

FINAL REGULATORY FLEXIBILITY ANALYSIS

Prepared for

NOAA Fisheries Northwest Region

August 5, 2005

Prepared by

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I. Introduction and Summary

For each rule an agency promulgates and does not certify as having no significant impact on a substantial number of small entities, the Regulatory Flexibility Act of 1980, as amended (RFA) (5 U.S.C. § 601-612) requires the agency to prepare and make available for public comment a final regulatory flexibility analysis (FRFA) that describes the impact of the rule on small businesses, nonprofit enterprises, local governments, and other small entities.

The Endangered Species Act of 1973, as amended (ESA) (16 U.S.C. § 1531-1544) requires NOAA Fisheries to designate critical habitat for threatened and endangered species to the maximum extent prudent and determinable. Section 4(b)(2) of the ESA requires that critical habitat be designated “on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat.” This section grants the Secretary [of Commerce] discretion to exclude any area from critical habitat if he determines “the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat.” The Secretary's discretion is limited, as he may not exclude areas if it “will result in the extinction of the species.”

Once critical habitat is designated, section 7 of the ESA requires Federal agencies to ensure they do not fund, authorize or carry out any actions that will destroy or adversely modify that habitat. This requirement is in addition to the section 7 requirement that Federal agencies ensure their actions do not jeopardize the continued existence of listed species.

This FRFA addresses regulations that designate critical habitat for 12 Pacific salmon and steelhead evolutionarily significant units (ESUs) listed as “threatened” or “endangered” under the provisions of the ESA. Table 1 describes each ESU in terms of ESA status, listing date and geographical scope.

Table 1. Descriptions of the 12 Pacific Salmon and Steelhead ESUs

ESU	ESA Status/ Listing Date ¹	Geographic Scope (State and County)
Upper Willamette River Steelhead	Threatened 3/99	OREGON—Benton, Clackamas, Linn, Marion, Multnomah, Polk, Washington, Yamhill
Upper Willamette River Chinook Salmon	Threatened 3/99	OREGON—Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington, Yamhill
Lower Columbia River Steelhead	Threatened 3/98	OREGON—Clackamas, Columbia, Hood River, Marion, Multnomah, Wasco, Washington, Yamhill WASHINGTON—Clark, Cowlitz, Klickitat, Lewis, Skamania
Lower Columbia River Chinook Salmon	Threatened 3/99	OREGON—Clackamas, Clatsop, Columbia, Hood River, Marion, Multnomah, Wasco, Washington, Yamhill WASHINGTON—Clark, Cowlitz, Klickitat, Lewis, Pacific, Skamania, Wahkiakum
Columbia River Chum Salmon	Threatened 3/99	OREGON—Clatsop, Hood River, Multnomah, Wasco WASHINGTON—Clark, Cowlitz, Klickitat, Lewis, Pacific, Skamania, Wahkiakum
Ozette Lake Sockeye Salmon	Threatened 3/99	WASHINGTON—Clallum
Hood Canal Summer-run Chum Salmon	Threatened 3/99	WASHINGTON—Clallum, Jefferson, Kitsap, Mason
Upper Columbia River Spring-run Chinook Salmon	Endangered 3/99	OREGON—Gilliam, Hood River, Morrow, Multnomah, Sherman, Umatilla, Wasco, WASHINGTON—Benton, Chelan, Clark, Douglas, Franklin, Grant, Kittitas, Klickitat, Okanogan, Skamania, Walla Walla

ESU	ESA Status/ Listing Date ¹	Geographic Scope (State and County)
Upper Columbia River Steelhead	Endangered 8/97	OREGON—Gilliam, Hood River, Morrow, Multnomah, Sherman, Umatilla, Wasco, WASHINGTON—Benton, Chelan, Clark, Douglas, Franklin, Grant, Kittitas, Klickitat, Okanogan, Skamania, Walla Walla
Middle Columbia River Steelhead	Endangered 3/99	OREGON—Gilliam, Grant, Hood River, Jefferson, Morrow, Multnomah, Sherman, Umatilla, Wasco, Wheeler, WASHINGTON—Benton, Clark, Columbia, Franklin, Kittitas, Klickitat, Skamania, Walla Walla, Yakima
Puget Sound Chinook Salmon	Threatened 3/99	WASHINGTON—Clallam, Jefferson, King, Kitsap, Mason, Pierce, Skagit, Snohomish, Thurston, Whatcom
Snake River Basin Steelhead	Threatened 8/97	IDAHO—Adams, Blaine, Clearwater, Custer, Idaho, Latah, Lemhi, Lewis, Nez Perce, Valley, OREGON—Union, Wallowa WASHINGTON—Asotin, Columbia, Garfield, Whitman

Summary of Impacts on Small Entities

An estimate of the number of firms in each ESU that are subject to the rule and meet the SBA small business classification standard is provided in Table 2. The number of regulated small entities under the final designation of critical habitat ranges from zero to 2,945 depending on the ESU (Table 2). The estimated costs of ESA section 7 implementation incurred by small entities under the final designation of critical habitat range from \$2.4 thousand to \$59.4 million depending on the ESU (Table 2). The estimated total section 7 implementation costs across all ESUs are \$133.2 million.

Table 2. A Comparison of the Final Critical Habitat Designation and Critical Habitat Designation with No Areas Excluded by ESU

ESU	Alternative 1: Critical Habitat Designation with No Areas Excluded		Final Critical Habitat Designation		Difference Between Critical Habitat Designations	
	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)	Reduction in No. of Regulated Small Entities	Reduction in Economic Impacts on Small Entities (\$)
Lower Columbia River Chinook	2,700	27,117,350	1,885	19,895,678	-815	-7,221,672
Puget Sound Chinook	5,136	77,358,680	2,710	59,419,599	-2,427	-17,939,080
Upper Columbia River Spring-run Chinook	1,369	10,473,719	1,368	9,046,731	-1	-1,426,988
Upper Willamette River Chinook	3,602	20,778,652	2,945	16,595,797	-657	-4,182,855
Columbia River Chum	1,010	13,070,337	1,002	12,939,251	-8	-131,086
Hood Canal Summer-run Chum	244	5,381,290	228	5,379,488	-17	-1,802
Ozette Lake Sockeye	0	2,375	0	2,375	0	0
Lower Columbia River Steelhead	2,390	25,363,467	1,793	19,729,002	-597	-5,634,465
Middle Columbia River Steelhead	2,434	23,640,923	2,336	21,192,730	-97	-2,448,193
Snake River Basin Steelhead	1,370	15,688,865	1,284	15,349,068	-86	-339,798
Upper Columbia River Steelhead	1,712	17,963,027	1,617	12,939,893	-94	-5,023,134
Upper Willamette Steelhead	3,305	12,367,956	2,527	8,750,274	-778	-3,617,681
All ESUs ¹	14,955	164,006,927	11,256	133,192,204	-3,699	-30,814,723

¹ Many of the ESUs overlap; thus, the row labeled “All ESUs” estimates unique effects and is not simply the sum of all ESUs.

