

Summary

Meeting dates: January 10 -11, 2014 Commission Meeting

Agenda item: Update of Chapter 220-110 Hydraulic Code Rules

Presenter(s): Randi Thurston, Protection Division Manager
Pat Chapman, Regulatory Services Coordinator

Background summary:

This briefing will inform the Fish and Wildlife Commission about four proposed hydraulic code rule sections. This presentation will cover:

- 1) Changes to 220-110-201 through 206 Mineral prospecting (proposed 220-110-300)
- 2) Changes to 220-110-060 Construction of freshwater docks, piers, and floats and the driving or removal of piling (proposed 220-110-140)
- 3) Changes to 220-110-224 Boat hoists, ramps and launches (proposed 220-110-150)
- 4) New section 220-110-160 Marinas and terminals in freshwater areas

Approximately 40 minutes will be needed for the presentation and questions/answers.

Policy issue(s) you are bringing to the Commission for consideration:

None, briefing only

Public involvement process used and what you learned:

N/A

Action requested:

None, briefing only

Draft motion language:

N/A

Justification for Commission action:

N/A

Communications Plan:

N/A

Form revised 12/5/12

Section Title: WAC 220-110-150 Boat ramps and launches in freshwater areas

Background: The section reflects current fish science and technology measures to avoid or minimize adverse modifications to fish and shellfish habitat from boat ramps and launches.

Summary of New Section or Proposed Changes: New regulations have been added, including requirements that boat ramps are located to avoid impacts to spawning areas, footings and bases are located below pre-existing grade, and boat ramps are at the same elevation as pre-construction streambed and banks.

Public Comments:

Support

No specific comments received to date.

Concerns

- 1) Some provision is needed with respect to boat ramps so that once permitted and constructed, they can be maintained for access by removals or relocations of entrained wood, as a normal and routine maintenance activity.
- 2) "Design and construct boarding floats to minimize grounding on and shading of the bed and interference with the sediment and wood movement" would benefit from including the riverine environment in this section.
- 3) By far the worst ramp design is the pre-cast design. Water action from waves and propellers constantly undermine and shift these pieces causing uplift and settling. I think all ramps should be poured in place.

Existing Rule Language:

WAC 220-110-224 Freshwater boat hoists, ramps, and launches

The installation and operation of portable boat hoists in lakes does not require a HPA, provided:

1. Equipment is not operated below the ordinary high water line during installation;
2. The hoist is not installed at the mouth of any watercourse; and
3. Dredging, filling, or pile driving is not conducted as part of the project. Freshwater boat hoist, ramp, and launch projects shall incorporate mitigation measures as necessary to achieve no-net-loss of productive capacity of fish and shellfish habitat.

The following technical provisions shall apply to boat ramps and launches in freshwater areas.

- (1) Structures containing concrete shall be sufficiently cured to prevent leaching prior to contact with water.

(2) All piling, lumber, or other materials treated with preservatives shall be sufficiently cured to minimize leaching into the water or bed. The use of wood treated with creosote or pentachlorophenol is not allowed in lakes.

(3) Overburden material resulting from this project shall be deposited so as not to reenter the water.

Draft Rule Language:

WAC 220-110-150 Boat ramps and launches in freshwater areas

All projects must meet the mitigation requirements in WAC 220-110-080 and the requirements in WAC 220-110-100 through 220-110-440 that are included in an HPA. The department will require certain technical provisions depending upon the individual proposal and site-specific characteristics. Additional special provisions may be included to address site-specific conditions.

(1) DESCRIPTION

A boat ramp is a sloping, stabilized roadway constructed on the shoreline for launching boats from vehicular trailers. Ramps extend into the water at a slope of typically twelve to fifteen percent and are typically oriented perpendicular to the shoreline. Ramp widths vary with intended use, whereas the length often depends on the slope of the shoreline and seasonal water levels. Ramps are usually constructed in protected areas with access to deep water close to shore. Construction materials commonly consist of gravel, concrete, or asphalt; they are often associated with marinas and parking lots.

(2) FISH LIFE CONCERNS

A boat ramp or launch typically destroys fish and shellfish habitat in its footprint. A large number of ramps in a given area reduces and fragments this habitat. Ramps and launches placed above bed grade can block sediment and wood movement, and alter nearshore migration of juvenile fish. Ramp and launch placement and maintenance and associated vessel activity can disturb or directly remove aquatic vegetation.

