



## Oregon Administrative Rules Oregon Department of Fish and Wildlife

### DIVISION 412 FISH PASSAGE

#### 635-412-0005

##### Definitions

- (1) For the purposes of OAR 635-412-0010 through OAR 635-412-0040 the following definitions shall apply.
- (2) "Active channel width" means the stream width between the ordinary high water lines, or at the channel bankfull elevation if the ordinary high water lines are indeterminate.
- (3) "Artificial obstruction" means any dam, diversion, dike, berm, levee, tide or flood gate, road, culvert or other human-made device placed in the waters of this state that precludes or prevents the migration of native migratory fish.
- (4) "Attraction flow" means the flow that emanates from or near a fishway entrance in sufficient quantity, velocity, and location to attract upstream migrants into the fishway, which can consist of gravity flow from the fish ladder and auxiliary water system flow added in or near the lower ladder.
- (5) "Bankfull elevation" means the point on a stream bank at which overflow into a floodplain begins.
- (6) "Bed" or "bed and banks" means the physical container of the waters of this state, bounded on freshwater bodies by the ordinary high water line or bankfull stage, and on bays and estuaries by the limits of the highest measured tide.
- (7) "Channel" means a waterway that periodically or continuously contains moving waters of this state and has a definite bed and banks that serve to confine the water.
- (8) "Commission" means the Oregon Fish and Wildlife Commission.
- (9) "Construction" means:
- (a) Original construction;
  - (b) Major replacement, which includes:
    - (A) for dams and diversions, excavation or replacement of 30 percent by structure volume of the dam, including periodic or seasonal replacements, unless:
      - (i) only checkboards are replaced, or
      - (ii) fish passage approval has already been obtained in writing from the Department for expected replacement;
    - (B) for tide gates and flood gates:
      - (i) cumulative replacement of over 50 percent of the gate material, or,
      - (ii) cumulative removal, fill, replacement, or addition of over 50 percent of the structure supporting the gate, excluding road-stream crossing structures;
    - (C) for dikes, berms, levees, roads, or other artificial obstructions that segment estuaries, floodplains, or wetlands:
      - (i) activities defined under OAR 635-412-0005(9)(d) in all locations where current channels cross the artificial obstruction segmenting the estuary, floodplain, or wetland, or
      - (ii) the cumulative removal, fill, replacement, or addition of over 50 percent by volume of the existing material directly above an historic channel or historically-inundated area; and
    - (D) for other artificial obstructions, the cumulative removal, fill, replacement, or addition of over 50 percent of the structure comprising the artificial obstruction to native migratory fish migration;
  - (c) Structural modifications that increase storage or diversion capacity; or
  - (d) For purposes of culverts, installation or replacement of a roadbed or culvert, further defined as:
    - (A) roadbed installation or replacement at culverts includes any activity that:
      - (i) creates a road which crosses a channel,
      - (ii) widens a roadfill footprint within a channel, or
      - (iii) fills or removes over 50 percent by volume of the existing roadbed material directly above a culvert, except when this volume is exclusively composed of the top 1 foot of roadbed material;
    - (B) culvert installation or replacement includes any activity that:
      - (i) installs or constructs a new culvert, overflow pipe, apron, or wingwall within a channel,
      - (ii) extends existing culverts, aprons, or wingwalls within a channel, except one-time placements of culvert ends which do not extend greater than 1 foot beyond the adjacent road footprint in place prior to August 2001,
      - (iii) cumulatively through time makes significant repairs or patches to over 50 percent of the linear length of a culvert,
      - (iv) replaces any part of a culvert, except ends which become misaligned or eroded and which are replaced to their original configuration,
      - (v) at any point along the linear length of a culvert, reduces the entire inside perimeter of the culvert, or



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(vi) makes replacements, repairs, patches, or modifications to an existing culvert that are different than the original configuration and which reduce any level of fish passage for native migratory fish with current access, as determined by the Department, to the culvert.

(10) "Dam" means a structure, or group of structures with different functions, spanning or partially-spanning a stream in one location in order to pool water, facilitate the diversion of water, or raise the water surface elevation.

(11) "Department" means the Oregon Department of Fish and Wildlife.

(12) "Director" means the Director of the Oregon Department of Fish and Wildlife.

(13) "Design streamflow range" means the range of flows within a stream, bracketed by the Low Fish Passage Design Flow and the High Fish Passage Design Flow, for which a fishway shall provide fish passage.

(14) "Emergency" means unforeseen circumstances materially related to or affected by an artificial obstruction that, because of adverse impacts to a population of native migratory fish, requires immediate action.

(15) "Estuary" means a body of water semi-enclosed by land and connected with the open ocean within which salt water is usually diluted by fresh water derived from the land. "Estuary" includes all estuarine waters, tidelands, tidal marshes and submerged lands extending upstream to the head of tidewater. However, for the purposes of these rules, the Columbia River Estuary extends to the western edge of Puget Island.

(16) "Exclusion barrier" means a structure placed that prevents fish passage for the benefit of native migratory fish.

(17) "Experimental fish passage structure" means a fish passage structure based on new ideas, new technology, or unique, site-specific conditions determined by the Department to not be covered by existing fish passage criteria but to have a reasonable possibility of providing fish passage.

(18) "Fish passage" means the ability, by the weakest native migratory fish and life history stages determined by the Department to require passage at the site, to move volitionally, with minimal stress, and without physical or physiological injury upstream and downstream of an artificial obstruction.

(19) "Fish passage structure" means any human-built structure that allows fish passage past an artificial obstruction, including, but not limited to, fishways and road-stream crossing structures such as culverts and bridges.

(20) "Fishway" means the set of human-built and/or operated facilities, structures, devices, and measures that together constitute, are critical to the success of, and were created for the sole purpose of providing upstream fish passage at artificial or natural obstructions which create a discontinuity between upstream and downstream water or bed surface elevations.

(21) "Fishway entrance" means the component of a fishway that discharges attraction flow into the tailrace and where upstream migrant fish enter the fishway.