Source: Northern Economics, Inc. analysis based on data from NOAA Fisheries Northwest Region. The data and method of analysis are described in Appendix A: Estimate of the Number of Small Entities to Which the Rule will Apply and Appendix B: Estimate of the Economic Impacts on Small Entities by ESU.

NOAA Fisheries did not consider the alternative of not designating critical habitat for the 12 Pacific salmon and steelhead ESUs because that alternative does not meet the legal requirements of the Endangered Species Act.

NOAA Fisheries did consider the following two significant alternatives to the final designation of critical habitat:

1. Designate all particular areas that meet the definition of critical habitat as given in section 3(5)(A) of the ESA;
2. Designate only particular areas that meet the definition of critical habitat with a high conservation value.

Under the first alternative, no areas are excluded for economic or other reasons. Through the section 4(b)(2) process of weighing benefits of exclusion against benefits of designation, NOAA Fisheries determined that the final designation of critical habitat provided an appropriate balance of conservation and economic mitigation, and that excluding the areas proposed for exclusion would not result in extinction of the species. The final designation would reduce the adverse economic impacts on entities, including small entities. It is estimated that excluding areas from the rule designating critical habitat could save small entities from zero to \$17.9 million in compliance costs depending on the ESU (Table 2). The estimated total savings across all ESUs are \$30.8 million.

NOAA Fisheries examined and rejected the second alternative of excluding all habitat areas with a low or medium conservation value.¹ The agency determined that this alternative reduces economic impacts relative to the final designation of critical habitat; however, for many habitat areas the incremental economic gain from excluding that area is relatively small (Table 3). Moreover, this alternative is not sensitive to the fact that for most ESUs, eliminating all low and medium value habitat areas is likely to significantly impede conservation. Because the agency concluded that the benefits of exclusion would not outweigh the benefits of specifying these areas as part of the critical habitat, NOAA Fisheries rejected the second alternative.

¹The rating of individual watersheds for their conservation value is discussed in National Marine Fisheries Service, Assessment of NOAA Fisheries' Critical Habitat Analytical Review Teams for 13 Evolutionarily Significant Units of West Coast Salmon and Steelhead, NOAA Fisheries Northwest Region Report, July 2005, available from NOAA Fisheries at <http://www.nwr.noaa.gov/1salmon/salmesa/crithab/CHsite.htm>.

Table 3. A Comparison of the Final Critical Habitat Designation and Critical Habitat Designation with Areas of Low and Medium Conservation Value Excluded by ESU

ESU	Alternative 2: Critical Habitat Designation with Areas of Low and Medium Conservation Value Excluded		Final Critical Habitat Designation		Difference Between Critical Habitat Designations	
	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)
Lower Columbia River Chinook	1,803	18,561,726	1,885	19,895,678	82	1,333,951
Puget Sound Chinook	2,645	59,132,161	2,710	59,419,599	65	287,438
Upper Columbia River Spring-run Chinook	1,368	8,753,165	1,368	9,046,731	0	293,566
Upper Willamette River Chinook	2,689	15,680,902	2,945	16,595,797	256	914,895
Columbia River Chum	1,002	12,934,329	1,002	12,939,251	1	4,922
Hood Canal Summer-run Chum	156	4,344,597	228	5,379,488	71	1,034,891
Ozette Lake Sockeye	0	2,375	0	2,375	0	0
Lower Columbia River Steelhead	1,740	19,088,718	1,793	19,729,002	54	640,284
Middle Columbia River Steelhead	2,252	17,491,021	2,336	21,192,730	84	3,701,708
Snake River Basin Steelhead	1,223	14,051,917	1,284	15,349,068	61	1,297,151
Upper Columbia River Steelhead	1,540	10,889,320	1,617	12,939,893	77	2,050,573
Upper Willamette Steelhead	2,160	7,259,584	2,527	8,750,274	367	1,490,691
All ESUs ¹	10,425	125,081,946	11,256	133,192,204	831	8,110,258

¹ Many of the ESUs overlap; thus, the row labeled “All ESUs” estimates unique effects and is not simply the sum of all ESUs.

Source: Northern Economics, Inc. analysis based on data from NOAA Fisheries Northwest Region. The data and method of analysis are described in Appendix A: Estimate of the Number of Small Entities to Which the Rule will Apply and Appendix B: Estimate of the Economic Impacts on Small Entities by ESU.

In describing the economic effects of including or excluding a particular area from critical habitat, it is not accurate to include all of the co-extensive impacts because it is unlikely that the impacts attributable to critical habitat designation would ever account for the total impacts. However, in examining its extensive consultation record, NOAA Fisheries could not discern a difference in the impact of applying section 7’s jeopardy requirement versus applying the adverse modification requirement. For that reason, NOAA Fisheries decided to analyze the full impact of the adverse modification requirement, regardless of whether it is coextensive with other requirements, such as jeopardy.

NOAA Fisheries has made a substantial effort to gather information regarding the economic impact of the regulatory action on all entities, including small entities. However, unavailable or inadequate data leaves some uncertainty surrounding both the numbers of entities that will be subject to the rule and the characteristics of any impacts on particular entities.

