

FISH PASSAGE INCIDENTAL REPORT (First Pass Data Sheet Version 3)

including new Pacific Lamprey and mussel assessment fields

This form is intended to be used for rapid barrier inventorying and barrier data collection. It is not intended for barrier passage assessment and is not meant to replace any existing barrier assessment protocols.

*** Please fill Section I, II and IV, even when no barriers found!**

I. GENERAL

Surveyor: _____ Organization: _____ Date: _____ Time: _____

II. LOCATION

Stream Name: _____ Tributary To: _____
Latitude: _____ Longitude: _____ Quad Name: _____
Barrier or Structure Found?: Yes No Stream Segment Surveyed (ft): _____
Bank Location (looking downstream): Left Right Both Reach Gradient (ratio or percent slope): _____
Flow Conditions: Continuous Isolated pools Dry Known to be: intermittent ephemeral
Road Name: _____ Milepost: _____
Land Owner: _____ Structure Owner: _____
Photos Taken: Inlet Outlet Other
Description: _____

III. STRUCTURE

Structure Type: Diversion Dam Culvert Fishway/ladder Bridge Ford Natural Other
Description: _____
Passage Status: Salmonids Yes No Partial Other Fish sp. _____ Yes No Partial
Lamprey (climbing) Yes No Partial Total barrier Yes No

IV. AQUATIC ORGANISMS

Survey Downstream? No Visual (walking) Snorkel Electrofish Lamprey Mussels Other
Survey Upstream? No Visual (walking) Snorkel Electrofish Lamprey Mussels Other
Observed Downstream? Chinook Coho Steelhead/Rainbow Ammocoete Lamprey adult Mussels Other
Observed Upstream? Chinook Coho Steelhead/Rainbow Ammocoete Lamprey adult Mussels Other
Species notes: _____

V. DIVERSION

Diversion Type (see Dam for structure type):
Pump: Vertical Submersible Slant Centrifugal Other Pump Running? Yes No
Other: Floodgate Siphon Canal Infiltration chamber Other
Pipe or Conveyance Size: < 1 ft 1 - 2 ft > 2 ft Diversion Flow Rate (cfs) _____
Screened? Yes No Aperture Size (in) _____ Protective of: Larvae Adult Trash
Type: Fixed Travel Louvers Grate Other

VI. DAM

Dam Type: Earth Rock/cement Board Weir Log Weir Inflatable Sheetpile Other _____
Usage: Seasonal Permanent Dam Height (ft): _____ Dam Width (ft): _____ Passage Facility? Yes No

VII. CULVERT

Culvert Type: Box Circular Open-bottom arch Pipe arch Other _____ Unmaintained
Culvert Material: Concrete Metal Plastic Log/wood Other _____
Number of Barrels/Pipes: _____ Weirs/Baffles? Yes No Channel Width (ft): _____
Culvert Diameter: ≤ 2 ft > 2 ft Culvert Height (ft): _____ Culvert Width (ft): _____
Outlet Drop Height: 0 ft (submerged) < 1 ft 1 - 3 ft > 3 ft Actual Height (in): _____

VIII. BRIDGE

Bridge Type: Free span Instream structure Active Abandoned
Apron?: Yes No Drop?: Flush with bottom Sloping Shelf Height of drop (in): _____

IX. NATURAL

Natural Barrier Type: Waterfall Cascade Grade Landslide Log jam Other _____
Waterfall Drop: ≤ 8 ft > 8 ft Estimated drop to base flow water surface (ft): _____

X. ADDITIONAL NOTES

Detailed fish passage assessment needed? Yes No
Does this site need treatment? Yes No
What are specific treatment recommendations?
(Please use other side if needed for additional notes).

Initial Lamprey Assessment section:

Is one of the following true?

- A natural structure (e.g. waterfall, cascade, log-jam).
- Natural bottom thru culvert or under bridge.
- Structure submerged during most flows.
- Diversion without instream structure blocking upstream passage.
- All stream reaches upstream of gradient > 2% and lacking fines.
 Note: Lower gradient reaches could exist considerably upstream and provide habitat.
- Barrier site outside the current and historical range of Pacific Lamprey,
 Note: <https://apps.wildlife.ca.gov/bios/?al=ds69> and may be present in smaller tributaries of drainages identified in this distribution layer.

____ If any boxes are checked, then there is **no further Lamprey Passage Assessment needed.**

If surveyor disagrees (see features below), ____ reasoning:

Structural features that may challenge lamprey: perched culverts, acute edges, u-channels, baffles, weirs or other structures in the structure, overhangs, near-bottom velocities > 1 m/s, porous surface (grates), gaps or holes, lack of subaerial routes, confused turbulence, seams/cracks/gaps that break suction on otherwise smooth surfaces, heavy moss/algae, repeated challenges, seasonally dry conditions at site or upstream.

