
MEMORANDUM

12009 NE 99th Street, Suite 1410
Vancouver, WA 98682-2497
Phone 360-883-0191
503-241-5698
Facsimile 360-883-0292

TO: Edward Maillett, USFWS

FROM: Scott Cole and Krieg Brown

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RE: Estimated Economic Impacts of Conservation Efforts in
Final Designated Critical Habitat for Three Populations of
Bull Trout: Coastal-Puget Sound, Jarbidge River, and
Saint Mary-Belly River

The June 2005 Economic Analysis of Proposed Critical Habitat Designation (CHD) for the Three Populations of Bull Trout (EA) assesses the potential economic impacts in areas contemplated for CHD for the bull trout as described by the U.S. Fish and Wildlife Service (Service) in the Proposed Rule.¹ The geographic scope of the EA is consistent with the Proposed Rule and therefore does not reflect changes made to critical habitat (CH) boundaries in the Final Rule. This memorandum provides information on the economic impacts of conservation efforts for the bull trout within the final CH as described in the Final Rule.²

The Service excluded certain watersheds, as well as Federal lands covered by the Northwest Forest Plan, from final CH in the Puget Sound and Olympic Peninsula units. Other changes to the proposed CHD in the Final Rule include the removal of reservoirs and pools behind dams whose primary purpose is energy production, flood control, or water supply.³ The Jarbidge Unit was removed in its entirety. The Saint Mary-Belly River Unit was reduced considerably, including the removal of Blackfoot Indian Reservation lands. Details of the geographic scope of the final CH and reasons for the various exclusions are described in detail in the Final Rule.⁴

Table 1 provides an estimate of the economic impacts of bull trout conservation efforts in areas designated as CH for the species in the Final Rule. Within the areas designated as CH, the annualized

¹ U.S. Fish and Wildlife Service, June 25, 2004, "Proposed Designation of Critical Habitat for the Jarbidge River, Coastal-Puget Sound, and Saint Mary-Belly River Populations of Bull Trout, Proposed Rule," *Federal Register*, Vol. 69, No. 122, pp. 35768-35857.

² U.S. Fish and Wildlife Service, September 26, 2005, "Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for the Bull Trout, Final Rule," *Federal Register*, Vol. 70, No. 185.

³ Note that in some cases the wording in the Final Rule is inconsistent with the actual maps of the final CHD provided by the Service. Where inconsistencies exist, this Memo relies on the maps.

⁴ See also U.S. Fish and Wildlife Service News Release "U.S. Fish and Wildlife Service Designates Critical Habitat for Bull Trout," September 23, 2005, <http://species.fws.gov/bulltrout>.

economic impacts are estimated to total approximately \$46.8 million, with \$46.5 million stemming from the designation of the Puget Sound and Olympic Peninsula units.

**Table 1
Comparison of Economic Impacts of Conservation Efforts for the Bull Trout in Areas
Proposed for CHD with Areas Designated as Final CH (\$1,000s)**

Region	CHD	Prospective Total		Prospective (Annualized)
		3%	7%	
Coastal-Puget Sound ¹	Proposed ²	\$994,151	\$679,044	\$60,738
	Final	\$735,145 – \$740,436	\$511,031 – \$513,869	\$46,328 – \$46,533
Jarbridge River	Proposed	\$2,885	\$2,071	\$215
	Final	\$0	\$0	\$0
St Mary-Belly River	Proposed	\$12,718	\$8,770	\$828
	Final	\$4,207	\$2,755	\$260
Total	Proposed	\$1,009,754	\$689,885	\$61,781
	Final	\$739,352 – \$744,643	\$513,786 – \$516,624	\$46,588 – \$46,793

¹ Some of the Coastal-Puget Sound impacts are co-extensive with salmon conservation activities, as detailed in the EA.

² Proposed CHD costs reflect the “Author’s Note” found directly after the Title Page of the June 2005 EA and therefore differs from Table ES-1 in that report.