II. Specific Requirement to Prepare an FRFA

Section 604(a)(1)–(5) of the RFA specifies the content of a FRFA. Each FRFA must contain:

1. A succinct statement of the need for, and objectives of, the rule;
2. A summary of the significant issues raised by the public comments in response to the initial regulatory flexibility analysis (IRFA), a summary of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments;

3. A description of and an estimate of the number of small entities to which the rule will apply or an explanation of why no such estimate is available;
4. A description of the projected reporting, recordkeeping and other compliance requirements of the rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record; and
5. A description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.

III. Need for and Objectives of the Rule

Section 4(a)(3) of the ESA and implementing regulations (50 CFR 424.12) require the Secretary to designate critical habitat concurrently with the listing of a species to the maximum extent prudent and determinable. Given that the 12 Pacific salmon and steelhead evolutionarily significant units are Federally-listed as threatened or endangered under the ESA, NOAA Fisheries finds that the designation of critical habitat is required.

The benefits of critical habitat designation derive from section 7 of the ESA, which requires Federal agencies, in consultation with NOAA Fisheries, to ensure that actions they carry out, permit, or fund are not likely to destroy or adversely modify critical habitat of such species. Moreover, a designation of critical habitat benefits a species by highlighting areas where the species occurs and by describing the features within those areas that are essential to the conservation of the species and that may require special management considerations or protection.

The purpose of the rule is to designate the critical habitat for 12 Pacific salmon and steelhead evolutionarily significant units pursuant to the ESA. NOAA Fisheries is responsible for determining whether species, subspecies, or distinct population segments of Pacific salmon and steelhead are threatened or endangered and which areas constitute critical habitat for them under the ESA. To be considered for listing under the ESA, a group of organisms must constitute a “species,” which is defined in section 3 of the Act to include “any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.” The agency has determined that a group of Pacific salmon or steelhead populations qualifies as a distinct population segment if it is substantially reproductively isolated and represents an important component in the evolutionary legacy of the biological species. A group of populations meeting these criteria is considered an “evolutionarily significant unit” (ESU) (56 FR 58612, November 20, 1991). In its ESA listing determinations for Pacific salmon and steelhead, NOAA Fisheries has treated an ESU as a “distinct population segment.” To date, NOAA Fisheries has identified a total of 27 Pacific salmon or steelhead ESUs as threatened or endangered under the ESA, 25 of which are presently listed and two of which are proposed for listing (69 FR 33101, June 14, 2004). Critical habitat has been designated for six of these ESUs, and 20 of these ESUs are currently under review for critical habitat designation.

As noted above, the ESA requires NOAA Fisheries to designate critical habitat for threatened and endangered species to the maximum extent prudent and determinable. Section 4(b)(2) of the ESA requires that critical habitat be designated “on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat.” This section grants the Secretary [of Commerce] discretion to exclude any area from critical habitat if he determines “the

benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat.” The Secretary's discretion is limited, as he may not exclude areas if it “will result in the extinction of the species.”

The ESA defines critical habitat under section 3(5)(A) as:

“(i) the specific areas within the geographical area occupied by the species, at the time it is listed . . . on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and

(ii) specific areas outside the geographical area occupied by the species at the time it is listed . . . upon a determination by the Secretary that such areas are essential for the conservation of the species.”

Once critical habitat is designated, section 7 of the ESA requires Federal agencies to ensure they do not fund, authorize or carry out any actions that will destroy or adversely modify that habitat. This requirement is in addition to the section 7 requirement that Federal agencies ensure their actions do not jeopardize the continued existence of listed species.

IV. Issues Raised by Public Comments on the Initial Regulatory Flexibility Analysis

Significant issues raised by interested stakeholders and the response of NOAA Fisheries to each of those issues are presented below.

Issue #1: One comment letter stated that the IRFA mischaracterizes the number of potential farms that would be affected by critical habitat designation. The analysis states that only three farms in Adams County, WA, may be affected by critical habitat designation, while USDA reports that there are 717 farms in the county.

Agency Response: The IRFA identified potential impacts to small entities using data from Dun & Bradstreet’s Market Identifiers on the ratio of small businesses to total businesses in potentially affected industries within counties containing proposed critical habitat. The initial analysis listed a single type of agricultural operation: Beef Cattle Ranching and Farming. The estimated number of these operations in a county was weighted by the proportion of that county covered by the critical habitat designation. In the case of Adams County, only a portion of the county is covered by the proposed critical habitat designation. The FRFA includes three types of crop production: Oilseed and Grain Farming, Vegetable and Melon Farming, and Fruit and Tree Nut Farming.

Issue #2: Another comment stated that the IRFA needs more citations regarding the applied sources of information.

Agency Response: Source notes have been added to all tables presenting analytical results. In most cases these notes refer the reader to detailed descriptions of data and methods provided in appendices in the FRFA.

Issue #3: One comment letter stated that the IRFA assumes that most compliance costs would be borne by third parties when, in fact, a significant portion of all section 7 related costs are not borne by those entities, but rather are borne by the U.S. Bureau of Reclamation (USBR).

Agency Response: In many cases it is unclear who will bear the costs of modification. The potentially burdened parties associated with modifications to activities are identified in the economic analysis. The USBR may, in fact, bear the cost of modifications to USBR dams, Federal land management activities, including logging, etc. Where information is not available on a per project basis regarding the potentially affected party, the analysis errs on the conservative

side, assuming that impacts may be borne by private entities, a portion of which may be small entities.

In addition to assessing and responding to public comments, NOAA Fisheries made two other changes to the proposed rule that have been incorporated into the FRFA. First, the Oregon Coast Coho Salmon ESU was removed pending further scientific review of the listing decision, thereby reducing the number of individual ESUs for which critical habitat designation is considered from thirteen to twelve.² A second change was that the proposed critical habitat designation and an alternative that excluded all habitat areas with a low or medium value were modified as follows: lands managed under two Habitat Conservation Plans, occupied by military installations, or owned by Federally recognized tribes were excluded from critical habitat.