(22) "Fishway pools" means discrete sections within a fishway separated by overflow weirs or non-overflow walls that create incremental water surface elevation gains and dissipate energy.

(23) "Floodplain" means that portion of a river valley, adjacent to the channel, which is built of sediments deposited during the present regimen of the stream and which is covered with water when the waterway overflows its banks at flood stage.

(24) "Forebay" means the water impounded immediately upstream of an artificial obstruction.

(25) "Fundamental change in permit status" means a change in regulatory approval for the operation of an artificial obstruction where the regulatory agency has discretion to impose additional conditions on the applicant, including but not limited to licensing, relicensing, reauthorization or the granting of new water rights, but not including water right transfers or routine maintenance permits unless they involve construction or abandonment of an artificial obstruction.

(26) "High fish passage design flow" means the mean daily average stream discharge that is exceeded 5 percent of the time during the period when the Department determines that native migratory fish require fish passage.

(27) "Historically" means prior to 1859 (statehood).

(28) "Inflow" means surface movement of waters of this state from a lower ground surface elevation to a higher ground surface elevation or away from the ocean.

(29) "In-proximity" means within the same watershed or water basin, as defined by the Oregon Water Resources Department, and having the highest likelihood of benefiting the native migratory fish populations, as defined by the Oregon Department of Fish and Wildlife, directly affected by an artificial obstruction.

(30) "Low fish passage design flow" means the mean daily average stream discharge that is exceeded 95 percent of the time, excluding days with no flow, during the period when the Department determines that native migratory fish require fish passage.

(31) "Mitigation" means alternatives to providing fish passage at an artificial obstruction as per ORS 509.585.

(32) "Native migratory fish" means native fish (as defined under OAR 635-007-0501) that migrate for their life cycle needs. These fish include all sub-species and life history patterns of the following species listed by scientific



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name in use as of 2005. Common names are provided for reference but are not intended to be a complete listing of common names, sub-species, or life history patterns for each species.

- (a) *Acipenser medirostris* ..... Green Sturgeon
  - (b) *Acipenser transmontanus* ..... White Sturgeon
  - (c) *Amphistichus rhodoterus* ..... Redtail surfperch
  - (d) *Catostomus columbianus* ..... Bridgelip sucker
  - (e) *Catostomus luxatus/Deltistes luxatus* ..... Lost River sucker
  - (f) *Catostomus macrocheilus* ..... Largescale sucker
  - (g) *Catostomus microps* ..... Modoc sucker
  - (h) *Catostomus occidentalis* ..... Goose Lake sucker
  - (i) *Catostomus platyrhynchus* ..... Mountain sucker
  - (j) *Catostomus rimitulus* ..... Klamath smallscale sucker
  - (k) *Catostomus snyderi* ..... Klamath largescale sucker
  - (l) *Catostomus tahoensis* ..... Tahoe sucker
  - (m) *Catostomus warnerensis* ..... Warner sucker
  - (n) *Chasmistes brevirostris* ..... Shortnose sucker
  - (o) *Hypomesus pretiosus* ..... Surf smelt
  - (p) *Lampetra ayresi* ..... River lamprey
  - (q) *Lampetra lethophaga* ..... Pit-Klamath lamprey
  - (r) *Lampetra minima* ..... Miller Lake lamprey
  - (s) *Lampetra similes* ..... Klamath River lamprey
  - (t) *Lampetra tridentata* ..... Pacific lamprey
  - (u) *Oncorhynchus clarki* ..... Coastal, Lahontan and West Slope cutthroat trout
  - (v) *Oncorhynchus keta* ..... Chum salmon
  - (w) *Oncorhynchus kisutch* ..... Coho salmon
  - (x) *Oncorhynchus mykiss* ..... Steelhead, Rainbow and Redband trout
  - (y) *Oncorhynchus nerka* ..... Sockeye/Kokanee salmon
  - (z) *Oncorhynchus tshawytscha* ..... Chinook salmon
  - (aa) *Prosopium williamsoni* ..... Mountain whitefish
  - (bb) *Ptychocheilus oregonensis* ..... Northern pikeminnow
  - (cc) *Ptychocheilus umpqua* ..... Umpqua pikeminnow
  - (dd) *Salvelinus confluentus* ..... Bull trout
  - (ee) *Spirinchus thaleichthys* ..... Longfin smelt
  - (ff) *Thaleichthys pacificus* ..... Eulachon
- (33) "Net benefit" means an increase in the overall, in-proximity habitat quality or quantity that is biologically likely to lead to an increased number of native migratory fish after a development action and any subsequent mitigation measures have been completed.
- (34) "Ordinary high water line" (OHWL) means the line on the bank or shore to which the high water ordinarily rises annually in season. (Note: see OAR 141-085-0010 for physical characteristics that can be used to determine the OHWL in the field.)
- (35) "Oregon Plan" means the guidance statement and framework described in ORS 541.405.
- (36) "Over-crowding" means fish density within a pool's wetted volume is such that there is less than 0.25 cubic feet of water per pound of fish for the maximum number of fish expected to be present within the pool at the same time, as determined by the Department.
- (37) "Road" means a cleared or built surface, and associated materials or measures for support and safety, used for the purpose of motorized or non-motorized movement between different locations.
- (38) "Roadfill footprint" means the area occupied by soil, aggregate, and/or other materials or structures necessary to support a road, including, but not limited to, appurtenant features such as wing walls, retaining walls, or headwalls.
- (39) "Stream" means a body of running waters of this state moving over the surface of the land in a channel or bed including stream types classified as perennial or intermittent and channelized or relocated streams.
- (40) "Sub-basin" means a 4th-field hydrologic unit as defined by the U.S. Geological Survey.
- (41) "Tailrace" means the water immediately downstream of an instream structure.
- (42) "Temporary" means in place less than the in-water work period defined by the Department for a particular location.
- (43) "Trap" means the set of human-built and/or operated facilities, structures, devices, and measures that hold fish and prevent them from passing volitionally.