(3) BOAT RAMP AND LAUNCH DESIGN

- (a) Design and locate the boat ramp or launch to avoid adverse impacts to fish spawning areas.
- (b) Design and construct the boat ramp at the same elevation as the pre-construction banks or shore as long as the maximum grade does not exceed 15 percent.
- (c) Design and locate the boat ramp so most of the excavation occurs above the OHWL.
- (d) Design the boat ramp to prevent erosive undercutting or breaking of ramp edges.
- (e) Design and construct boarding floats to minimize grounding on and shading of the bed and interfering with sediment and wood movement.

(4) BOAT RAMP AND LAUNCH CONSTRUCTION

- (a) Construct the upland portions of the ramp in the dry.
- (b) Construct footings and/or the base of the boat ramp below the pre-existing grade of the streambank or lakeshore.
- (c) Construct a ramp with concrete or compressed or hardened gravel.
- (d) Use pre-cast concrete slabs to construct a concrete boat ramp below ordinary high water or isolate the wet cement until it is fully hardened.
- (e) Securely anchor launching rails to the stream or lake bottom.

Section Title: WAC 220-110-160 Marinas and terminals in freshwater areas

Background: Currently, there are no rules for marinas and terminal in freshwater areas. The section reflects current fish science and technology measures to avoid or minimize adverse modifications to fish and shellfish habitat from marina and terminal construction. This section also includes provisions to administer RCW 77.55.151 Permits issued to marina and marine terminal for regular maintenance activities.

Summary of New Section or Proposed Changes: This new section adds requirements for marinas and terminals in freshwater areas, which were not covered in the existing WAC. Requirements for site selection, railway- type boat launches, maintenance, design, pilings, noise and pile driving, and breakwaters have been added. The section mimics the saltwater section where applicable.

Public Comments:

Support

No specific comments received to date.

Concerns

- 1) There is no section on Terminal Design (other than under General) for freshwater areas. There are a number of large terminals along the Columbia River.
- 2) Add wetlands to the following statement: "Locate new marinas and terminals away from areas with native aquatic vegetation and wetlands."

Draft Rule Language:

WAC 220-110-160 Marinas and terminals in freshwater areas

The requirements in this section apply to constructing, maintaining, repairing, and removing marinas and terminals in freshwater areas. All projects must meet the mitigation requirements in WAC 220-110-080 and the requirements in WAC 220-110-100 through 220-110-440 that are included in an HPA. The department will require certain technical provisions depending upon the individual proposal and site-specific characteristics. Additional special provisions may be included to address site-specific conditions.

(1) DESCRIPTION

A marina is a public or private facility providing vessel moorage space, fuel, or commercial services. Commercial services include but are not limited to overnight or live-aboard vessel accommodations (RCW 77.55.011(13)).

A terminal is a public or private commercial wharf located in the navigable waters of the state and used, or intended to be used, as a port or facility for storing, handling, transferring, or transporting goods, passengers, and vehicles to and from vessels (RCW 77.55.011(14)).

(2) FISH LIFE CONCERNS

Marinas and terminals can alter the physical processes that create or maintain fish habitat. Possible impacts may include alteration of the light regime, hydrology, substrate conditions, and water quality. Marinas and terminals often have a larger impact area than residential docks and are often associated with heavy boat traffic and human use. Thus, the size and amount of the potential impacts to fish life may be greater.

(3) MARINA AND TERMINAL DESIGN - GENERAL

- (a) Design, locate, and construct new marinas and terminals to avoid impacts to fish migration corridors and fish spawning and rearing areas.
- (b) The department may require physical modeling, numerical modeling, or other information that demonstrates enough water exchange and circulation to ensure site selection requirements in subsection (4) below are met.
- (c) Locate new marinas and terminals away from areas with native aquatic vegetation.
- (d) Locate new marinas and terminals in naturally deep areas so dredging is not required.
- (e) Locate new marinas and terminals in areas deep enough to prevent propeller wash impacts to the bed.
- (f) Locate new marinas and terminals in areas with low or impaired biological integrity.
- (g) Design marinas and terminals so most overwater coverage is in the deepest water practicable.
- (h) Minimize the amount of pier area that directly contacts the shoreline to allow light penetration to the nearshore and shallow intertidal.
- (i) Minimize the width of overwater and in-water structures.
- (j) Use the smallest number of piling needed to construct a safe structure.
- (k) Design and construct piers and other above-water structures as tall as possible to increase light transmission.
- (l) Use light-reflecting materials on the underside of above water structures whenever possible.