V. Description and Number of Small Entities to which the Rule will Apply

Definition of a Small Entity

Three types of small entities are defined in the RFA:

Small Business. Section 601(3) of the RFA defines a small business as having the same meaning as small business concern under section 3 of the Small Business Act. This includes any firm that is independently owned and operated and is not dominant in its field of operation. The U.S. Small Business Administration (SBA) has developed size standards to carry out the purposes of the Small Business Act, and those size standards can be found in 13 CFR 121.201. The size standards are matched to North American Industry Classification System (NAICS) industries. The SBA definition of a small business applies to a firm's parent company and all affiliates as a single entity.

Small Governmental Jurisdiction. Section 601(5) defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with a population of less than 50,000. Special districts may include those servicing irrigation, ports, parks and recreation, sanitation, drainage, soil and water conservation, road assessment, etc. Most tribal governments will also meet this standard. When counties have populations greater than 50,000, those municipalities of fewer than 50,000 can be identified using population reports. Other types of small government entities are not as easily identified under this standard, as they are not typically classified by population.

Small Organization. Section 601(4) defines a small organization as any not-for-profit enterprise that is independently owned and operated and not dominant in its field. Small organizations may include private hospitals, educational institutions, irrigation districts, public utilities, agricultural co-ops, etc. Depending upon state laws, it may be difficult to distinguish whether a small entity is a government or non-profit entity. For example, a water supply entity may be a cooperative owned by its members in one case and in another a publicly chartered small government with the assets owned publicly and officers elected at the same elections as other public officials.

² NOAA Fisheries is not issuing a final critical habitat designation for the Oregon Coast Coho Salmon ESU because it is only proposed for listing at this time (70 FR 37217, June 28, 2005). On June 28, 2005, NOAA Fisheries published a notice that it was extending the final determination for that ESU by six months because of scientific disagreement.

Description of Small Entities to Which the Rule will Apply

Federal courts and Congress have indicated that a RFA analysis should be limited to small entities subject to the regulation.³ As such, small entities to which the rule will not apply are not considered in this analysis.⁴

As noted previously, section 7 of the ESA requires each Federal agency to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat. To prevent this result, Federal agencies must “consult” with NOAA Fisheries.

The consultation process is not restricted to direct agency action, but is required whenever a Federal nexus is present, such as when a Federal agency must authorize, approve, or fund a state or private action. Activities on land owned by individuals, organizations, states, local and Tribal governments only require consultation with NOAA Fisheries if their actions involve Federal funding, licensing, permitting, or authorization. Federal actions not affecting the species or its critical habitat, as well as activities on non-Federal lands that are not Federally funded, authorized, licensed, or permitted, do not require section 7 consultation. For consultations concerning activities on Federal lands, the relevant Federal agency consults with NOAA Fisheries. For consultations where the consultation involves an activity proposed by a state or local government or a private entity (the “applicant”), the Federal agency with the nexus to the activity (the “action agency”) serves as the liaison with NOAA Fisheries.⁵

Examples of actions that may be subject to a Federal nexus and a section 7 consultation include, but are not limited to:

- (a) actions intended to conserve listed species or their habitat;
- (b) the promulgation of regulations;
- (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or
- (d) actions directly or indirectly causing modifications to the land, water, or air.

Based on an examination of an array of activities with a Federal nexus sufficient to trigger section 7 consultation requirements regarding critical habitat, this economic analysis identified the nature of the small businesses that will be subject to the rule. Special attention was paid to identifying small businesses expected to face more significant impacts than other industry sectors as a result of the rule. Table 4 presents a list of the major relevant activities with a Federal nexus and descriptions of the industry sectors involved in those activities, including NAICS codes and the SBA thresholds for determining whether a firm is small.

³ *Mid-Tec Elec. Coop v. FERC*, 773 F.2d 327 (D.C. Cir. 1985).

⁴ *Cement Kiln Recycling Coalition et. al. v. EPA*, 255 F.3d 855 (2001).

⁵ Applicant refers to any person who requires formal approval or authorization from a Federal agency as a prerequisite to conducting the action (50 CFR 402.02).

Table 4. Major Relevant Activities with a Federal Nexus and a Description of the Industry Sectors Engaged in Those Activities

Major Relevant Activity and Federal Nexus	Description of Industry Sector	NAICS Code	SBA Size Standard
§4 and 23(b) of the Federal Power Act give the Federal Energy Regulatory Commission (FERC) the authority to license projects located on Federal lands or navigable or commerce clause waters and which use water to generate power.	Hydroelectric Power Generation This industry comprises establishments primarily engaged in operating hydroelectric power generation facilities. These facilities use water power to drive a turbine and produce electric energy. The electric energy produced in these establishments is provided to electric power transmission systems or to electric power distribution systems.	221111	4 million megawatt hours for the preceding fiscal year ¹
Under §10 of the Rivers and Harbors Act, the U.S. Army Corps of Engineers (ACOE) permits in-water structures, including irrigation pipes and other water withdrawal structures.	Water Supply and Irrigation Systems This industry comprises establishments primarily engaged in operating water treatment plants and/or operating water supply systems. The water supply system may include pumping stations, aqueducts, and/or distribution mains. The water may be used for drinking, irrigation, or other uses.	22131	\$6 million average annual receipts
Federal nexus activities for timber and livestock operators include timber sales and grazing allotments permitted by the Forest Service or Bureau of Land Management.	Forestry and Logging Industries in the Forestry and Logging sector grow and harvest timber on a long production cycle (i.e., of 10 years or more).	113	\$6 million average annual receipts
	Beef Cattle Ranching and Farming This industry comprises establishments primarily engaged in raising cattle (including cattle for dairy herd replacements).	112111	\$750,000 average annual receipts
The typical Federal nexuses for road/bridge construction and maintenance activities are either funding from the Federal Highway Administration for transportation projects and/or Clean Water Act §404 permitting from the ACOE for projects with the potential to discharge dredged or fill material into navigable waters. Roads, highways, and bridges may also be considered point sources of pollution and require a National Pollutant Discharge Elimination System (NPDES) storm water permit under §402 of the Clean Water Act.	Highway, Street, and Bridge Construction This industry comprises establishments primarily engaged in the construction of highways (including elevated), streets, roads, airport runways, public sidewalks, or bridges. The work performed may include new work, reconstruction, rehabilitation, and repairs.	237310	\$28.5 million average annual receipts