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(44) "Unforeseen circumstances" means:

(a) An event that causes an existing human-made structure in the waters of the state which provides fish passage to become an artificial obstruction, or

(b) New fish population information indicating that an existing artificial obstruction is placing a local native migratory fish population in jeopardy.

(45) "Volitionally" means with minimal delay and without being trapped, transferred, or handled by any person, unless specifically allowed under OAR 635-412-0035(6).

(46) "Waters of this state" means natural waterways including all tidal and non-tidal bays, intermittent and perennial streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and non-navigable, including that portion of the Pacific Ocean that is within the boundaries of Oregon.

(47) "Wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Stat. Auth.: ORS 496.138

Stats. Implemented: ORS 509.580, ORS 509.585, ORS 509.610 and ORS 509.625

Hist.: Adopted 1-6-06, f. & certified ef. 1-9-06

### **635-412-0010**

#### **Fish Passage Task Force**

(1) The Director shall appoint nine members to constitute the Fish Passage Task Force.

(2) Three members shall represent interests subject to the obligation to install passage at facilities they install, own or operate; three members shall represent fishing, environmental or conservation interests, and three members shall represent the general public.

(3) Members shall serve four-year terms, and shall be eligible for re-appointment to the task force, except that the initial designation of members shall appoint members of each interest group to a three year, four year or five year term to establish a staggered system of new appointments for each interest group's members.

(4) The Task Force shall:

(a) serve as the public advisory committee and advise the Director and Commission regarding rulemaking to implement the fish passage and waiver requirements;

(b) prioritize projects from the statewide inventory of artificial dams and obstructions for purposes of enforcement;

(c) recommend to the Director and Commission appropriate levels of funding and special conditions applicable to projects installing passage or alternatives to passage resulting in a net benefit to native migratory fish;

(d) select one of its members to serve as chair and one as vice chair of the Task Force;

(e) review and recommend to the Commission which projects should be exempt, and changes to the list of projects exempt from passage requirements under Section 8 of Section 2 of HB 3002 (2001);

(f) report semiannually to the joint legislative committee created under ORS 171.551, or to the appropriate interim legislative committee with responsibility for salmon restoration or species recovery, advising the committee on matters related to fish passage;

(g) review applications for waivers of the fish passage requirement, and advise the Commission as to whether alternative measures result in a net benefit to native migratory fish;

(h) perform such other duties relating to fish passages requested by the Director or Commission;

(i) meet at such times and places as may be determined by the chair or by a majority of members of the task force.

(5) The Department's Fish Passage Coordinator shall serve as staff for the task force.

(6) The chair of the Task Force shall conduct the meetings of the task force, serve as the main contact point between the Department and Commission and the Task Force and perform such other duties as the Task Force shall set. The vice chair of the task force shall serve as chair if the chair is unavailable to carry out the duties of chair.

(7) Members of the Task Force may not receive compensation for services as a member of the Task Force; however, in accordance with ORS 292.495, a member of the Task Force may receive reimbursement for actual and necessary travel or other expenses incurred in the performance of official duties.

Stat. Auth.: HB 3002

Stats. Implemented: HB 3002

Hist.: Adopted 1-24-02, ef. upon filing



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### 635-412-0015

#### Prioritization

- (1) The Department shall establish for enforcement purposes a list of priority artificial obstructions at which fish passage would provide the greatest benefit to native migratory fish.
- (2) The priority list shall be based on the needs of native migratory fish.
  - (a) The prioritization shall consider the following factors relative to each artificial obstruction for all native migratory fish currently or historically present at the artificial obstruction:
    - (A) the quantity of native migratory fish habitat which is inaccessible,
    - (B) the quality of native migratory fish habitat which is inaccessible,
    - (C) unique or limited native migratory fish habitat which is inaccessible, or should remain inaccessible for fish management purposes,
    - (D) the biological status of the native migratory fish,
    - (E) the level of fish passage currently provided at the artificial obstruction,
    - (F) the presence of other artificial obstructions upstream and downstream and the timeframe native migratory fish will be able to utilize restored passage, and
    - (G) existing agreements with the Department regarding fish passage.
  - (b) The prioritization may utilize existing Department information or professional judgment in the absence of information specific to a given site.
  - (c) The priority list shall contain one artificial obstruction per Oregon sub-basin, which shall be ranked across the state.
  - (d) The Department shall field verify the information used for prioritization prior to enforcement actions.
  - (e) The Department shall re-evaluate the priority list with the most recent information after enforcement occurs at five priority artificial obstructions or as directed by the Commission.
- (3) The Commission shall review, approve, or amend the priority list after the initial priority list is developed, when the Department re-prioritizes, and no less frequently than once every five years.
- (4) Once the Commission has approved the priority list, the Department may order a person owning or operating an artificial obstruction on the priority list who has been issued a water right, owns a lawfully installed culvert or owns another lawfully installed obstruction to install fish passage or to provide mitigation if:
  - (a) the Department can arrange for non-owner or non-operator funding of at least 60 percent of the cost for fish passage design, construction, and installation, and
  - (b) the artificial obstruction is ranked in the top ten for the state or highest within a Department Region on the priority list.
- (5) Once the Department has arranged for non-owner or non-operator funding of at least 60 percent of the cost for fish passage design, construction, and installation at an artificial obstruction the owner or operator has two years to:
  - (a) install a fish passage structure according to a fish passage plan approved by the Department, or
  - (b) provide mitigation that the Commission determines is a net benefit to native migratory fish.

