fork | Olema Creek |
| 22 | 4 | Marin – 1 – PM 22.78 | 706058 | Giacomini Gulch | Olema Creek |
| 23 | 4 | Marin -1 – PM 18.69 | 706078 | McCurdy Creek | Pine Gulch Creek (Bollinas Lagoon) |
| 24 | 4 | Marin – 1 – PM 18.69 | 706079 | North Fork McCurdy Creek | McCurdy Creek/ Pine Gulch Creek |
| 25 | 4 | Napa – 29 – PM 33.17 | 705459 | Ritchie Creek | Napa River |
| 26 | 4 | Napa – 121 – PM 9.3 | 758605 | Sarco Creek | Miliken Creek |
| 27 | 4 | San Mateo – 1 – PM 4.32 | 705302 | Whitehouse Creek | Pacific Ocean |
| 28 | 4 | San Mateo – 1 – PM 22.75 | 716835 | Lobitos Creek | Pacific Ocean |
| 29 | 4 | San Mateo – 84 – PM 19.25 | 705766 | Bear Creek | San Francisquito |
| 30 | 4 | San Mateo – 84 – PM 19.98 | 705768 | West Union Creek | Bear Creek/San Francisquito Creek |
| 31 | 5 | San Luis Obispo – 1 – PM 22.8 | 700040 | Pennington Creek | Chorro Creek |
| <u>32</u> | <u>5</u> | <u>Santa Barbara – 101 – PM 49.6</u> | <u>706388</u> | <u>Gaviota Creek</u> | <u>Pacific Ocean</u> |

⁷ All projects that are bold and underlined are new to Table 4, for the 2014 Fish Passage Annual Report.

| Map # | Caltrans District | County – Route – Post Mile | PAD ID # | Stream Name | Tributary to |
|-----------|-------------------|--------------------------------------|---------------|----------------------------------|--------------------------|
| <u>33</u> | <u>5</u> | <u>Santa Barbara – 192 – PM 3.39</u> | <u>706538</u> | <u>Mission Creek⁸</u> | <u>Pacific Ocean</u> |
| <u>34</u> | <u>5</u> | <u>Santa Cruz – 1 – PM 31.55</u> | <u>732371</u> | <u>Scott Creek</u> | <u>Pacific Ocean</u> |
| <u>35</u> | <u>5</u> | <u>Santa Cruz – 1 – PM 36.3</u> | <u>731839</u> | <u>Waddell Creek</u> | <u>Pacific Ocean</u> |
| <u>36</u> | <u>7</u> | <u>Los Angeles 1 – PM 40.99</u> | <u>716891</u> | <u>Topanga Creek</u> | <u>Pacific Ocean</u> |
| 37 | 7 | Los Angeles – 1 PM 50.3 | 705781 | Solstice Creek | Pacific Ocean |
| <u>38</u> | <u>7</u> | <u>Los Angeles 1 – PM 54.97</u> | <u>716906</u> | <u>Zuma Creek</u> | <u>Pacific Ocean</u> |
| <u>39</u> | <u>7</u> | <u>Ventura – 1 – PM 1.23</u> | <u>723563</u> | <u>Little Sycamore Creek</u> | <u>Pacific Ocean</u> |
| <u>40</u> | <u>7</u> | <u>Ventura – 1 – PM 4.5</u> | <u>723529</u> | <u>Big Sycamore Creek</u> | <u>Pacific Ocean</u> |
| <u>41</u> | <u>7</u> | <u>Ventura – 33 – PM 24.17</u> | <u>713767</u> | <u>North Fork Matilija Creek</u> | <u>Ventura River</u> |
| <u>42</u> | <u>7</u> | <u>Ventura – 33 – PM 34.5</u> | <u>723804</u> | <u>Burro Creek</u> | <u>Sespe Creek</u> |
| <u>43</u> | <u>7</u> | <u>Ventura – 126 – PM 26.48</u> | <u>713878</u> | <u>Hopper Canyon Creek</u> | <u>Santa Clara Creek</u> |
| <u>44</u> | <u>7</u> | <u>Ventura – 150 – PM 22.8</u> | <u>700083</u> | <u>Lion Creek</u> | <u>Sespe Creek</u> |
| <u>45</u> | <u>7</u> | <u>Ventura – 150 – PM 28.48</u> | <u>705162</u> | <u>Sissar Creek</u> | <u>Santa Paula Creek</u> |
| 46 | 11 | San Diego – 76 – PM 29.5 | 712680 | Pauma Creek | San Luis Rey River |
| 47 | 11 | San Diego – 76 – PM 45.5 | 735076 | Wigham Creek | San Luis Rey River |
| <u>48</u> | <u>12</u> | <u>Orange – 5 – PM 11.30</u> | <u>706807</u> | <u>Trabuco Creek</u> | <u>San Juan Creek</u> |

⁸ Pismo Creek (District 5) was removed from the priority list. Investigations have determined that the state highway is not a barrier to fish. The identified barrier is actually a Department of Water Resources feature adjacent to the state highway. Mission Creek was added to the list to replace Pismo Creek.