Major Relevant Activity and Federal Nexus	Description of Industry Sector	NAICS Code	SBA Size Standard
The primary Federal nexus for utility related activities is the ACOE, which authorizes Clean Water Act §404 permits for projects with the potential to discharge dredged or fill material into navigable waters. Another possible nexus for utility related activities is FERC licensing of the interstate transmission of electricity, oil, and natural gas by pipeline.	Electric Power Generation, Transmission and Distribution This industry group comprises establishments primarily engaged in generating, transmitting, and/or distributing electric power. Establishments in this industry group may perform one or more of the following activities: (1) operate generation facilities that produce electric energy; (2) operate transmission systems that convey the electricity from the generation facility to the distribution system; and (3) operate distribution systems that convey electric power received from the generation facility or the transmission system to the final consumer.	221111, 221112, 221113, 221119, 221121, 221122	4 million megawatt hours for the preceding fiscal year ¹
	Natural Gas Distribution This industry comprises: (1) establishments primarily engaged in operating gas distribution systems (e.g., mains, meters); (2) establishments known as gas marketers that buy gas from the well and sell it to a distribution system; (3) establishments known as gas brokers or agents that arrange the sale of gas over gas distribution systems operated by others; and (4) establishments primarily engaged in transmitting and distributing gas to final consumers.	22121	500 employees
	Water Supply and Irrigation Systems (See description above)	22131	\$6 million average annual receipts
	Sewage Treatment Facilities This industry comprises establishments primarily engaged in operating sewer systems or sewage treatment facilities that collect, treat, and dispose of waste.	221320	
Sand and gravel mining operations may request Clean Water Act §404 permits from the ACOE for projects with the potential to discharge dredged or fill material into navigable waters.	Construction Sand and Gravel Mining This industry comprises establishments primarily engaged in one or more of the following: (1) operating commercial grade (i.e., construction) sand and gravel pits; (2) dredging for commercial grade sand and gravel; and (3) washing, screening, or otherwise preparing commercial grade sand and gravel.	212321	500 employees

Major Relevant Activity and Federal Nexus	Description of Industry Sector	NAICS Code	SBA Size Standard
Private parties may request permits from the ACOE for a variety of activities that occur in waterways or involve modifying navigable waterways, such as construction in waterways (e.g., breakwaters, docks, piers), dredging projects, shoreline stabilization, construction and maintenance of oil and gas pipelines, irrigation withdrawal structures, and state or local water supply projects.	Water and Sewer Line and Related Structures Construction	237110	\$28.5 million average annual receipts
	This industry comprises establishments primarily engaged in the construction of water and sewer lines, mains, pumping stations, treatment plants and storage tanks.		
	Oil and Gas Pipeline and Related Structures Construction	237120	
	This industry comprises establishments primarily engaged in the construction of oil and gas lines, mains, refineries, and storage tanks.		
	Power and Communication Line and Related Structures Construction	237130	
	This industry comprises establishments primarily engaged in the construction of power lines and towers, power plants, and radio, television, and telecommunications transmitting/receiving towers.		
	Marinas	713930	\$6 million average annual receipts
	This industry comprises establishments engaged in operating docking and/or storage facilities for pleasure craft owners, with or without one or more related activities, such as retailing fuel and marine supplies; and repairing, maintaining, or renting pleasure boats.		
	Other Heavy and Civil Engineering Construction	237990	\$17 million average annual receipts
	This industry comprises establishments primarily engaged in heavy and engineering construction projects (excluding highway, street, bridge, and distribution line construction).		
The most common nexus for residential and related development is a Federal permit for stormwater outfall construction/expansion issued by the ACOE.	Land Subdivision	237210	\$6 million average annual receipts
	This industry comprises establishments primarily engaged in servicing land and subdividing real property into lots, for subsequent sale to builders. Servicing of land may include excavation work for the installation of roads and utility lines. Land subdivision precedes building activity and the subsequent building is often residential, but may also be commercial tracts and industrial parks		

Major Relevant Activity and Federal Nexus	Description of Industry Sector	NAICS Code	SBA Size Standard
As authorized by the Clean Water Act, NPDES permit program administered by the Environmental Protection Agency (EPA) controls water pollution by regulating point sources that discharge pollutants (including thermal pollutants) into U.S. waters. Point sources are discrete conveyances such as pipes or man-made ditches. Industrial and municipal facilities must obtain NPDES permits if their discharges go directly to surface waters. Separate storm sewer systems and combined sewer and overflow systems may also be subject to NPDES permitting requirements.	Fishing, Hunting, Trapping Industries in this sector harvest fish and other wild animals from their natural habitats and are dependent upon a continued supply of the natural resource. The harvesting of fish is the predominant economic activity of this sector and it usually requires specialized vessels that, by the nature of their size, configuration and equipment, are not suitable for any other type of production, such as transportation.	114	\$3.5 million average annual receipts
	Food Manufacturing Industries in this sector transform livestock and agricultural products into products for intermediate or final consumption. The industry groups are distinguished by the raw materials (generally of animal or vegetable origin) processed into food products.	311	500 employees
	Sewage Treatment Facilities (See description above)	221320	\$6 million average annual receipts
	Paper and Pulp Mills This industry comprises establishments primarily engaged in manufacturing paper and/or pulp.	322121, 322122, 322110	750 employees
	Wood Product Manufacturing Industries in this sector manufacture wood products, such as lumber, plywood, veneers, wood containers, wood flooring, wood trusses, manufactured homes (i.e., mobile home), and prefabricated wood buildings.	321	500 employees
Under the ESA, the EPA must consult with the Fish and Wildlife Service and NOAA Fisheries to ensure that the registration of products under the Federal Insecticide, Fungicide and Rodenticide Act complies with section 7 of the ESA.	Crop Production (Oilseed and Grain Farming, Vegetable and Melon Farming, Fruit and Tree Nut Farming) This industry group comprises establishments primarily engaged in 1) growing oilseed and/or grain crops and/or producing oilseed and grain seeds; 2) growing root and tuber crops (except sugar beets and peanuts) or edible plants and/or producing root and tuber or edible plant seeds; or 3) growing fruit and/or tree nut crops.	1111, 1112, 1113	\$750,000 average annual receipts

¹ NAICS codes 221111, 221112, 221113, 221119, 221121, 221122 – A firm is small if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours.