(4) MARINA DESIGN

- (a) The department may require a marina design to include grating to minimize impacts to native juvenile salmonid migration corridors and native aquatic vegetation. If grating is required, locate flotation under the solid decked area

only.

- (b) Orient grating so the lengthwise opening maximizes the amount of light penetration. Any objects on, above or below the grating should not block light penetration.
- (c) Unless there are engineering, safety, or environmental constraints, provide slips for smaller boats in shallower water and place slips for larger boats in deeper water.
- (d) Do not locate new boathouses, houseboats, and covered moorages less than fifty feet from the shoreline and in water less than twenty feet deep.
- (e) If artificial nighttime lighting is used in the design, use low-intensity lights that are located and shielded to prevent light from shining on the water from sunset to sunrise.
- (f) Any replacement roof for a covered moorage and boathouse in water less than fifty feet from the shoreline and in water less than twenty feet deep must incorporate translucent materials or skylights in the roof.

(5) BREAKWATER DESIGN

- (a) Design and construct breakwaters to maintain shallow water migratory pathways for juvenile fish species.
- (b) Unless there are engineering, safety, or environmental constraints, use removable, floating breakwaters or wave boards.

(6) MARINA AND TERMINAL CONSTRUCTION

- (a) Avoid use of continuous sheet piles.
- (b) New and replacement piling can be steel, concrete, recycled plastic, or untreated or ammoniacal copper zinc arsenate (ACZA) treated wood.
- (c) ACZA-treated wood piling must incorporate design features such as metal bands to minimize abrasion of the piling by vessels, floats or other objects.
- (d) Unless there are geological, engineering, or safety constraints, use a vibratory hammer to drive steel piling.
- (e) The department may require sound attenuation such as a bubble curtain to minimize harm to fish from impact steel pile-driving noise.
- (f) To avoid attracting fish to light at night, limit pile driving to daylight hours.

(7) MARINA AND TERMINAL MAINTENANCE

- (a) Upon request, the department must issue a renewable, five-year HPA for regular maintenance activities of a marina or terminal.
- (b) In this section, regular maintenance activities may include the following work:
 - (i) Maintain or repair a boat ramp, launch, or float within the existing footprint;
 - (ii) Maintain or repair an existing overwater structure within the existing footprint;

- (iii) Maintain or repair boat lifts or railway launches;
 - (iv) Maintain or repair pilings, including the replacing bumper pilings;
 - (v) Dredge less than fifty cubic yards of material;
 - (vi) Maintain or repair shoreline armoring or bank protection;
 - (vii) Maintain or repair wetland, riparian, or estuarine habitat; and
 - (viii) Maintain or repair an existing outfall.
- (c) The five-year permit must include a requirement that a person give the department a fourteen-day notice before each time regular maintenance activities start.

Section Title: WAC 220-110-300 Mineral Prospecting

Background: The rules adopted by the Washington State Parks and Recreation Commission allowing certain beach prospecting activities in marine waters. The department purposes to cover this activity in the Gold and Fish pamphlet so an individual HPA to legally prospect on ocean beaches is not required.

Summary of New Section or Proposed Changes: Multiple sections have been combined into a single section. A new section on mineral prospecting on ocean beaches has been added, including where beach prospecting may occur and what equipment may be used. The provisions for mineral prospecting on ocean beaches prospecting are included in the Gold and Fish pamphlet. Authorized work times for mineral prospecting in Nooksack and Wenatchee Rivers have been changed and are listed in a table. The timing in the Nooksack River changes from July 16 – August 15 to submit application. The timing in the Wenatchee River from the mouth to Leavenworth changes from July 1 – July 31 to July 15 – September 30 and from Leavenworth to Lake Wenatchee changes from July 31 – July 31 to July 15 – August 15.

Public Comments:

Support

The Nooksack Tribe provided the spawning data and requested the change to the Nooksack River timing window. The department confirmed the information provided by the Tribe.

Concerns

- 1) Although the Lummi Nation can agree that recreational panning for gold during non-spawning periods will typically result in minimal disturbance of salmon habitat, we are opposed to the use of suction dredges in anadromous waters. Such operations carry a substantial potential to harm fish eggs, juvenile fish, and fish habitat. Two issues pertinent to suction dredges are particularly problematic. First are the work windows that allow suction dredging in anadromous reaches of our co-managed rivers and streams when juvenile salmonids are present and adult fish are migrating. Suction dredging in our watercourses should require an individual HPA with the associated tribal notification requirements and accurate location information. This requirement will facilitate opportunities for closely monitoring these activities.
- 2) Regarding the up and coming ' Hydraulics Code Rule Changes ' how does this relate to 'small scale mining and suction dredging? Keep in mind that the federal government studied this issue many years ago with 8" and 10" dredges and concluded that they had only a de minimis / insignificant impact on fish and river habitat. WDFW would be wise

to respect those studies and miners simple "right to work". Obviously it's far below the excesses of nature which fish have survived for 'billions of years...