The June 2005 EA estimated impacts associated with bull trout conservation efforts for three different categories of lands identified in the Proposed Rule: (1) lands proposed for CH, (2) excluded lands (conservation activities of existing HCPs that totaled \$14.8 million per annum), and (3) proposed for exclusion lands (conservation activities on private forest lands under the Washington Forest Practice Rules that totaled \$20.1 million per annum). The last two categories (excluded and proposed for exclusion) were never part of the EA’s estimate of impacts associated with the proposed CH and, as such, are not discussed further in this memo. The following describes how costs associated with bull trout conservation efforts in areas designated as final CH for the species were isolated from the impacts reported in the June 2005 EA.

Olympic Peninsula (Unit 27) and Puget Sound (Unit 26) (Coastal-Puget Sound)

- **Removal of seven watersheds in the Puget Sound Unit:** The EA quantified approximately \$5.2 million (annualized) in costs associated with a variety of activities⁵ in seven watersheds⁶ in the Puget Sound Unit. These seven watersheds have been removed from the final CHD; therefore, costs associated with bull trout conservation efforts within these watersheds are not included in the estimate

⁵ Note that \$3.0 million of the \$5.1 million removed was associated with fish passage and fish screen improvements at the Howard Hansen Dam (a non-hydroelectric facility).

⁶ The geographic unit of analysis in all proposed CH units is the fifth-field Hydrologic Unit Code (HUC), as defined by the U.S. Geological Survey, which corresponds to watersheds.

of impacts associated with final CHD. The following bullets isolate the *additional economic impacts* (i.e., those not already accounted for due to the removal of these seven watersheds) of bull trout conservation efforts within the final CHD in the remaining watersheds.

- **Exclusion of U.S. Forest Service lands covered by the Northwest Forest Plan and other Federal Land Management Plans:** The EA quantified approximately \$6.9 million (annualized) in costs associated with timber harvest conservation measures on Federal lands in the Olympic Peninsula and Puget Sound units. Because approximately \$1.0 million of impacts were previously isolated (see first bullet above), an additional \$6.0 million in impacts are not included in the estimate of impacts associated with final CH.
- **Removal of costs associated with hydroelectric facilities:** The EA quantified approximately \$5.1 million (annualized) in impacts associated with fish passage improvements, fish screens, habitat enhancement, and monitoring costs at 16 hydroelectric facilities. The final CHD removes certain stream lengths, thus impacts associated with these activities at some of these facilities are not relevant. To determine whether the economic impacts are incurred under the Final Rule, this memo considers the location of the facility relative to the final CHD. For example, impacts associated with two facilities (\$150,000, annualized) are not included in the estimate of impacts associated with the final CH because the facilities' watershed do not contain designated habitat (see first bullet above). Impacts associated with other facilities, however, are considered on a case-by-case basis. For example, nine facilities are adjacent to (i.e., immediately upstream or downstream of) the final CH, and thus economic impacts of bull trout conservation efforts are considered habitat-related impacts. Therefore, \$4.8 million (annualized) in costs associated with these facilities are included in the estimate of economic impacts associated with the final CHD. The CHD is not, however, in the immediate vicinity of the remaining five facilities. In order to capture the uncertainty associated with whether bull trout conservation efforts at these facilities are "habitat-related" impacts, this memo presents the final impacts associated with hydroelectric facilities in the CH area as a range: in the low impact range, these five facilities are considered to be located outside the CH; in the high impact range, these impacts (\$131,000, annualized⁷) are assumed to be habitat-related and, thus, are included in the estimate of economic impacts associated with the final CHD.
- **Removal of costs associated with non-hydroelectric facilities:** The EA quantified approximately \$5.9 million (annualized) in costs associated with fish passage improvements and fish screens at 20 non-hydroelectric dams. As discussed in the preceding paragraph for hydroelectric dams, certain stream lengths were not included in the final CHD. Thus, impacts associated with final CHD are less than those quantified in the EA associated with proposed CHD, depending on the location of the facility relative to the final CHD. Costs associated with three facilities (\$3.2 million, annualized) are not included in the estimate of economic impacts associated with the final CH because the facilities' watershed no longer contains designated habitat (see first bullet above). Impacts associated with three other dams (\$2.7 million, annualized) are considered habitat-related due to the proximity of the facilities to the final CHD and are therefore included in the estimate of economic impacts associated with the final CHD. The impacts associated with the remaining 14 facilities are presented as a range,