Source: U.S. Small Business Administration, <http://www.sba.gov/size/indextableofsize.html>, viewed June 17, 2005.

Small governments as well as small businesses own and operate various hydroelectric power facilities, water supply and irrigation systems, and sewage treatment facilities. Moreover, small governments may also undertake utility line projects and carry out land subdivision for residential, commercial, and industrial development. Consequently, both small governments and small businesses will be directly regulated by the rule. The number of small governmental entities that will be directly affected by the rule is unknown. However, a review of the historical consultation record suggests that the number of consultations involving small governments is likely to be small.

Estimate of the Number of Small Entities to Which the Rule will Apply

NOAA Fisheries has determined that the most practical unit of analysis for designating critical habitat of the 12 listed Pacific salmon/steelhead ESUs is a watershed unit defined by the U.S. Geological Service as a hydrologic unit. Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to twelve digits based on the six levels of classification in the hydrologic unit system. NOAA Fisheries determined the smallest practical hydrologic unit to analyze is that designated by a fifth field code (referred to as a fifth field HUC or HUC5).

However, it is not possible to directly determine the number of firms in each industry sector in each of the hydrologic units designated as critical habitat because of the geo-political coverage of business activity data sets. The closest approximations to the units of interest for which data are available are counties. Counties included in this analysis area were identified using data provided by NOAA Fisheries on watershed land area included in the ESU and maps provided by NOAA Fisheries identifying the boundary of the ESU. Where the intersection of a county and the ESU is unpopulated, that county has been excluded from the list.

For each county included in the analysis, an estimate of the total number of entities within each industry sector subject to the regulation was derived by searching the D&B Duns Market Identifiers (File 516) by NAICS code. This directory file is produced by Dun & Bradstreet, Inc. and contains basic company data on U.S. business establishment locations, including public, private, and government organizations. Census tract data from the 2000 Census of Population and Housing were used to indirectly estimate the number of businesses in each ESU by assuming that the number of businesses is directly proportional to population density.

The SBA definition of a small business applies to a firm's parent company and all affiliates as a single entity.⁶ However, because complete ownership and affiliation information was unavailable for the firms in each ESU, some firms may have been incorrectly identified as small businesses. Consequently, it is possible that this analysis overestimates the number of small entities that will be regulated under the action.

An estimate of the number of firms in each ESU that are subject to the rule and meet the SBA small business classification standard is provided in Appendix A: Table 12-Table 35. Estimates of the number of regulated firms in each ESU are summarized in Table 5. An estimate of the total number of regulated entities across all ESUs is also provided; this number accounts for the overlap between ESUs for some of the watersheds.

⁶ The SBA's "general principles of affiliation" are set forth in regulations at 13 CFR 121.103.

Table 5. Estimated Number of Regulated Small Entities by ESU and Industry Sector

	Total	Hydro- electric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construc- tion	Electric Services/ Natural Gas Distribution ¹	Construc- tion Sand and Gravel Mining	Utility Line Construc- tion	Other Heavy and Civil Engineering and Construc- tion	Land Sub- division	NPDES- Permitted Activities	Crop Produc- tion
Lower Columbia River Chinook	1,885	38	45	215	96	154	60	9	141	120	300	482	225
Puget Sound Chinook	2,710	32	65	166	62	232	58	16	250	220	531	968	109
Upper Columbia River Spring-run Chinook	1,368	17	40	51	82	55	32	2	40	34	45	130	841
Upper Willamette River Chinook	2,945	37	77	361	178	227	69	20	200	170	401	766	441
Columbia River Chum	1,002	15	8	182	70	114	25	7	64	80	101	242	96
Hood Canal Summer-run Chum	228	5	8	50	6	18	7	1	22	23	13	68	7
Ozette Lake Sockeye	0	0	0	0	0	0	0	0	0	0	0	0	0
Lower Columbia River Steelhead	1,793	37	42	189	86	147	58	8	138	114	298	456	220
Middle Columbia River Steelhead	2,336	30	61	132	264	106	50	6	77	70	72	257	1,211
Snake River Basin Steelhead	1,284	15	35	146	225	71	28	4	51	47	47	156	460
Upper Columbia River Steelhead	1,617	21	50	66	106	62	38	2	48	36	50	149	990
Upper Willamette Steelhead	2,527	31	72	257	163	199	66	17	177	148	347	655	395
All ESUs ²	11,256	136	276	1,053	809	785	250	51	678	614	1,205	2,510	2,890

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

² Many of the ESUs overlap; thus, the row labeled “All ESUs” estimates unique effects and is not simply the sum of all ESUs.

Source: Northern Economics, Inc. analysis based on data from NOAA Fisheries Northwest Region. The data and method of analysis are described in Appendix A: Estimate of the Number of Small Entities to Which the Rule will Apply.

VI. Description of the Projected Reporting, Record Keeping and Other Compliance Requirements of the Rule

Description of Compliance Requirements of the Rule

As discussed above, section 7 of the ESA requires Federal agencies to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat. The ESA does not place requirements on any other parties to consider the effect of their actions on critical habitat. As a result, non-Federal entities can only be affected by critical habitat designation when the activities they carry out have a Federal nexus.

The rule does not directly mandate “reporting” or “record keeping” within the meaning of the Paperwork Reduction Act. However, modifications to projects and activities taking place on designated land may include increased reporting or record keeping requirements. Review/reporting is already part of standard practices for managing activities (e.g., timber harvesting, grazing, and mining) in riparian areas, and the increased reporting costs associated with the designation of critical habitat are expected to be minimal. Thus, the marginal reporting or record keeping costs, if any, that would be imposed by the rule on regulated entities, including small entities, would not be substantial. Since the rule does not directly mandate “reporting” or “record keeping” within the meaning of the Paperwork Reduction Act, the rule does not require professional skills for the preparation of “reports” or “records” under that Act.