- 3) We suggest adding the following: "Mineral prospecting applications for work outside Gold and Fish work windows and/or increased equipment size in shorelines of the state must be consistent with all applicable goals and policies of the Shoreline Management Act, its rules, and the local shoreline master program."
- 4) We suggest adding the following: "Mineral prospecting applications for work outside Gold and Fish work windows and/or increased equipment size shall meet local, state and federal permit requirements." Ecology recommends submittal of a standard JARPA to all permitting agencies for application.
- 5) Suiattle River – Change to submit application.
- 6) New information since 2009 of successive coho spawning and of verified bull trout presence in Rock Creek (38.MISC), tributary to Naches River, means the department should change the work window consistent with the biology. We'd like to have the new standard work window for Rock Creek as July 16-October 15.
- 7) No HPA is needed for ocean beach prospecting.
- 8) 6c needs clarification on when a pamphlet is needed.
- 9) What Science related to ghost shrimps? How do I know where the ghost shrimp line is?
- 10) Return to previous work windows.
- 11) Post science to support work window changes.
- 12) Streams change – Site surveys for individual HPAs invalid. Need flexibility in HPA for stream variability. Streams change week to week.
- 13) Add a definition and timing for trossels.

Draft Rule Language:

220-110-300 Mineral Prospecting (New Beach Prospecting Section Only)

- (1) MINERAL PROSPECTING ON OCEAN BEACHES
 - (a) A person may mineral prospect year-round on ocean beaches of the state. A person must follow the rules listed below, and must have the *Gold and Fish* pamphlet on the job site when working on ocean beaches of the state, except as noted below.

- (b) A person may mineral prospect only between the line of ordinary high tide and the line of extreme low tide on beaches within the Seashore Conservation Area set under RCW 79A.05.605 and managed by Washington State Parks and Recreation Commission.
- (c) No written or pamphlet HPA is required to mineral prospect south of the Copalis River, if a person operates landward of the upper limit of ghost shrimp burrowing in the beach; waterward of the ordinary high tide line; and a person does not use fresh water from fish-bearing streams during operations.
- (d) A person may use only hand-held mineral prospecting tools and the following mineral prospecting equipment:
 - (i) Pans;
 - (ii) Spiral wheels;
 - (iii) Sluices, concentrators, rocker boxes, and high-bankers with riffle areas totaling ten square feet or less, including ganged equipment;
 - (iv) Suction dredges that have suction intake nozzles with inside diameters that should be five inches or less, but must be no greater than five and one-quarter inches to account for manufacturing tolerances and possible deformation of the nozzle. The inside diameter of the dredge hose attached to the nozzle may be no greater than one inch larger than the nozzle size;
 - (v) Power sluice/suction dredge combinations that have riffle areas totaling ten square feet or less, including ganged equipment; suction intake nozzles with inside diameters that should be five inches or less, but must be no greater than five and one-quarter inches to account for manufacturing tolerances and possible deformation of the nozzle; and pump intake hoses with inside diameters of four inches or less. The inside diameter of the dredge hose attached to the suction intake nozzle may be no greater than one inch larger than the nozzle size; and
 - (vi) High-bankers and power sluices that have riffle areas totaling ten square feet or less, including ganged equipment, and pump intake hoses with inside diameters of four inches or less.
- (e) When operated in fish-bearing freshwater streams, the widest point of a sluice, including attachments, must not exceed twenty-five percent of the width of the wetted perimeter at the point of placement.
- (f) A person may not use vehicle-mounted winches. A person may use one motorized winch and one hand-operated winch to move boulders and large woody material that is not embedded, and additional cables, chains, or ropes to

stabilize them.