Stat. Auth.: ORS 496.138

Stats. Implemented: ORS 509.585 and ORS 509.625

Hist.: Adopted 1-6-06, f. & certified ef. 1-9-06

### 635-412-0020

#### Fish Passage Approval

- (1) No person shall construct or maintain any artificial obstruction across any waters of this state that are inhabited, or were historically inhabited, by native migratory fish without providing passage for native migratory fish.
- (2) Prior to construction, fundamental change in permit status or abandonment of an artificial obstruction in any waters of this state, a person owning or operating an artificial obstruction shall obtain a determination from the Department as to whether native migratory fish are or were historically present in the waters, unless the owner or operator assumes the presence of native migratory fish.
- (3) If the Department determines, or the owner or operator assumes, that native migratory fish are or were historically present in the waters, prior to construction, fundamental change in permit status, or abandonment of the artificial obstruction the person owning or operating the artificial obstruction shall either:



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- (a) Obtain from the Department an approval determination of a fish passage plan that meets the requirements of OAR 635-412-0035 for the specific artificial obstruction.
- (b) obtain from the Department a programmatic approval of a fish passage plan for multiple artificial obstructions of the same type. The Department may also grant programmatic approval to an agent for multiple owners or operators of artificial obstructions of the same type. Programmatic approvals are only valid so long as the owner or operator complies with the conditions of the programmatic approval. The Department shall only provide programmatic approval if:
- (A) fish passage structures placed under the programmatic approval meet criteria determined by the Department,
  - (B) the owner, operator, or agent demonstrates to the Department prior experience providing or approving acceptable fish passage structures,
  - (C) the owner, operator, or agent reports installation information annually to the Department, including but not limited to the location and installation date of all fish passage structures placed under the programmatic approval,
  - (D) the owner or operator allows, or the agent requires owners or operators to allow, the Department to inspect fish passage structures placed under the programmatic approval at reasonable times, and
  - (E) the owner, operator, or agent agrees to expeditiously remedy all fish passage structures placed under the programmatic approval which the Department finds do not meet the criteria or conditions of the programmatic approval,
- (c) pursuant to ORS 527.710(6), install and maintain road-stream crossing structures on non-federal forestlands in compliance with State Board of Forestry, through the Oregon Department of Forestry, rules and guidelines. These rules and guidelines require concurrence by the Oregon Department of Fish and Wildlife that they meet the purposes of the Department's fish passage program,
- (d) obtain a waiver from fish passage requirements for the artificial obstruction as provided in OAR 635-412-0025, or
- (e) obtain an exemption from fish passage requirements for the artificial obstruction as provided in OAR 635-412-0025.
- (4) Fish passage plans shall provide for and be implemented such that fish passage is installed at the artificial obstruction prior to completion of or by the end of the same in-water work period as the action which triggered fish passage requirements under subsection (2), unless:
- (a) an owner or operator demonstrates to the Department an imminent or immediate threat to human safety which requires construction at a failed artificial obstruction prior to being able to complete the requirements of subsection (3), and the Department approves a fish passage plan in which the requirements of subsection (3) shall be met by the end of the next in-water work period or as soon as practicable. Providing passage at the time of construction is preferred,
  - (b) the Commission finds that additional time is necessary and appropriate given the size and scope of the project,
  - (c) installation begins within this period and the Department finds that additional time to complete installation is necessary and appropriate given the size and scope of the project, or
  - (d) the Department finds that additional time is necessary and appropriate as part of the terms and conditions of a negotiated settlement for a federal proceeding, or in coordination with other federal requirements.

Stat. Auth.: ORS 496.138

Stats. Implemented: ORS 509.585 and ORS 509.645

Hist.: Adopted 1-6-06, f. & certified ef. 1-9-06

### **635-412-0025**

#### **Fish Passage Waivers and Exemptions**

- (1) Waivers from fish passage requirements shall be granted for an artificial obstruction if the Commission (or Department, as applicable) determines that mitigation rather than fish passage proposed by the person owning or operating the artificial obstruction provides a net benefit to native migratory fish.
- (2) Net benefit to native migratory fish is determined by comparing the benefit to native migratory fish that would occur if the artificial obstruction had fish passage to the benefit to native migratory fish that would occur using the proposed mitigation. To qualify for a waiver of the requirement to install fish passage, mitigation shall result in a benefit to fish greater than that provided by the artificial obstruction with fish passage. The net benefit to fish determination shall be based upon conditions that exist at the time of comparison.



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(3) Waivers shall be valid so long as the owner or operator continues to provide the agreed-upon mitigation measures and until the waived artificial obstruction undergoes further construction, a fundamental change in permit status, or abandonment.

(4) The Commission (or Department as applicable) may grant exemptions from fish passage requirements at an artificial obstruction if it is determined that:

(a) a lack of fish passage has been effectively mitigated;

(b) the owner or operator has received a legal waiver for the artificial obstruction from the Commission or the Department; or

(c) there is no appreciable benefit to providing fish passage.

(5) For exemptions granted under subsection (4)(a) and (4)(b), the exemption continues only so long as the original benefit of the mitigation is maintained.

(6) The Commission shall review, at least once every seven years, exempt artificial obstructions that do not have exemption expiration date to determine whether the exemption should continue. The Commission may revoke or amend an exemption if it finds that circumstances have changed such that the basis for the exemption no longer applies. An exemption granted as a result of an action which triggered fish passage requirements under OAR 635-412-0020(2) tolls the trigger event until the exemption is revoked.

(7) To obtain a waiver or an exemption from fish passage requirements, an owner or operator of an artificial obstruction shall obtain from and submit to the Department an application for the waiver or exemption.

(8) Based on application review, verification and site-specific knowledge, Department staff shall provide a written benefit analysis of whether the waiver request meets the requirements of subsection (1) or the exemption request meets the requirements of subsections (4) and (5). If there is some level of fish passage at the artificial obstruction, but it does not meet the requirements of OAR 635-412-0035, that passage shall be factored into the Department's net benefit analysis, allowing a reduction in required mitigation.

(9) To receive a waiver, or an exemption under subsection (4)(a), an owner or operator of an artificial obstruction shall enter an agreement with the Commission (or Department as applicable) that clearly describes timelines, duties, responsibilities, and options regarding the mitigation. The agreement shall state that the mitigation shall be completed prior to completion of or by the end of the same in-water work period as the action which triggered fish passage requirements under OAR 635-412-0020(2), unless the Commission finds that additional time is necessary and appropriate:

(a) given the size and scope of the project or

(b) to coordinate with requirements of federal proceedings.