The rule contains compliance requirements not subject to the Paperwork Reduction Act. Specifically, a mandatory legal consequence of a critical habitat designation is the section 7 requirement of Federal agencies described above. The section 7 consultation process may involve both informal and formal consultation with NOAA Fisheries. Informal section 7 consultation is designed to assist the Federal agency and any applicant in identifying and resolving potential conflicts at an early stage in the planning process (50 CFR 402.13). Informal consultation consists of informal discussions between NOAA Fisheries and the agency concerning an action that may affect a listed species or its designated critical habitat. In preparation for an informal consultation, the Federal action agency or applicant must compile all biological, technical, and legal information necessary to analyze the scope of the activity and discuss strategies to avoid, minimize, or otherwise reduce impacts to listed species or critical habitat. During the informal consultation, NOAA Fisheries makes advisory recommendations, if appropriate, on ways to minimize or avoid adverse effects. If agreement can be reached, NOAA Fisheries will concur in writing that the action, as revised, is not likely to adversely affect listed species or critical habitat. Informal consultation may be initiated via a phone call or letter from the action agency, or a meeting between the action agency and NOAA Fisheries.

A formal consultation is required if the proposed action is likely to adversely affect listed species or designated critical habitat (50 CFR 402.14). An analysis conducted during formal consultations determines whether a proposed agency action is likely to jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat. Some of the activities NOAA Fisheries believes could result in the destruction or adverse modification of critical habitat of listed Pacific salmon and steelhead ESUs include, but are not limited to:

1. Land-use activities that adversely affect a listed Pacific salmon/steelhead ESU’s habitat (e.g., logging, grazing, or road construction, particularly when conducted in riparian areas or in areas susceptible to mass wasting and surface erosion);
2. Destruction or alteration of a listed Pacific salmon/steelhead ESU’s habitat (aside from habitat restoration activities), such as removal of large woody debris and “sinker logs” or

riparian shade canopy, dredging, discharge of fill material, draining, ditching, diverting, blocking, or altering stream channels or surface or ground water flow;

3. Discharges or dumping of toxic chemicals or other pollutants (e.g., sewage, oil, gasoline) into waters or riparian areas supporting the listed Pacific salmon/steelhead ESUs;
4. Violation of discharge permits;
5. Pesticide applications in violation of Federal restrictions;
6. Introduction of non-native species likely to prey on a listed Pacific salmon/steelhead ESU or displace it from its habitat;
7. Water withdrawals in areas where important spawning or rearing habitats may be adversely affected, or otherwise altering streamflow when it is likely to impair spawning, migration, or other essential functions;
8. Constructing or maintaining barriers that eliminate or impede a listed Pacific salmon/steelhead ESU's access to habitat essential for its survival or recovery;
9. Removing, poisoning, or contaminating plants, fish, wildlife, or other biota required by a listed Pacific salmon/steelhead ESU for feeding, sheltering, or other essential functions;
10. Releasing non-indigenous or artificially propagated individuals into a listed Pacific salmon/steelhead ESU's habitat;
11. Constructing or operating inadequate fish screens or fish passage facilities at dams or water diversion structures in a listed Pacific salmon/steelhead ESU's habitat;
12. Constructing or using inadequate bridges, roads, or trails on stream banks or unstable hill slopes adjacent or above a listed Pacific salmon/steelhead ESU's habitat; or
13. Constructing or using inadequate pipes, tanks, or storage devices containing toxic substances, where the release of such a substance is likely to significantly modify or degrade a listed Pacific salmon/steelhead ESU's habitat.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where critical habitat is subsequently designated and the Federal agency has retained discretionary involvement or control over the action or such discretionary involvement or control is authorized by law. Consequently, some Federal agencies may request reinitiation of consultation or conference on actions for which formal consultation has been completed, if those actions may affect designated critical habitat or adversely modify or destroy critical habitat.

The biological opinion is the document that states the opinion of NOAA Fisheries as to whether or not the Federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. Regulations at 50 CFR 402.1 guide the section 7 consultation process. If jeopardy or adverse modification is found, NOAA Fisheries will suggest those reasonable and prudent alternatives that can be taken by the Federal agency or applicant in implementing the agency action. Reasonable and prudent alternatives refer to alternative actions identified during formal consultation that can be implemented in a manner consistent with the intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that NOAA Fisheries believes would avoid the likelihood of jeopardizing the continued existence of listed species or resulting in the destruction or adverse modification of critical habitat. Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

In formulating its biological opinion and any reasonable and prudent alternatives, NOAA Fisheries must use the best scientific and commercial data available and must give appropriate consideration to any beneficial actions taken by the Federal agency or applicant, including any actions taken prior to the initiation of consultation. In addition, NOAA Fisheries must utilize the expertise of the Federal agency and any applicant in identifying reasonable and prudent alternatives.

A Federal agency and an applicant may elect to implement a reasonable and prudent alternative associated with a biological opinion that has found jeopardy or adverse modification of critical habitat. An agency or applicant could alternatively choose to seek an exemption from the requirements of the ESA or proceed without implementing the reasonable and prudent alternative. However, unless an exemption was obtained, the Federal agency or applicant would be at risk of violating section 7(a)(2) of the ESA if it chose to proceed without implementing the reasonable and prudent alternatives.

Description of Compliance Costs Associated with the Rule

There are two primary types of compliance costs that regulated small entities may incur upon designation of critical habitat: 1) administrative costs incurred from section 7 consultation (formal or informal); and 2) costs incurred from section 7 consultation associated with project design or operation modification and project delays.⁷ A summary of the costs associated with the critical habitat designation is provided in Table 6 to indicate how the rule may affect some of the various sectors and to aid public comment.

Table 6. Categories of Potential Compliance Costs Associated with the Rule

Categories of Potential Costs	Examples
Administrative costs associated with section 7 consultations: <ul style="list-style-type: none"> ▪ new consultations ▪ reinitiated consultations ▪ extended consultations 	The value of time spent in conducting section 7 consultations (e.g., costs of phone calls, letter writing, meetings, travel time) and, in some cases, the costs of compiling biological, technical, and legal information and/or preparing a biological assessment.
Costs of modifications to projects, activities, and land uses.	Opportunity costs associated with seasonal project changes, relocation or redesign of project activities, project delays and/or cessation of certain activities.