- (g) Under RCW 77.57.010 and 77.57.070, any device a person uses for pumping water from fish-bearing waters must be equipped with a fish guard to prevent fish from entering the pump intake. A person must screen the pump intake with material that has openings no larger than five sixty-fourths inch for square openings, measured side to side, or three thirty-seconds inch diameter for round openings, and the screen must have at least one square inch of functional screen area for every gallon per minute (gpm) of water drawn through it. For example, a one hundred gpm-rated pump would require a screen with a surface area of at least one hundred square inches.
- (h) All equipment fueling and servicing must be done so that petroleum products do not enter the wetted perimeter. If a petroleum sheen or spill is observed, a person must immediately stop work, remove the equipment from the body of water and beach, and contact the Washington military department emergency management division. A person may not return the equipment to the water or beach until the problem is corrected. A person must store fuel and lubricants away from the water inside a vehicle or landward of the beach, and in the shade when possible.
- (i) A person may work only from one-half hour before official sunrise to one-half hour after official sunset. If a person uses mineral prospecting equipment in a fish-bearing freshwater stream and the equipment exceeds one-half the width of the wetted perimeter of the stream, a person must remove the equipment from the wetted perimeter or move it so that at least fifty percent of the wetted perimeter is free of equipment from one-half hour after official sunset to one-half hour before official sunrise.
- (j) A person may not undermine, cut, disturb, or move large woody material or woody debris jams.
- (k) A person may work in only one excavation site at a time. However, a person may use a second excavation site as a settling pond. Multiple people may work within a single excavation site.
- (l) A person must backfill all trenches, depressions, or holes created in the beach during project activities before moving to another excavation site (except during use as a settling pond) or leaving an excavation site.
- (m) A person may partially divert a body of water into mineral prospecting equipment. However, at no time may the diversion structure be greater than fifty percent of the width of the wetted perimeter of a fish-bearing freshwater stream, including the width of the equipment. A person may not divert the body of water outside of the wetted perimeter.

- (n) A person may use materials only from within the wetted perimeter, or artificial materials from outside the wetted perimeter, to construct the diversion structure by hand. Before abandoning the site, a person must remove artificial materials used to construct a diversion structure and restore the site to its approximate original condition.
- (o) A person may use pressurized water only for redistributing dredge tailings within the wetted perimeter. No other use of pressurized water is permitted.
- (p) A person may not disturb live razor clams or other shellfish within the bed. If a person observes or encounters live razor clams or other shellfish during excavation, the person must relocate the operation.
- (q) If at any time, as a result of project activities, a person observes a fish kill or fish life in distress, a person must immediately stop operations and notify the department, and the Washington military department emergency management division of the problem. A person may not resume work until the department gives approval. The department will require additional measures to mitigate the prospecting impacts.

Section Title: WAC 220-110-140 Residential docks, watercraft lifts and buoys in freshwater areas

Background: The section reflects current fish science and technology measures to avoid or minimize adverse modifications to fish and shellfish habitat from overwater structures.

Summary of New Section or Proposed Changes: Subsections were added for watercraft lifts, mooring buoys, piers, ramps, floats, grating, treated wood, piling, noise and pile driving, and piling removal. There are substantive changes to the requirements in this section including length, width and grating requirements for new docks in waterbodies with salmon, steelhead and bull trout.

Public Comments:

Support

No specific comments received to date.

Concerns

- 1) If a dock is built using steel pipe and iron feet four-foot wide docks pose a safety concern. Most folks prefer six-feet.
- 2) If a pier or a dock is 18" above the waterline then the pier is too high. Any higher and you would need a ladder to climb down into your boat.
- 3) For private docks on Moses Lake grating should not be required and composite or natural wood should be okay.
- 4) An HPA should not be required to remove a dock to prevent snow and ice damage. Pull poles should be allowed to both hold and boatlift tipped up on its front legs and as an anchor to come-a-long rolling docks out of the lake.
- 5) Rules impose restrictions on lake shore property owners' beneficial use and value of their lake shore property (for which they are already paying high property taxes), needlessly increases the cost of dock design and construction, and disadvantage those lake shore property owners who wish to replace their existing dock or construct a first time dock that is scaled to that of their adjacent neighbors' existing docks.
 - Rules seek to protect from the shading effect of docks typically already feature excessive aquatic plant growth as well as warm water fish species including crappie, perch and small and large mouth bass. The shading effect of docks under these circumstances is desirable in that they suppress aquatic plant growth beneath and in the proximity of docks which enhances human beneficial use of these aquatic weed suppressed areas.