(10) Once the application, analysis, and a draft agreement are completed, a decision on whether the waiver or exemption shall be granted shall be made by:

(a) the Department:

(A) if it determines that the total stream distance, including tributaries, affected by the artificial obstruction for which the waiver or exemption is being sought is less than or equal to 1 mile to a natural barrier;

(B) if the request is for an exemption under subsection (4)(a) or (4)(b); or,

(C) for re-authorization of an existing hydroelectric project subject to ORS 543A.030 to ORS 543A.055 and not subject to federal hydroelectric relicensing; and

(b) the Commission:

(A) in all other instances; or

(B) if the Department refers a decision to the Commission; or

(C) if the owner or operator files a protest of the Department's determination to the Commission.

(11) The decision to grant a waiver or exemption shall include the determination described in subsection (1) or (4) as well as approval of the agreement required in subsection (9).

(12) In addition to the Fish Passage Task Force as prescribed in OAR 635-412-0010(4)(e) and (g), the Department shall notify local watershed council(s), local soil and water conservation district(s), identified stakeholders, and others who have expressed an interest in fish passage issues or the specific waiver or exemption request and provide an opportunity to comment on the request at least three weeks prior to a decision on whether the waiver or exemption should be granted.

(13) The Commission (or Department, as applicable) may require further public comment prior to a decision on whether a waiver or exemption should be granted.

(14) The Department shall maintain a database of the locations of waived and exempted artificial obstructions and mitigation.

Stat. Auth.: ORS 496.138

Stats. Implemented: ORS 509.585 and ORS 509.645

Hist.: Adopted 1-6-06, f. & certified ef. 1-9-06



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### 635-412-0030

#### Fish Passage Protests

- (1) A person owning or operating an artificial obstruction may request alternative dispute resolution at any point in the process of determining fish passage requirements.
- (2) The owner or operator of the artificial obstruction who objects to a determination made by the Department under these rules may file a protest with the Commission. Protests must be submitted in writing within 30 days of receipt of a written determination from the Department and must include the grounds for protesting the Department's determination.
- (3) The Commission may approve, deny, or modify the Department's determination after sufficient opportunity for public review and comment.
- (4) If a protest is not filed within 30 days of receipt of a written determination from the Department, the Department's determination shall become a final order.

Stat. Auth.: ORS 496.138

Stats. Implemented: ORS 509.585 and 509.645

Hist.: Adopted 11-12-04, filed and ef. 11-17-04

### 635-412-0035

#### Fish Passage Criteria

- (1) General requirements for fish passage are:
  - (a) unless the owner or operator of an artificial obstruction chooses to provide year-round fish passage for all native migratory fish and life history stages, the Department shall determine:
    - (A) native migratory fish currently or historically present at the site which require fish passage,
    - (B) life history stages which require fish passage, and
    - (C) dates of the year and/or conditions when passage shall be provided for the life history stages and native migratory fish;
  - (b) the person submitting the fish passage plan to the Department for approval shall submit all information necessary to efficiently evaluate whether the design will meet fish passage criteria;
  - (c) if site-specific circumstances indicate that the fish passage criteria are not adequate to provide fish passage, the Department may require in writing that additional fish passage criteria be met;
  - (d) if native migratory fish- or site-specific circumstances warrant it, the Department may provide an exception to any specific fish passage criterion if the Department determines in writing that fish passage shall still be provided;
  - (e) all fish passage structures shall be designed to take into consideration their upstream and downstream connection and prevent undesirable impacts to fish passage, including but not limited to scour and headcuts;
  - (f) if joint state and federal approval is required, the Department shall take into account federal requirements during approval;
  - (g) primarily at sites with little existing site information or questionable design solutions, the Department may require monitoring and reporting to determine if a fish passage structure meets applicable criteria and/or is providing fish passage; and
  - (h) the person owning or operating an artificial obstruction shall maintain the fish passage structure in such repair and operation as to provide fish passage of native migratory fish at all times required by the Department.
- (2) Requirements for fish passage at dams and other artificial obstructions which create a discontinuity between upstream and downstream water surface or streambed elevations are:
  - (a) fishways shall provide fish passage at all flows within the design streamflow range;
  - (b) the fishway entrance shall be located and adequate attraction flow shall be provided at one or more points where fish can easily locate and enter the fishway;
  - (c) fishway water velocities shall:
    - (A) range between 1 and 2 feet per second in transport channels,
    - (B) average no greater than 5 feet per second in baffled-chute fishways, including but not limited to Alaska steeppasses and denils, and
    - (C) not exceed 8 feet per second in discrete fishway transitions between the fishway entrance, pools, and exit through which fish must swim to move upstream, including but not limited to slots, orifices, or weir crests;
  - (d) at any point entering, within, or exiting the fishway where fish are required to jump to move upstream, the maximum difference between the upstream and downstream water surface elevations shall be 6 inches, except it shall be 12 inches if only salmon or steelhead adults require fish passage;



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(e) in fishway locations through which fish must swim, water depths shall be a minimum of 6 inches where only juveniles require passage and 12 inches where adults require passage, except:

(A) baffled-chute fishways, including but not limited to Alaska steppasses and denils, shall have a minimum flow depth of 2 feet throughout the length of the fishway, and

(B) water depths shall be a minimum of 2 feet within jump pools which shall be located downstream of any point entering, within, or exiting the fishway where fish are required to jump to move upstream;

(f) all fishway locations through which fish must swim shall be at least 12 inches wide;

(g) fishway pools shall:

(A) be sized according to the native migratory fish and life history stages requiring passage and to avoid overcrowding,

(B) have  $V \geq wQH/4$  at all flows within the design streamflow range, where:

(i) "V" is the water volume in cubic feet,

(ii) "w" is 62.4, the unit weight of water, in pounds per cubic foot,

(iii) "Q" is the fish ladder flow in cubic feet per second,

(iv) "H" is the energy head of pool-to-pool flow in feet, and

(v) 4 has a unit of foot-pounds per second per cubic foot,

(C) where the fishway bends 90 degrees or more, have turning pools with a flowpath centerline double the length of non-turning pools, and

