



# Washington Department of Fish and Wildlife Drought Response 2015

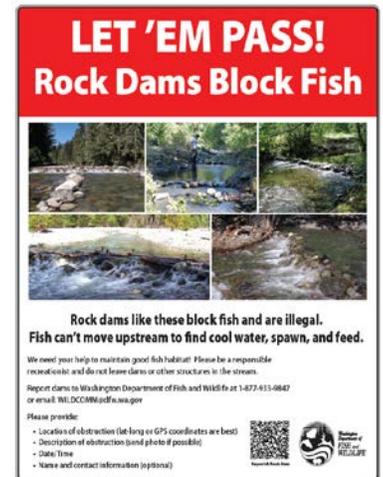
Drought Cost Estimates Overview for 13 May 2015 Joint Legislative Committee on Drought  
Teresa Scott, Water Resource Policy Coordinator

WDFW 2015-16 Projected Drought Costs					
Program	Activity	Operating Budget			Capital Budget
		FY 2015	FY 2016	Total	FY 2016
All-Agency	Coordination	\$27,000	\$67,400	\$94,400	
Habitat	Adult fish passage intervention		\$62,900	\$62,900	
	Drought "Let 'em Pass" signs	\$1,300		\$1,300	
Hatcheries	Disease treatments		\$215,000	\$215,000	
	Aerators/Recirculation pumps	\$134,500		\$134,500	
	Pumping costs (utility bill)		\$64,900	\$64,900	
	Dissolved oxygen meters	\$23,900		\$23,900	
	Overtime for broodstock collection		\$18,900	\$18,900	
	Water supply improvements				\$465,000
	Lands	Drought hazard signs	\$1,300		\$1,300
	Water right transfer assistance	\$7,200	\$18,000	\$25,200	
	Maintain water access				\$80,000
<b>All-Agency</b>	<b>Totals</b>	<b>\$195,200</b>	<b>\$447,100</b>	<b>\$642,300</b>	<b>\$545,000</b>

**Total costs estimated for WDFW 2015 drought response:** \$ 1,187,300

**Adult fish passage intervention:** Upstream migration can be delayed or blocked because flows are too low for fish to swim. Fish congregate in pools and deplete available oxygen, are vulnerable to illegal harvest, and can die if conditions aren't remediated. Example solutions include 1) salvaging dead or dying fish (removing them); 2) trapping adult fish and hauling them upstream or to a hatchery facility; 3) modifying a blocked channel to restore passage. WDFW last performed these activities during the 2005 drought; cost estimates for 2015 are based on a range of individual-project costs from \$2,500 to \$25,000. We estimated 10 such projects statewide at \$6,290 each. We are watching literally every stream in Washington for occurrence of these problems.

**Signage:** WDFW posts two types of signs during low-water events. At water access sites, WDFW posts signs warning boaters of hazards that are uncovered at low water. WDFW also posts signs reminding river recreationists that leaving rock dams across rivers can impede or prevent fish migration during low stream flows, and are illegal.



**Disease treatments:** Fish are more vulnerable to disease when water temperatures are warm. Depending on the disease, treatments can include antibiotic fish food or treating hatchery water with formalin or salt. We estimated treating fish at a minimum of 18 locations for three months starting in July-August 2015.

**Aerators and re-circulation pumps:** Many hatchery facilities do not have backup water supplies. When flow is reduced and temperatures are warm, hatcheries can keep fish alive by recirculating water and increasing the amount of oxygen in the water. This type of action was anticipated at 10 facilities: Elwha, Sol Duc, Bogachiel, Mayr Ponds, Humptulips, Grays River, Mossyrock, Merwin, Speelyai, Ford, and Spokane hatcheries. We rent or purchase pumps, and oxygenate using compressed air tanks or using low-tech diffusion boxes that WDFW fabricates.