- In the extensive shallow areas away from these docks there is typically plenty of aquatic vegetation to "provide food, breeding areas, and protective nurseries for fish, shellfish, crustaceans and many other animals." so much so that these shallow areas are often treated with herbicides to control their prolific growth in our nutrient enriched lake waters
- The favorite habitat for small and large mouth bass is the shaded area beneath a dock where they can ambush and feed on the young of other warm water species of fish. This is a desirable situation since without predation crappie and perch populations soon explode.
- Small and large mouth bass populations benefit from having access to shaded areas beneath ramps, docks and watercraft lifts.

Current Rule Language:

WAC 220-110-060 Construction of freshwater docks, piers, and floats and the driving or removal of piling.

All pier, dock, float, and piling construction projects shall incorporate mitigation measures as necessary to achieve no-net-loss of productive capacity of fish and shellfish habitat. The following technical provisions shall apply to freshwater dock, pier, and float construction projects and the driving or removal of piling:

- (1) Excavation for and placement of the footings and foundation shall be landward of the ordinary high water line unless the construction site is separated from state waters by use of an approved dike, cofferdam, or similar structure.
- (2) Alteration or disturbance of the bank and bank vegetation shall be limited to that necessary to construct the project. All disturbed areas shall be protected from erosion, within seven days of completion of the project, using vegetation or other means. The banks shall be revegetated within one year with native or other approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center), and maintained as necessary for three years to ensure eighty percent survival. Where proposed, planting densities and maintenance requirements for rooted stock will be determined on a site-specific basis. The requirement to plant woody vegetation may be waived for areas where the potential for natural revegetation is adequate, or where other engineering or safety factors preclude them.
- (3) Removal of existing or temporary structures shall be accomplished so that the structure and associated material does not reenter the watercourse.

- (4) All piling, lumber, or other materials treated with preservatives shall be sufficiently cured to minimize leaching into the water or bed. The use of wood treated with creosote or pentachlorophenol is not allowed in lakes.
- (5) Skirting or other structures shall not be constructed around piers, docks, or floats unless specifically approved in the HPA.
- (6) Floatation for the structure shall be enclosed and contained, when necessary, to prevent the breakup or loss of the floatation material into the water.
- (7) All work operations shall be conducted in such a manner that causes little or no siltation to adjacent areas. If at any time, fish are observed in distress, a fish kill occurs, or water quality problems develop as a result of a pier, dock, float, or piling project, construction operations shall cease and the permittee or authorized agent shall immediately contact the department.
- (8) Removal of aquatic vegetation shall be limited to that necessary to gain access to construct the project.

Draft Rule Language:

The requirements in this section apply to location, design, and construction of permanent and seasonal docks, watercraft lifts, and mooring buoys in freshwater areas. All projects must meet the mitigation requirements in WAC 220-110-080 and the requirements in WAC 220-110-100 through 220-110-440 that are included in an HPA. The department will require certain technical provisions depending on the individual proposal and site-specific characteristics. Additional special provisions may be included to address site-specific conditions.

(1) DESCRIPTION

A pier is a stationary overwater structure that extends out from the shoreline and is supported by piling. A float is a walkway or other surface that floats on the water. A ramp is a walkway that connects a pier or other shoreline to a float and provides access between the two. Pilings that are associated with several of these structures are formed of timber, steel, reinforced concrete, or composite posts that are driven, jacked, or cast vertically into the bed. A watercraft lift is a structure that lifts boats and personal watercraft out of the water. A mooring buoy is a floating surface structure used for private and commercial vessel moorage.

(2) FISH LIFE CONCERNS

Overwater and in-water structures can alter physical processes that create or maintain fish habitat. These include altering the light regime, hydrology, substrate conditions, and water quality. However, light reduction is the main impact to fish habitat. Light reduction, or shading, by overwater or in-water structures reduces survival of aquatic

plants. Aquatic plants provide food, breeding areas, and protective nurseries for fish, shellfish, crustaceans, and many other animals. Shallow water provides juvenile fish a refuge from predators like larger fish. Overwater and in-water structures can alter movement of juvenile salmon, steelhead and other fish species. Structures grounding on the bed can physically block migration. The light/dark contrast of shading/no shading of overwater and in-water structures can affect migration behavior. Fish respond by moving into deeper water which increases the risk of predation. These structures may increase the exposure of juvenile salmon, steelhead, and other small fish to predators by providing predator habitat. This can alter the natural predator/prey relationship to the detriment of listed and priority fish species.