⁷ Note \$131,000 excludes the impacts associated with the Tolt River hydroelectric dam discussed in the "Author's Note."

as discussed above for hydroelectric facilities. At the low end of the range, the 14 facilities are assumed to be located outside of the CH. At the high end, the impacts (\$74,000, annualized) are assumed to be habitat-related and, thus, are included in the estimate of economic impacts associated with the final CHD.

- **Removal of costs associated with the Plum Creek/Simpson HCP Agreement:** The Final Rule excludes lands covered by five HCP agreements. Impacts associated with four of these agreements were assessed in the EA as impacts associated with the excluded area and, therefore, are not relevant to the impacts associated with areas proposed for CHD (see discussion above). However, a fifth HCP was assessed as part of the *proposed* category in the EA and subsequently excluded in the Final Rule. Because the Service explicitly excluded these lands, the costs associated with this agreement are no longer relevant to the analysis. \$185,000 (annualized) in impacts related to this HCP was previously isolated (see first bullet above). Therefore, \$445,000 (annualized) in impacts associated with this agreement are not included in the estimate of economic impacts associated with final CHD.
- **Removal of Federal and State agency impacts associated with Section 7 Consultations:** Future Section 7 consultation costs associated with proposed CH were estimated in the EA based on the historic consultation record for bull trout in the Coastal-Puget Sound region. As the final CH was reduced in the Coastal-Puget Sound region by an average of 35 percent, these impacts have been reduced by a proportional amount, thus excluding \$2.6 million (annualized) in the estimate of impacts associated with the final CHD.

Saint Mary – Belly River Unit (Unit 29)

- **Adjustment of project modification costs at St. Mary Diversion and Sherburne Dam:** The EA quantifies approximately \$425,000 in project modification costs (annualized) at the Sherburne Dam and St. Mary Diversion to allow for fish passage and fish screens. Because the CH no longer exists in the general vicinity of these facilities, these costs are not considered habitat-related and, therefore, are not included in the estimate of impacts associated with the final CHD. However, costs associated with modifying Sherburne Dam (\$66,100, annualized) to allow for instream flow during the dry winter months, as well as the resulting social welfare loss to water users resulting from a higher price (\$36,000 to \$55,000, annualized), are included in the estimate of impacts associated with the final CHD. The instream flow modification costs are included because these conservation efforts benefit the final CH area that exists approximately four kilometers downstream from Sherburne Dam.
- **Removal of Federal and State agency costs associated with Section 7 Consultations:** Future Section 7 consultation costs associated with the proposed CH were estimated in the EA based on the historic consultation record for bull trout in the St Mary-Belly River region. Since the final CHD was reduced in the St Mary-Belly Unit by an average of 47 percent, these impacts have been reduced by a proportional amount, thus excluding \$123,000 in the annualized estimate of impacts associated with the final CHD.
- **Blackfeet Indian Reservation administration costs:** The EA estimated approximately \$20,000 (annualized) in administrative costs associated with consultation and monitoring for the Blackfeet

Tribe. Since all Blackfeet Tribal lands have been removed in the final designation, these impacts are not included in the estimate of impacts associated with the final CHD.

Jarbidge River Unit (Unit 26)

- **Removal of CH in Jarbidge River Unit:** The EA quantifies approximately \$215,000 (annualized) in impacts associated with roads and transportation, grazing, and Section 7 consultation efforts with Federal and State agencies in this unit. Since the Service has not designated CH in the Jarbidge River Unit, these costs are not included in the estimate of impacts associated with the final CHD.