**Pumping costs:** For hatcheries having groundwater or surface water backup water supplies, costs for additional electricity to pump water supply from these sources is significant to WDFW. Hatcheries reporting the potential for additional pumping costs in 2015 include: Samish, Wallace, Tokul, George Adams, Hurd Creek, Sol Duc, Forks Ck, and Naselle hatcheries.

**Dissolved oxygen meters:** WDFW plans to purchase four new oxygen meters so that more hatcheries can monitor water for oxygen levels.

**Broodstock collection:** Most hatcheries have structures through which adult fish return to the facility. At low flows, the access to these structures can be blocked. This means hatchery staff must collect adult fish from a location off the hatchery grounds. The labor costs to pursue broodstock can be significant to WDFW in a drought year. Special efforts will be needed to collect broodstock for Whitehorse Ponds, Dungeness Hatchery, Chiwawa/Eastbank facilities, and Issaquah Creek.

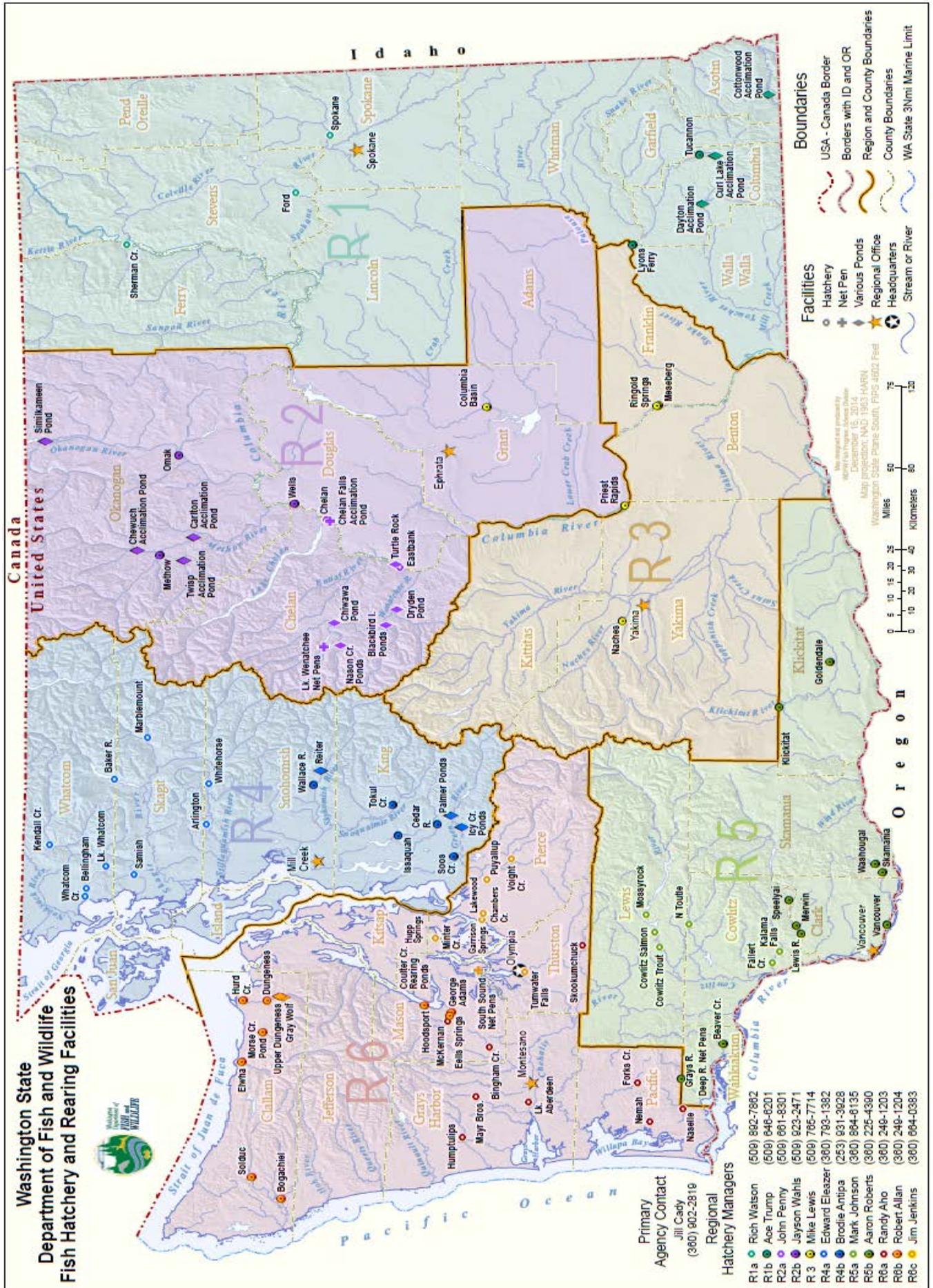
**Water Supply improvements:** WDFW is reviewing all hatchery facilities to ensure that water supply can be sustained over low flow months in 2015. Work ranges from reconstructing water intake plumbing to well system renovations to performing maintenance dredging at water intake channels. These are activities that are already scheduled for future work, but have become urgent because of anticipated conditions in 2015. The initial list of hatcheries requiring water supply improvements included Marblemount, Tokul, Dungeness, George Adams, McKernan, Naselle, Kalama Falls, Chiwawa, Vancouver, and Naches hatcheries and Upper Dungeness and Graywolf ponds.