(3) DOCK DESIGN - GENERAL

- (a) Design and locate structures to avoid impacting fish spawning and rearing areas and fish migration corridors.
- (b) The design must not include skirting unless specifically approved in the HPA.
- (c) If artificial nighttime lighting is used in the design, use low-intensity lights that are located and shielded to prevent light from shining on the water from sunset to sunrise.
- (d) The design must not use treated wood for the decking of the structure. The design may use ammoniacal copper zinc arsenate (ACZA)-treated wood for structural elements.
- (e) Treated wood structural elements subject to abrasion by vessels, floats, or other objects must incorporate design features to minimize abrasion of the wood.
- (f) Use the smallest number of piling needed to construct a safe structure.
- (g) Piles must be no larger than eight inches in diameter unless there are engineering or safety constraints.
- (h) New and replacement piling can be steel, concrete, recycled plastic, or untreated or ammoniacal copper zinc arsenate (ACZA)-treated wood that has undergone an industry standard post-treatment process that is verified with a certificate.
- (i) ACZA-treated wood piling must incorporate abrasion resistant material such as Ultra High Molecular Weight polyethylene or polypropylene rubbing strips to minimize abrasion of the piling by vessels, floats or other objects.
- (j) The department will allow the use of fill around piling only when the substrate prevents the driving of piles.
- (k) Limit the fill material to clean rock and concrete.
- (l) Limit the total amount of fill to the least needed to secure the piles.

(4) DOCK DESIGN IN WATERBODIES WITH JUVENILE SALMONID MIGRATION CORRIDORS - GENERAL

- (a) New dock structures in shallow freshwater areas containing native juvenile salmonid migration corridors should consist of a pier only; pier, ramp, and float; or a float only. Floating docks are not authorized unless pier-only or pier, ramp, and float dock designs are prohibited by local land use regulations.
- (b) Design new dock structures so floats and associated vessels do not ground on the bed. There must be at least twelve inches of space between the bottom of float and the bed at low water. In reservoirs and impoundments, this applies only during times of the year when water is present.
- (c) The department may authorize replacement of floating docks in freshwater areas containing if:
 - (i) The replaced floating dock is not expanded.
 - (ii) The replaced floating dock is not relocated in waters of the state without written authorization from the department. The replaced structure must be removed and disposed of upland such that it does not re-enter waters of the state.
 - (iii) No more than twenty percent of the floating dock grounds on the beach at any time. There must be at least twelve inches space between non-grounding portions of the dock and the beach at low water. In reservoirs and impoundments, this applies only during times of the year when water is present.
 - (iv) A replacement floating dock six feet wide or narrower must have at least thirty percent functional grating of the deck surface. A replacement floating dock wider than six feet must have at least fifty percent functional grating installed in the deck surface. In some waterbodies, the department may require the entire structure to be grated. Locate flotation under the solid decked area only. Functional grated decking is that portion of grated decking that is not obstructed by any timber or support structures, including float material or tubs.

(5) DOCK DESIGN IN WATERBODIES WITHOUT NATIVE JUVENILE SALMONID MIGRATION CORRIDORS - GENERAL

- (a) New and replacement docks in fresh water areas not containing juvenile salmonids may consist of a pier; pier, ramp, and float; ramp and float; floating dock, or a float only.
- (b) In waterbodies not containing juvenile salmonids, design dock structures so that no more than twenty percent of the float or floating dock grounds at any time. In

reservoirs and impoundments, this applies only during times of the year when water is present.

- (c) The department may require that the dock design include grating to minimize impacts to native aquatic vegetation.
- (6) PIER DESIGN IN AREAS CONTAINING NATIVE JUVENILE SALMONID MIGRATION CORRIDORS
- (a) Generally, the pier must not be wider than four feet for the first thirty feet from the shoreline, however, six feet may be allowed in waterbodies with good water clarity. After the first thirty feet from shoreline a six foot pier width is allowed. The maximum allowed width of an “L” or “T” is ten feet. However, eight feet is recommended. The department will make exceptions to the maximum pier width if there are engineering or safety constraints.
 - (b) Piers must extend far enough from the shoreline to avoid floats impacting the shallow water habitat.
 - (c) If the pier is oriented in a north/south direction, install grating in a direction that is parallel to the length of the pier for the entire length of the pier. If the pier is oriented in a different direction, install grating parallel to the width of the pier, evenly spaced along the entire length of the pier.
 - (d) The grating may have forty-two percent open area if the entire surface is covered. If the grating has sixty percent open area, a pier wider than four feet and up to six feet must have at least thirty percent functional grating installed on the deck surface and a pier wider than six feet up to ten feet must have at least fifty percent functional grating. Orient grating so the lengthwise opening maximizes the amount of light penetration. Any objects on, above, or below the grating should not block light penetration. In some waterbodies the department may require additional grating.
 - (e) The underside of pier must be at least one and one-half feet above the OHWL elevation.
- (7) RAMP DESIGN IN AREAS CONTAINING NATIVE JUVENILE SALMONID MIGRATION CORRIDORS
- (a) Ramps must not be more than four feet wide.
 - (b) Deck ramps entirely with grating.
- (8) FLOAT DESIGN IN AREAS CONTAINING NATIVE JUVENILE SALMONID MIGRATION CORRIDORS
- (a) Floats must not be wider than eight feet.
 - (b) A float six feet wide or narrower must have at least thirty percent functional grating installed on the deck surface. A float wider than six feet (up to eight feet