Figure 4 - Priority Fish Passage Barriers for Remediation



Appendix A – Completed Fish Passage Remediations

Senate Bill 857 was enacted into law effective January 1, 2006. Appendix A is a list of all fish passage barriers that have been remediated on the state highway system. The below table lists all anadromous barriers that have been remediated, from the time that SB 857 was enacted, until the end of the reporting period for this report, (December 31, 2014).

| Appendix A – Completed Fish Passage Remediations | | | | | | |
|---|-----------------|--------------------------------|-----------------|--------------------|---------------------------------|------------------------------|
| Map # | District | County-Route- Post mile | Pad ID # | Stream Name | Project Name | Year Barrier Resolved |
| 1 | 1 | Del Norte- 101-PM 43.7 | 715563 | Lopez Creek | Smith River Widening | 2009 |
| 2 | 1 | Del Norte- 197-PM 2.12 | 720982 | Peacock Creek | Peacock Creek Emergency | 2013 |
| 3 | 1 | Humboldt-101- PM 40.12 | 722460 | Chadd Creek | Chadd Creek Fish Passage | 2006 |
| 4 | 1 | Humboldt-101- PM 115.3 | 737005 | Unnamed Tributary | Stone Lagoon | 2007 |
| 5 | 1 | Humboldt-169-PM 22.37 | 706198 | Cappell Creek | Four Bridges Project | 2011 |
| 6 | 1 | Humboldt-299-PM 4.2 | 716742 | Hall Creek | Mitigation Mad River Bridge | 2013 |
| 7 | 1 | Mendocino-1-PM 92.8 | 706958 | Dunn Creek | 10 Mile Bridge Mitigation | 2013 |
| 8 | 1 | Mendocino-101 – PM 81.4 | 706986 | Rattlesnake Creek | Rattlesnake Creek | 2009 |
| 9 | 1 | Mendocino -101 – PM 83.99 | 706987 | Rattlesnake Creek | Rattlesnake Creek Fish Passage | 2013 |
| 10 | 1 | Mendocino -101 – PM 99.0 | 707115 | Red Mountain Creek | Confusion Hill Mitigation | 2010 |
| 11 | 1 | Mendocino -128 – PM 49.66 | 707220 | Edwards Creek | Edwards Creek Fish Passage | 2011 |
| 12 | 1 | Mendocino -128 – PM 39.95 | 713145 | John Hatt Creek | Beebe Storm Damage | 2011 |
| 13 | 2 | Shasta - 299 – PM 20.7 | 737289 | Salt Creek | Salt Creek Fish Passage Project | 2007 |

| Map # | District | County-Route- Post mile | Pad ID # | Stream Name | Project Name | Year Barrier Resolved |
|------------------|-----------------|---|----------------------|---|--|-----------------------|
| <u>14</u> | <u>2</u> | <u>Shasta – 299 – PM 32.2</u> | <u>737295</u> | <u>Yank /Lemm Creek Bridge</u> | <u>Yank Creek/Lemm Creek Bridge⁹</u> | <u>2014</u> |
| <u>15</u> | <u>2</u> | <u>Siskiyou - 96 – PM 56.0</u> | <u>707168</u> | <u>Fort Goff Creek</u> | <u>Fort Goff Creek Fish Passage</u> | <u>2014</u> |
| 16 | 2 | Siskiyou - 96 – PM 65.4 | 707147 | O’Neil Creek | O’Neil Creek Fish Passage | 2008 |
| 17 | 2 | Tehama - 5 – PM 16.9 | 737006 | Elder Creek | Elder Creek Scour Mitigation | 2007 |
| 18 | 2 | Tehama - 5 – PM 28.1 | 737007 | Dibble Creek | Dibble Creek Scour Mitigation | 2007 |
| 19 | 2 | Tehama - 99 – PM 14.0 | 737012 | Craig Creek | Craig Creek and Sunset Canal Bridges Project | 2011 |
| 20 | 2 | Tehama - 99 – PM 15.6 | 737013 | Sunset Canal | Sunset Canal Bridge | 2010 |
| 21 | 4 | Napa - 121 – PM 1 | 733333 | Huichica Creek | Duhig Road Project | 2010 |
| 22 | 5 | Santa Barbara - 101 – PM 33.9 | 707398 | El Capitan Creek | El Capitan Creek | 2007 |
| <u>23</u> | <u>5</u> | <u>Santa Barbara – 101 – PM 38.3</u> | <u>707403</u> | <u>Tajiguas Creek</u> | <u>Tajiguas Creek</u> | <u>2014</u> |
| 24 | 5 | Santa Barbara - 101 – PM 41.0 | 707405 | Arroyo Hondo Creek | Arroyo Hondo | 2008 |
| 25 | 5 | Santa Barbara - 101 – PM 47.2 | 706669 | Gaviota Creek | Gaviota Creek | 2008 |
| 26 | 5 | Santa Cruz -1 – PM 10.0 | 706703 | Valencia Creek | Tributary to Aptos Creek (culvert 1) | 2007 |
| <u>27</u> | <u>5</u> | <u>Santa Cruz – 1 – PM 10.0</u> | <u>706704</u> | <u>Valencia Creek¹⁰</u> | <u>Tributary to Aptos Creek (culvert 2)</u> | <u>2007</u> |
| 28 | 5 | Santa Cruz - 1 – PM 17.4 | 735367 | Branciforte Creek | Hwy 1 Remediation | 2007 |
| <u>29</u> | <u>5</u> | <u>Santa Cruz - 1 – PM 17.42</u> | <u>735366</u> | <u>Carbonera Creek</u> | <u>Hwy 1 Remediation</u> | <u>2007</u> |
| 30 | 7 | Ventura - 150 – PM 28.7 | 723744 | Santa Paula Creek | Santa Paula Creek | 2012 |

⁹ Projects that are bold and underlined are new to the Completed Table (Appendix A), for the 2014 Fish Passage Annual Report.

¹⁰ Both Valencia Creek and Carbonera Creek were remediated in 2007, but have not been previously reported to Legislature.