Send comments and completed forms to:

Anne Elston, PSMFC, 1010 Riverside Pkwy, West Sacramento, CA 95605, Email: Anne.Elston@wildlife.ca.gov

Lamprey questions:

Damon Goodman USFWS, 1655 Heindon Road, Arcata, CA, 95521 damon_goodman@fws.gov
Stewart Reid, Western Fishes, 2045 East Main, Ashland OR 97520 WesternFishes@opendoor.com

Mussel questions:

Alex Jones USFWS, 2800 Cottage Way, Sacramento, CA 95825 alexander_c_jones@fws.gov

INSTRUCTIONS TO FISH PASSAGE INCIDENTAL REPORT

I. GENERAL

Surveyor - Enter the names of people conducting the survey.

Date/Time - Enter the day's date (mm/dd/yy) and the time of the survey (24hr).

Organization - Enter the organization name.

Flow Conditions:

- **Continuous** - Free flowing water.
- **Isolated pools** - Pools are present but they are not connected by free flowing water.
- **Dry** - No water at all.

II. LOCATION

Latitude/Longitude - North American Datum 1983.

Quad Name - U.S.G.S. 7.5 minute quadrangle name, if known.

Stream Name - Enter the stream name as it appears on the 7.5 minute quadrangle map. If official name not available, enter local name or 'unnamed'.

Tributary To - Enter the name of the receiving stream, river lake or ocean.

Reach Gradient - ratio or percent slope within barrier reach

Barrier(s) Found - Mark No if barrier(s) not found. If a barrier is found, please fill in the rest of the form.

Stream Segment Surveyed - Record the length of the surveyed stream segment or reach where no barriers found.

Bank Location - Where in the stream the structure is located, looking downstream.

Road Name - Enter road name and/or number.

Milepost - Generally, both State and County roads have markers located every half mile indicating the road/highway number, county it is located in, and the postmile or kilopost location of the marker. For north/south roads, the markers start at 0.00 from the southern end and increase as you travel north. For west/east roads, the markers start at 0.00 from the western end and increase as you travel east.

Photos Taken - Mark when pictures of the inlet, outlet or other parts of a barrier were taken.

Photos Description/Numbers - Briefly describe each picture, orientation (eg. looking upstream) and number/filename.

Photos should include downstream entrance to structure, upstream exit, interior of culverts (esp. if any structural features) and any features of concern. Please provide photos with this form.

Land Owner - May be private, public, tribal, or unknown. If known, put down owners name and contact info.

Structure Owner - May be different from land owner- if known, put down owner's name and contact info.

III. STRUCTURE

Structure Type:

- **Diversion** - A man-made structure or installation for transferring water from a stream by a pipe, canal, well, or other conduit to another watercourse or to the land. Surface diversions fall into two general categories: pump and gravity.
Note: the diversion is distinct from the structure (dam) that impounds or directs the water.
- **Dam** - A man-made barrier constructed across a stream to control water flow or create a reservoir.
- **Culvert** - A pipe that allows streams, rivers, or runoff to pass under a road.
- **Bridge** - A structure conveying a road or pathway over a stream, river, or a depression.
- **Ford** - A road crossing that allows the river to run over a road (Arizona crossing).
- **Natural** - A natural barrier, such as waterfall, beaver dam, insufficient flow, landslide, velocity, etc.
- **Other** - Anything that is not described in the above categories.

Description - Any additional significant details about the structure.

Passage Status - Based on field observations describe the impact on fish passage (estimate to your best judgment).

Jumping (e.g. salmonids, pikeminnows), Swimming (e.g. suckers, lampreys, dace), Climbing (Pacific Lamprey).
Total barriers clearly block any passage (e.g. large dams without passage, high perched culverts).

IV. AQUATIC ORGANISMS

Survey - Was a biological survey done? upstream or downstream of the barrier? and of what kind? Lamprey surveys target ammocoetes and require specialized slow-pulse electrofishing equipment or settings. Mussel surveys can be done

with snorkel or view scope and focus on scanning substrate for individuals.

Species Observed - What aquatic species were observed, as this may inform the passage needs or status of the site.

Identifying Species and Other Information

Freshwater Mussels: <https://xerces.org/publications/guidelines/conserving-gems-of-our-waters>

Pacific Lamprey: <https://www.fws.gov/pacificlamprey/mainpage.cfm>

Salmon, Sturgeon, Trout and Pacific Lamprey: <https://wildlife.ca.gov/Conservation/Fishes>

V. DIVERSION

Diversion Type - Note: this refers to the extraction method, not the structure (see below under Dams).

Pumps:

- **Vertical** - The pump is vertically oriented and pulls water straight up.
- **Submersible** - Pump for diverting water is submerged under the water or bank and is not visible.
- **Slant** - Both the pump and intake pipe are angled at a slant up the river bank.
- **Centrifugal** - Old style pump with visual appearance of a snail shell (spiral or circular).
- **Pump other** - Water diversion where type of pump used is unknown but use of a pump is certain.
- **Pump Running** - Check Yes if the diversion was running in the time of the survey.