**Water right transfer assistance:** WDFW is planning to review irrigation activities and other water use on agency lands that might be foregone in 2015 so water can contribute to enhanced stream flows.

**Maintain water access:** WDFW owns about 700 water access sites statewide. WDFW seeks to maintain access at three-to-four sites in 2015, which will be chosen out of a list of 10 sites initially prioritized for this work. These sites become hazardous for users under low flow or low lake elevation conditions, so ramps are extended and drive surfaces renovated. Ramps on the initial list for consideration in 2015 included: Thrall – Ringer Road Access, Mattoon Access, Granger Pond Access, Mellis Road Access (Yakima Basin); Silver Lake Access, Lake Whatcom Access (Nooksack Basin); Campbell Lake Access (Skagit Basin); Spencer Lake Access (Mason County); Offut Lake Access (Thurston County). Ramps that can't be fixed this year will be closed when their use becomes unsafe.



# Washington Department of Fish and Wildlife Fish Hatchery & Rearing Facilities





# LET 'EM PASS! Rock Dams Block Fish



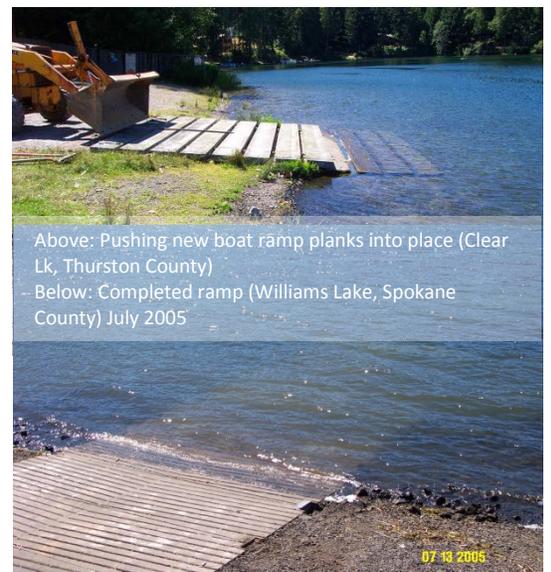
**Rock dams like these block fish and are illegal.**



Above: Dungeness River at Old Olympic Hwy on April 16, 2015  
Below: Dungeness River at Old Olympic Hwy on May 10, 2015



Above: In 2005 Box Canyon Creek goes sub-surface before reaching Lake Kachess.  
Below: Box Canyon Creek channel modification 2005 (flume) connects creek with lake.



Above: Pushing new boat ramp planks into place (Clear Lk, Thurston County)  
Below: Completed ramp (Williams Lake, Spokane County) July 2005