



Memorandum

OREGON DEPARTMENT OF FISH AND WILDLIFE UMPQUA WATERSHED DISTRICT

Date: October 27, 2003

To: Files

From: Dave Loomis

Subj: Cost Estimates for Diamond Lake Alternatives 1-4

I have been asked by the USFS ID Team to complete cost estimates for different activities within each of the four alternatives included in the Diamond Lake DEIS (draft October, 2003). Each of the activities was assumed to cover 2004-2009 (six years).

Alternative 1 (No Action / Legal-size trout)

- ODFW Fish Stocking (2004-2009) **\$171,000**

Current ODFW base program is 8000 pounds of fish stocked in Diamond Lake annually. Stocking under this alternative would be "legal-size" rainbow trout (3 per pound or about 8-inches in length). 24,000 fish release at \$3.30 per pound or \$1.10 per fish (2004 cost estimate based on ODFW direct costs in 01/03 biennium including fingerlings to trophy size trout, Fish Division, October 2003) Cost estimate for 2004 release is \$26,400. Following years projected 3% annual increase in cost per pound. Maximum annual cost estimate is \$31,000 for 2009.

Alternative 2 (Proposed Action / rotenone + fingerlings/catchable-size trout)

- ODFW Fish Stocking (2004-2009) **\$177,000**

Current ODFW base program is 8000 pounds of fish stocked in Diamond Lake annually. Stocking alternative would be "legal-size" rainbows for 2004 and early 2005 (prior to fish removal efforts before rotenone treatment). Post Treatment stocking levels will be guided by ecological recovery rate of lake, fish survival and growth rates, and fishery effort and harvest. Stocking levels based on annual fingerlings releases ranging from 100K to 300K(2006 to 2009), and 10,000 catchable size trout (2.5 per pound or about 9 inches). Cost estimates in 2004 for fingerlings (50 per pound) are 6.6 cents per fish and catchable trout are \$1.32 each. Maximum annual stocking cost estimate is \$37,000 for 2009.

- ODFW Fish Removal (Trapnets, seines, gillnets) **\$50,000**

ODFW would hire seasonal fisheries workers to trap, collect, and remove tui chub using various netting activities in 2005 prior to treatment. Personal Services costs for Crew Leader plus 4 crewmembers with nets/boats/supplies for 3 months.

- ODFW Fish Monitoring (Creel surveys, trapnets, outmigrant trap, assist with other monitoring) **\$300,000**

ODFW would hire two seasonal fisheries workers to complete angler creel surveys, evaluations of trout population growth, survival, and behavior, and assist with water quality and biological indices data collection. Seven months per year (April- October) Personal Services costs for 2 biologists plus supplies/mileage is \$50,000 annually, no projected annual cost increase.

Alternative 3 (rotenone + “put-and-take”-size trout)

- ODFW Fish Stocking (2004-2009) **\$3,176,000**

Current ODFW base stocking program is 8000 pounds of fish stocked annually in Diamond Lake. Stocking under this alternative would be 24,000 “legal-size” trout only prior to rotenone treatment (2004 and 2005), followed by combination of “legal-size” rainbow trout and “put-and-take” trout releases. Put-and-take trout average 1 pound and about 12 inches in length. Cost estimate in 2004 for legal-size trout is \$1.10 per fish and \$2.85 each for 1-pound fish (sterile, domestic rainbow stock) purchased by ODFW from private trout farms (Fish Division, October, 2003). Following years projected 3% annual increase in cost per pound. Post treatment stocking levels for put-and-take trout will be guided by fishery effort and harvest, trout survival and growth rates, and ecological recovery rate of lake and predicted to range from 100,000 to 400,000 fish annually. Legal-size trout stocking predicted to remain near 24,000 fish annually. Annual stocking cost estimate is \$1.27 million for 424,000 fish in 2009.

- ODFW Fish Removal (Trapnets, seines, gillnets) **\$50,000**

ODFW would hire seasonal fisheries workers to trap, collect, and remove tui chub using various netting activities in 2005 prior to treatment. Personal Services costs for Crew Leader plus 4 crewmembers with nets/boats/supplies for 3 months (\$40,000 Personal Services and \$10,000 equipment/mileage/nets).

- ODFW Fish Monitoring (Creel surveys, trapnets, outmigrant trap, assist with other monitoring) **\$300,000**

ODFW would hire two seasonal fisheries workers to complete angler creel surveys, evaluations of trout population growth, survival, and behavior, and assist with water quality and biological indices data collection. Seven months per year (April- October) Personal Services costs for 2 biologists plus supplies/mileage is \$50,000 annually, with no projected annual cost increase.

Alternative 4 (Mechanical/Biological)

- ODFW Fish Removal (Trapnets, seines, gillnets) **\$270,000**

ODFW would hire seasonal fisheries workers to trap, collect, and remove tui chub using various netting activities annually for 6 years. Personal Services costs for Crew Leader plus 4 crewmembers with nets/boats/supplies for 3 months each year. Total estimated personal services costs is \$40,000 per year or \$240,000 total. Annual equipment costs would be \$10,000 in year 1 and year 4 (initial and replacement equipment costs included) and \$2500 in remaining years (supplies only). No projected annual cost increases.

- ODFW Fish Stocking 2004-2009 **\$3,000,000**

Current ODFW base program is 8000 pounds of fish stocked in Diamond Lake annually. The stocking proposal under this alternative would be significantly higher starting in 2004. 85,000 catchable trout (2.5 per pound or about 9 inches) and 15,000 trophy trout (2 pounds each or about 15 inches) would be stocked in 2004. 100,000 catchable trout and 50,000 trophy trout would be stocked in 2005. 2006-2009 stocking levels would average about 200,000 catchable trout and 50,000 trophy trout annually. The cost of a catchable trout in 2004 is estimated at \$1.32 each (\$3.30 per pound) and the trophy trout cost is \$5.50 (\$2.75 per pound). Following years projected a 3% annual increase in costs. Annual stocking cost estimate is \$624,000 for 250,000 fish in 2009.

- ODFW Fish Monitoring (Creel surveys, trapnets, outmigrant trap, fish diet studies, assist with other monitoring) **\$400,000**

ODFW would hire two seasonal fisheries workers to complete angler creel surveys, evaluations of trout population growth, survival, and behavior, and assist with water quality and biological indices data collection. Seven months per year (April- October) Personal Services costs for 2 workers plus supplies/mileage is \$50,000 annually, with no projected annual cost increase. A seasonal (5 months) fisheries biologist would be hired to assist with the data compilation and analysis from the stocking program and the mechanical removal efforts to provide timely evaluation of each fish release group. Estimated cost of personal services and equipment/supplies is \$20,000 annually for 2005-2009.

Rotenone Application Cost for Alternatives 2 & 3 (\$450,000-500,000)

The following budget detail was prepared based on the following estimated cost of activities in 2004 and 2005.

ODFW Project Coordinator (12 months)	\$75,000
Boats (Rentals/Transport/Supplies)	\$30,000
HAZMAT & Safety Equipment/Training	\$20,000
Engineering Design (Outlet weir, tributary weirs and traps)	\$25,000
Construction (ramps, docks, material storage,)	\$50,000
Outlet Weir Construction	\$100,000
Security (planning/coordination, training, implementation)	\$15,000
Chemical Application (lake, drip stations, equipment, training, Seasonal workers salaries, per diem, supplies)	\$150,000
<u>Total Estimate</u>	<u>\$465,000 (\$450-500K)</u>