(D) be placed at least every 25 feet of horizontal distance in baffled-chute fishways, including but not limited to Alaska steppasses and denils;

(h) the fishway exit should be located to minimize the risk of fish unintentionally falling downstream of the artificial obstruction;

(i) fishway trash racks shall:

(A) allow for easy maintenance and debris removal,

(B) have a minimum clear space between vertical members of 9 inches, except:

(i) 10 inches shall be provided if adult chinook are present, and

(ii) at least 4 inches shall be provided if only juveniles are present, and

(C) have a minimum clear space between horizontal members of 12 inches;

(j) the fishway shall:

(A) have water temperatures which are within 1 degree Fahrenheit of the water entering the fishway,

(B) be designed to assure that fish do not leap out of the fishway,

(C) have all edges and fasteners which fish may contact ground smooth or chamfered,

(D) not have protrusions extend into the flow path of the fishway,

(E) have as much ambient lighting as possible,

(F) have fishway components which are not detailed in OAR 635-412-0035(2), including but not limited to auxiliary water systems, designed considering the most recent National Marine Fisheries Service or U.S. Fish and Wildlife Service fish passage criteria and guidelines, and

(G) meet the species-specific requirements in OAR 635-412-0035(7) if any of those native migratory fish require fish passage;

(k) requirements for specific types of fishways include:

(A) baffled-chute fishways, including but not limited to Alaska steppasses and denils, shall not be used in areas where downstream passage will occur through the baffled-chute fishway,

(B) all fishways of a specific type with accepted configurations shall comply with those configurations, and

(C) fish passage plans for stream channel-spanning weirs, roughened channels (including but not limited to nature-like, rock, or engineered-stream fishways), and hybrid fishways (including but not limited to pool-and-chute ladders) which may combine criteria elements of natural streams and/or established fishway types (including but not limited to pool-and-weir, vertical slot, and baffled-chute fishways) shall clearly demonstrate how water depths, water velocities, water drops, jump pools, structure sizing, and fish injury precautions shall provide fish passage;

(l) for downstream fish passage: [Note: fish screening and bypass requirements for diverted water are separate from these requirements.]

(A) fish passage structures shall have an open water surface, except a submerged or enclosed conduit or orifice may be utilized if:

(i) acceptable guidance or collection mechanisms are used and kept free from debris,

(ii) water depth is greater than 4 inches during all flows,

(iii) water velocity is greater than 2 feet per second during all flows,

(iv) water is not pumped,



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- (v) conduits have smooth surfaces and avoid rapid changes in direction to preclude fish impact and injury, and
- (vi) conduits are at least 10 inches wide;
- (B) plunging flow moving past an artificial obstruction via spillways, outlet pipes, or some other means which may contain fish shall:
  - (i) at all flows, fall into a receiving pool of sufficient depth, depending on impact velocity and quantity of flow, to ensure that fish and flow shall not impact the stream bottom or other solid features, and
  - (ii) have a maximum impact velocity into a receiving pool, including vertical and horizontal velocity components, less than 25 feet per second; and
- (C) water depth over spillways shall be greater than 4 inches during all flows.
- (3) Requirements for fish passage at road-stream crossing structures such as bridges and culverts are:
  - (a) Stream Simulation Option:
    - (A) open-bottomed and closed-bottom road-stream crossing structures shall have beds under or within the structure that:
      - (i) are equal to or greater than the active channel width, as measured at sufficient locations outside the influence of any artificial or unique channel constrictions or tributaries both upstream and downstream of the site,
      - (ii) are equal to the slope of, and at elevations continuous with, the surrounding long-channel streambed profile, unless the Department approves maintaining a pre-existing road-impounded wetland,
      - (iii) have, for open-bottomed road-stream crossing structures, a minimum of 3 feet vertical clearance from the active channel width elevation to the inside top of the structure,
      - (iv) maintain average water depth and velocities that simulate those in the surrounding stream channel, and
      - (v) are composed of material that:
        - (I) assures the bed under or within the road-stream crossing structure is maintained through time,
        - (II) is either natural (similar size and composition as the surrounding stream) or supplemented to address site-specific needs including, but not limited to, bed retention and hydraulic shadow,
        - (III) contains partially-buried, over-sized rock if the road-stream crossing structure is greater than 40 feet in length,
        - (IV) is mechanically placed during structure installation rather than allowed to naturally accumulate, unless the surrounding streambed is primarily bedrock, and
        - (V) excluding partially-buried over-sized rock, is, for closed-bottom road-stream crossing structures, at a minimum depth of 20 percent of the structure height and a maximum depth of 50 percent of the structure height; and
    - (B) trash racks shall not extend below the active channel width elevation and shall have a minimum of 9 inches clear spacing between vertical members; or
    - (b) Alternative Option: the Department may approve road-stream crossing structures for which clear justification is provided, based on fish performance and/or fish behavior data and hydraulic conditions, that the alternative design shall provide fish passage.
  - (4) Requirements for fish passage at artificial obstructions in estuaries, and above which a stream is present, are:
    - (a) fish passage shall be provided at all current and historic channels;
    - (b) fish passage structures shall meet the criteria of OAR 635-412-0035(2) or (3), except fish passage structures shall be sized according to the cumulative flows or active channel widths, respectively, of all streams entering the estuary above the artificial obstruction; and
    - (c) tide gates and associated fish passage structures shall be a minimum of 4 feet wide and shall meet the requirements of OAR 635-412-0035(2) within the design streamflow range and for an average of at least 51% of tidal cycles, excluding periods when the channel is not passable under natural conditions.
  - (5) Requirements for fish passage at artificial obstructions in estuaries, floodplains, and wetlands, and above which no stream is present, are:
    - (a) Downstream Fish Passage
      - (A) downstream fish passage shall be provided after inflow which may contain native migratory fish;
      - (B) downstream fish passage shall be provided until water has drained from the estuary, floodplain, or wetland, or through the period determined by the Department which shall be based on one, or a combination of, the following:
        - (i) a specific date,
        - (ii) water temperature, as measured at a location or locations determined by the Department,
        - (iii) ground surface elevation,
        - (iv) water surface elevation, and/or
        - (v) some other reasonable measure;