Floodgate - Water diversion where water is diverted by gravity flow and controlled via a screwgate.

Siphon - Common in the Delta, not usually seen anywhere else.

Canal - Water is diverted into a gravity fed channel

Infiltration chamber - Water is passed through the stream bed into pipe conveyance.

Other - Anything that is not described in the above categories.

Pipe or Conveyance Size - Inside diameter of the diversion intake, canal or drain.

Screened - Fish screens are supposed to keep fish from being taken out of a stream or river by a water diversion.

Screen Aperture - If screened, what is the gap/mesh in the screen.

Protective of - Is the screen design intended to exclude larval fish, adult fish, or general debris (e.g. trash rack)

Screen Type - What type of screening is provided: a moving screen, fixed, louvered design or simple grate?

VI. DAM

Dam Type - Specify the material the dam is made from.

Dam Width/Dam Height - Provide the dam's dimensions in feet if possible.

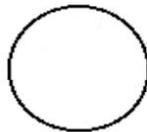
Seasonal/Permanent - Is the dam operational all year long or seasonally?

Facility - Is there a fish ladder, natural fishway bypass, or some other structure in place to improve fish passage?

VII. CULVERT



Box



Circular



Open-Bottom Arch



Pipe Arch

Culvert Type:

Abandoned/Unmaintained - Check if the culvert appears to be abandoned and/or not maintained.

Culvert Material - Check box that most accurately describes the culvert's construction material. Check multiple boxes if the culvert is composed of two or more materials.

- **Metal** - Corrugated Metal (Steel) Pipe (CMP) = single sheet pipe of corrugated galvanized steel; Structural Steel Plate (SSP) = multiple plates of corrugated galvanized steel bolted together, and corrugated aluminum.
- **Plastic** - Culvert of various types of high-impact plastics, usually with shallow corrugations.
- **Concrete** - Generally no corrugations. Mostly box culverts, some circular and arch pipes are concrete.
- **Log/wood** - Mostly old log stringer bridges and Humboldt crossings, also box and old circular pipe.
- **Other** - Explain if none of the materials accurately describes the culvert.

Number of Barrels/Pipes - If a culvert consists of numerous barrels or pipe, list the total number.

Weirs/ Baffles - These are generally structures that are added as a retrofit to a culvert (baffles), or placed in the stream (weirs) to reduce velocity or improve fish passage in some way.

Channel Width - The active channel width is identified by locating the height of annual scour along banks developed by

annual fluctuations of stream flow.

Culvert Diameter - Check culvert diameter (larger or smaller than 2 ft). If multiple culverts, use largest.

Culvert Height/Width - Provide the culvert dimensions. If multiple culverts, enter the size of the largest one.

Outlet Drop Height - Measure the height at the center of the culvert outlet (e.g. downstream end of the culvert) to the water surface at estimated base flow.

VIII. BRIDGE

Bridge Type:

- **Free span** - No part of the bridge is in the stream.
- **Instream structure** - An abutment, pier, or some other part of the bridge is in the stream.
- **Active/Abandoned** - Is the bridge still utilized for vehicular or pedestrian traffic, or is it abandoned?
- **Apron** - A protective shield, usually made of concrete, to protect against erosion, may be around piers or abutments or span the entire creek.
- **Drop** - Is there a drop or slope from the apron to the downstream streambed?

IX. NATURAL

Natural Barrier Type:

- **Waterfall** - A sudden, nearly vertical drop in a stream, as it flows over rock.
- **Cascade** - A waterfall or steep rocky feature without a specific vertical drop
- **Grade** - Topography of streambed is too steep for fish to ascend. Specify details of species and lifestages the grade is too steep for in the notes section, and/or estimate the slope.
- **Landslide** - Movement of earth down a steep slope into a stream that blocks fish passage.
- **Log jam** - Log debris in a stream such that it blocks fish passage.
- **Waterfall Drop** - Check the box and estimate the actual height of drop to the water surface at baseflow.

X. ADDITIONAL NOTES

Please provide any additional notes and comments that may help to describe the structure, to determine the need for detail fish passage assessment and needs for barrier remediation. Use other side of the form if needed.

Mail or email filled form(s) to:

Anne Elston, PSMFC, 1010 Riverside Pkwy, West Sacramento, CA 95605, Email: Anne.Elston@wildlife.ca.gov

Lamprey questions:

Damon Goodman USFWS, 1655 Heindon Road, Arcata, CA, 95521 damon_goodman@fws.gov
Stewart Reid, Western Fishes, 2045 East Main, Ashland OR 97520 WesternFishes@opendoor.com

Mussel questions:

Alex Jones, USFWS, 2800 Cottage Way, Sacramento, CA 95825 alexander_c_jones@fws.gov