wide) must have at least fifty percent functional grating installed on the deck surface. The grating must have at least sixty percent open area. In some waterbodies the department may require additional grating. Locate flotation under the solid decked area only. Orient grating so the lengthwise opening maximizes the amount of light penetration. Any objects on, above, or below the grating should not block light penetration.

- (c) The freeboard height of floats must be at least ten inches.
- (d) Fully enclose and contain flotation for the structure in a shell (tub) or 20 - 25 mm polyethylene, polyurethane wraps that prevents breakup, or loss of the flotation material into the water, and is not readily subject to damage by ultraviolet radiation and abrasion.
- (e) Helical screw or "duckbill" anchor(s), piling, piling with stoppers and float support/stub pilings may hold floats in place.

(9) WATERCRAFT LIFT DESIGN

- (a) Design the watercraft lift/grid to minimize shading caused by the structure.
- (b) Design the watercraft lift/grid so that the bottom of the lift/grid rests at least twelve inches above the bed.
- (c) Use the smallest number of additional piles needed to support the watercraft lift/grid.
- (d) Limit wall materials to the minimum open structural framework needed for roof support.

(10) MOORING BUOY DESIGN

- (a) In waterbodies where mooring buoy systems might damage the bed and submerged aquatic vegetation, locate and design the buoy system to minimize damage.
 - (i) Locate the buoy deep enough to prevent vessel grounding.
 - (ii) Locate the buoy to avoid shading impacts from vessels and/or damaging submerged aquatic vegetation from vessel propellers.
 - (iii) Design and install the buoy system so that anchor lines do not drag.
 - (iv) Unless there are geological, engineering, safety, or environmental constraints, use an embedment-style mooring anchor instead of a surface-style mooring anchor.
 - (v) Adequately size the mooring to prevent the anchor from shifting or dragging along the bed.
- (b) The mooring buoy must have a shell that is not readily subject to damage by ultraviolet radiation and abrasion caused by rubbing against vessels, the bed,

and/or waterborne debris.

(11) RESIDENTIAL DOCK, WATERCRAFT LIFT AND BUOY CONSTRUCTION

- (a) Operate and anchor vessels and barges such that they do not adversely impact native aquatic vegetation.
- (b) Re-establish the dock centerline during the construction phase using the same methodology used to establish the centerline on the construction drawings.
- (c) Unless there are geological, engineering, or safety constraints, use a vibratory hammer to drive steel piling.
- (d) When impact pile driving is needed, use the smallest drop or hydraulic impact hammer needed to complete the job, and set the drop height to the shortest needed to drive the piling.
- (e) The department may require sound attenuation such as bubble curtains to minimize harm to fish from impact steel pile-driving noise.
- (f) To avoid attracting fish to lights at night, limit pile driving to daylight hours.
- (g) The department may require the following during piling removal:
 - (i) Use a vibratory system to dislodge piling unless there are engineering, safety, or environmental constraints.
 - (ii) After removal, place the piling on a construction barge or other dry storage site.
 - (iii) If a treated wood pile breaks during extraction, remove the stump from the water column by fully extracting the stump, cutting it three feet below the substrate, or pushing it to that depth.
 - (iv) Cap the buried stump with clean sediment that matches the native material.
 - (v) Fill holes left by piling extraction with clean sediment that matches the native material.
- (h) Securely anchor floats and mooring buoys.
- (i) If the department authorizes the use of a concrete anchor, use a pre-cast concrete anchor.
- (j) Dispose of replaced piers, ramps, floats, lines, chains, cables, and mooring anchors in an upland area.
- (k) Place floats and buoys removed seasonally in an upland area. Do not store on the beach.