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- (C) egress delays may be approved by the Department based on expected inflow frequency if there is suitable habitat and as long as passage is provided by the time the conditions in OAR 635-412-0035(5)(a)(B) occur;
- (D) a minimum egress flow of 0.25 cubic feet per second (cfs) at one point of egress shall be provided;
- (E) egress flow of 0.5 cfs per 10 surface acres, for at least the first 100 surface acres of impounded water, shall be provided;
- (F) all plunging egress flows shall meet the requirements of OAR 635-412-0035(2)(l)(B);
- (G) if egress flow is provided by a pump, it shall be appropriately screened;
- (H) the minimum water depth and width through or across the point of egress shall be 4 inches;
- (I) the ground surface above the artificial obstruction shall be sloped toward the point(s) of egress to eliminate isolated pools; and
- (J) an uninterrupted, open connection with a minimum water depth of 4 inches shall be present from the point of egress to the downstream waters of this state, unless another connection is provided as per OAR 635-412-0035(2)(l)(A).
- (b) Upstream Fish Passage: a fishway or road-stream crossing structure with or without a tide gate shall be provided during the period determined by the Department if there is current or historic native migratory fish spawning or rearing habitat within the estuary, floodplain, or wetland area impounded by the artificial obstruction.
- (6) Requirements for fish passage at traps are:
- (a) a collection permit issued by the Department is required to operate all traps;
- (b) traps shall be constructed to prevent physical or physiological injury to native migratory fish;
- (c) traps shall meet all requirements of OAR 635-412-0035(2)(g);
- (d) traps located within a fishway (i.e., "in-ladder" traps) shall not inhibit native migratory fish from entering the fishway or trap and shall be removed if the Department determines that fish are not entering the trap;
- (e) native migratory fish shall be processed through traps with minimal possible delay and as frequently as necessary to avoid over-crowding;
- (f) all native migratory fish, excluding those which have approved take authorization from the Department and which do not require fish passage as per OAR 635-412-0035(1)(a), shall be returned to the stream by one of the following methods:
- (A) movement from the trap to immediately-adjacent water which has fish passage, or
- (B) transport within a watered container, including but not limited to lifts, hoppers, locks, and trucks, from the trap to a location approved by the Commission.
- (7) Additional requirements for specific native migratory fish are:
- (a) *Acipenser* species (sturgeon)
- (A) the fish passage structure shall not require fish to jump when entering, within, or exiting the structure;
- (B) the fish passage structure, including trash racks, shall be sized to accommodate the largest individual expected to require fish passage; and
- (C) non-volitional transport within a watered container shall be allowed with Department approval.
- (b) *Catostomus* and *Chasmistes* species (suckers)
- (A) the fish passage structure shall not require fish to jump when entering, within, or exiting the structure;
- (B) fishways shall have a maximum water velocity of 4 feet per second;
- (C) fishways shall have a minimum water depth of 12 inches;
- (D) fishways shall maximize downstream flow between pools to avoid back eddies;
- (E) fishways shall have curved walls within turning pools; and
- (F) fishways shall have a slope less than 4 percent.
- (c) *Lampetra* species (lamprey)
- (A) fishways shall not have overhanging surfaces;
- (B) fishways shall have rounded or chamfered edge surfaces over which *Lampetra* species may pass;
- (C) fishways shall, in locations with water velocities greater than 2 feet per second, have a passage route that:
- (i) has a smooth, impermeable, uninterrupted surface or a simulated streambed,
- (ii) has water velocities over the structure's surface less than 8 feet per second, and
- (iii) is wetted.
- (d) *Oncorhynchus* species (trout and salmon): fish passage structures for *Oncorhynchus keta* (chum) shall not require fish to jump when entering, within, or exiting the structure.
- (e) *Ptychocheilus* species (pikeminnow): fish passage structures shall meet the requirements of OAR 635-412-0035(7)(a).
- (f) if more than one native migratory fish species requires passage at a site and the requirements for the different species are mutually exclusive, the Department shall determine passage criteria.



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(8) Requirements for artificial obstruction removal are:

(a) artificial obstruction removals shall follow the requirements of OAR 635-412-0035(10);

(b) if not completely removed, no parts of the remaining artificial obstruction shall:

(A) constrict the stream channel, or

(B) cause low flow depths less than the surrounding stream channel;

(c) after an artificial obstruction is removed the stream channel shall be restored; and

(d) the stream channel restoration shall address impacts to stream habitat caused by the artificial obstruction while in place and by its removal, including but not limited to upstream and downstream channel degradation, and provisions shall be made to address unexpected fish passage issues resulting from removal.

(9) Requirements for exclusion barriers are:

(a) exclusion barriers shall only be placed in the following situations, when fish passage is not required or is provided by other means:

(A) to guide fish to an approved fish passage structure or trap,

(B) to prevent fish from leaving waters of this state and entering human-made water supply conduits,

(C) to prevent fish from entering waters of this state associated with operations of another artificial obstruction that could lead to fish injury, or

(D) to achieve other fish management objectives approved in writing by the Department; and

(b) exclusion barriers shall comply with National Marine Fisheries Service or U.S. Fish and Wildlife Service criteria.

(10) Requirements for fish passage during construction of fish passage structures and periods when temporary artificial obstructions are in place are:

(a) all fish passage structures shall be constructed and temporary artificial obstructions shall be in place only during the site-specific in-water work period defined or approved by the Department;

(b) at times indicated by the Department as per OAR 635-412-0035(1)(a), downstream fish passage shall be provided and:

(A) the outfall of a stream flow bypass system shall be placed to provide safe reentry of fish into the stream channel, and

(B) if downstream fish passage during construction is not required and stream flow is pumped around the site, the site shall meet Department screening and/or bypass requirements;

(c) at times indicated by the Department as per OAR 635-412-0035(1)(a), upstream fish passage shall be provided and shall be based on the wetted-width or flows of the stream during the period of construction or temporary obstruction;

(d) in-stream construction sites shall be isolated from stream flow and fish;

(e) prior to in-stream construction activities, all fish shall be safely collected, removed from the construction site or de-watered reach, and placed in the flowing stream by an authorized person with a collection permit issued by the Department; and

(f) after construction, the construction site shall be re-watered in a manner to prevent loss of downstream surface water as the construction site's streambed absorbs water.

(11) Requirements for experimental fish passage structures are:

(a) experimental fish passage structures shall only be allowed in waters of the state after:

(A) laboratory testing with native migratory fish or similar species indicates that the structure is feasible to provide fish passage,

(B) field testing with a prototype structure, at a location where existing fish passage will not be compromised and where fish passage does not need to be addressed under OAR 635-412-0020(2) and (3), indicates that the structure is likely to provide fish passage, and

(C) in addition to information needed to evaluate the structure's design for the specific location, the following are submitted to the Department and approved:

(i) a written summary of the laboratory and field testing and how the results indicate that fish passage shall be provided,

(ii) a monitoring and reporting plan to determine if the installed experimental fish passage structure meets applicable design objectives and is providing fish passage, and

(iii) a modification plan for the experimental fish passage structure if monitoring indicates that fish passage is not being provided, including standard thresholds that will initiate these modifications;

(b) if at any time an experimental fish passage structure is deemed by the Department in writing to not provide fish passage, the owner or operator, in consultation with the Department, shall make such modifications to the structure or operation as are necessary to provide fish passage, and, after a reasonable period, if modifications are deemed by the Department in writing to not provide fish passage, a fish passage structure that meets the



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standard criteria of OAR 635-412-0035 shall be installed as soon as practicable but no later than the end of the next complete in-water work period after notification by the Department;

(c) the owner or operator of an experimental fish passage structure shall allow the Department to inspect experimental fish passage structures at reasonable times;

(d) five years after the experimental fish passage structure is installed and fish are present to attempt passage a final monitoring report shall be submitted to the Department and the Department shall determine if the experimental fish passage structure provides fish passage;

(e) if the Department determines that the experimental fish passage structure does not provide fish passage, a fish passage structure that meets the standard criteria of OAR 635-412-0035 shall be installed as soon as practicable but no later than the end of the next complete in-water work period after notification by the Department; and

(f) after three experimental fish passage structures of the same design concept are placed in waters of the state and deemed to provide fish passage by the Department, the experimental fish passage structure shall no longer be considered experimental.

Stat. Auth.: ORS 496.138

Stats. Implemented: ORS 509.585 and 509.610

Hist.: Adopted 1-6-06, f. & certified ef. 1-9-06

### **635-412-0040**

#### **Mitigation Criteria**

(1) Mitigation shall not be allowed for artificial obstructions located in, or which would prevent access to, "Habitat Category 1" habitat for native migratory fish as described in OAR 635-415-0025(1).

(2) Mitigation options include:

(a) providing fish passage at another pre-existing artificial obstruction which is not required to address fish passage under OAR 635-412-0015 or 635-412-0020;

(b) restoration or enhancement of native migratory fish habitat;

(c) fish management measures to directly increase naturally-producing, wild, native migratory fish populations; and

(d) other actions specifically approved by the Commission.

(3) Mitigation shall not include any activity that is a requirement or condition of any other agreement, law, permit, or authorization except if it is also for fish passage mitigation of the same action at the artificial obstruction for a different level of government.

(4) Unless a fish passage waiver for a site has already been obtained and mitigation has been provided, mitigation activities shall not be completed prior to a decision regarding a fish passage waiver.

(5) The Department shall approve final mitigation designs in writing prior to implementation (Note: mitigation actions or concepts, absent specific designs, can be approved at the time a waiver decision is made).

(6) Mitigation actions that provide fish passage shall meet the fish passage criteria contained in OAR 635-412-0035.

(7) The Commission may require the posting of a bond or other financial instrument acceptable to the Commission to cover the cost of mitigation actions or providing fish passage at the artificial obstruction if the mitigation action does not achieve its goals.

(8) A person owning or operating an artificial obstruction is responsible for maintaining, monitoring, evaluating the effectiveness of, and reporting on mitigation.

(9) Mitigation:

(a) shall be conducted in-proximity to the artificial obstruction, with respect to geographic scope;

(b) shall have habitat type and quality which is more beneficial than that affected by the artificial obstruction, if mitigation is passage into, restoration of, or enhancement of habitat;

(c) shall at least benefit the same native migratory fish species affected at the artificial obstruction;

(d) shall have a clear benefit for those native migratory fish species affected at the artificial obstruction if their status is listed as "threatened" or "endangered" under the state or federal Endangered Species Act;

(e) shall have standards for monitoring, evaluating, and adaptive management which are approved by the Department, which assure that the goal of the mitigation is achieved and maintained, and which are detailed in the waiver agreement required in OAR 635-412-0025(9);

(f) shall be considered if the owner or operator of the artificial obstruction believes the feasibility of fish passage at the artificial obstruction is less than that for mitigation;



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- (g) may require quantification of baseline conditions before a decision regarding a fish passage waiver is made in situations with no existing information, which require recent information, or which have no clear benefit;
- (h) shall attempt to restore or enhance historic conditions;
- (i) to the extent possible, shall be consistent with existing native migratory fish or watershed management plans;
- (j) may qualify for financial incentives or grants issued by the Department and the owner's or operator's cost for mitigation or passage at the artificial obstruction shall not be a factor in the Department's net benefit determination;
- (k) may require data collection and evaluation before a decision regarding a fish passage waiver is made in situations with no existing information, which require recent information, or which have no clear benefit; and
- (l) shall be consistent with the purpose and goals of the Oregon Plan.

Stat. Auth.: ORS 496.138

Stats. Implemented: ORS 509.580, 509.585, and 509.610

Hist.: Adopted 1-6-06, f. & certified ef. 1-9-06