The administrative costs of participating in consultation include the cost of applicants’ time spent attending meetings, making phone calls, and preparing letters. In addition, applicants may spend time reviewing and commenting on the biological opinion before its promulgation (if a “jeopardy biological opinion” is to be issued). The duration and complexity of these interactions depends on a number of variables, including the type of consultation, the species, the activity of concern, the region where critical habitat has been designated, and the involved parties. In some cases, applicants may also incur the costs of developing, under the direction of NOAA Fisheries, a biological assessment. Biological assessments are prepared to evaluate the potential effects of a proposed project on listed species or designated critical habitat.

The section 7 consultation process may also involve some modifications to a proposed or existing project. Projects may be modified in response to voluntary conservation measures suggested by NOAA Fisheries and agreed to by the applicant during the informal consultation process in order

⁷ Compliance costs are those expenses borne by entities as they change their behavior to come into compliance with regulations.

to avoid or minimize impact to a species and/or its habitat, thereby removing the need for formal consultation. Alternatively, formal consultations may involve modifications that are included in the project description as avoidance and minimization measures or included in the biological opinion on the project as reasonable and prudent measures. Of the activities and projects that are potentially affected by section 7 consultations, many are expected to involve no project modifications or very minor ones.

Applicants may also incur project delay costs associated with the consultation process. Regardless of funding (i.e., private or public), projects and activities are generally undertaken only when the benefits exceed the costs, given an expected project schedule. If costs increase, benefits decrease, or the schedule is delayed, a project or activity may no longer have positive benefits, or it may be less attractive to the party funding the project. However, the magnitude of such delays is unclear; the formal consultation process may add significantly to time lags before project implementation, or the action agency and the individual entity initiating the activity may be able to conduct a section 7 consultation simultaneously with other necessary permitting processes, thus leading to no additional delays.

To further assist small entities in understanding the nature of the impact of the rule on their activities, the following discussion identifies typical project modifications that may be requested in consultations involving the listed Pacific salmon and steelhead ESUs:

Hydroelectric Power Generation. Small hydroelectric producers could be affected by project modification costs at the time of facility re-licensing. Alterations of operations affecting timing, amount and duration of water released could be costly in terms of lost generation capacity and foregone revenue over the life of a 30 to 50 year license. In addition, facilities may incur fish passage, habitat protection or restoration, and biological study costs.

Water Supply and Irrigation Systems. Section 7 consultation can add a cost burden to water supply activities by modifying infrastructure development projects and governing the operation of water projects (e.g., amount of water diverted).

Forestry and Logging. Project modifications may include yarding system changes to protect soils and reduce sediment loads in streams; repairing and replacing culverts that block upstream passage to fish; and road maintenance and repair to reduce soil erosion and sediment runoff. However, most costs related to roadwork, culvert upgrades and changes in logging and yarding methods will be passed on to the USFS through lower stumpage prices. Expanding the buffers along streamside corridors would remove land from timber production, thereby reducing the flow of raw material into the forest products industry.

Beef Cattle Ranching and Farming. The major cost components come from the areas of monitoring and elimination of conflicts (e.g., fencing and providing off-stream water). Date restrictions or the enforcement of stubble height restrictions can lead to an animal unit month (AUM) reduction on a particular allotment.⁸ As a result of such reductions, ranchers will generally move the cattle to a different allotment or private lands. If they move the cattle to private lands they may have to pay a higher grazing fee, reflecting the different responsibilities the rancher has on public land for monitoring livestock, fence repairs and moving livestock versus private rented land, for which these responsibilities are often taken over by the land owner. Thus, while costs may be shifted, this analysis does not predict significant additional costs to grazing permittees. In addition, when date restrictions are imposed, the USFS often can expand other allotments or increase AUMs on the restricted parcel to lessen any impact on the permittee. In cases where modifications in on-off dates and stocking levels result in reductions in total leased AUMs by a rancher, the total asset value of a permittee's privately held land may be

⁸ Date restrictions refer to conditions specifying when activities should or should not be undertaken.

impacted. Agricultural lending institutions often consider the number of historically leased Federal and state AUMs associated with a private ranching operation in determining the ranch's market value. Significant reductions in Federally-permitted AUMs could impact this market value. Reductions in total AUMs tend to be small and marginal in nature, and are often offset with available Federal, state, or private grazing elsewhere. The potential for this type of impact exists, but is not estimated due to the likely small magnitude and uncertain nature of the possible impact.

Highway, Street, and Bridge Construction. The typical project modification for bridge construction, maintenance, and removal projects in rivers designated as critical habitat is date restrictions on in-stream work to protect spawning or migrating fish. Date restrictions have the potential to increase costs, but will not do so in every case. Larger projects are more likely to have date restriction costs. The imposition of date restrictions forces contractors to plan carefully and schedule the construction sequence with diligence. A large project coupled with a small window or unforeseen difficulties can lead to contractors being unable to finish their in-stream work during the allowed period. This is more likely with large projects than small projects. Most of the costs associated with project modification compliance will be borne by the Federal government either directly or through its funding of State Department of Transportation projects.

Electric Services/Natural Gas Distribution. Common project modifications include restrictions on the duration and extent of in-stream work, replacement/restoration of habitat, on-site monitoring, and efforts to minimize take.

Construction Sand and Gravel Mining. Consultations on mining activities conducted within the riparian areas of this designation could lead to watershed assessment requirements, a reduction in the length of the mining season, buffer strips, restrictions as to type of equipment allowed, timing of equipment use and additional requirements for stream crossings.

Utility Line Construction/Marinas/Other Heavy and Civil Engineering and Construction. Section 7 implementation on in-stream activities may impact the entities conducting the activities. Economic impacts result from direct project costs associated with restrictions on the duration and extent of in-water work, erosion and sediment control measures, heavy equipment restrictions, and efforts to minimize take.

Land Subdivision. The designation of critical habitat is anticipated to have a negligible impact on regional market supply for residential, commercial, or industrial land; therefore, the primary impacts will be felt by individual property owners. Typical project modifications associated with stormwater outfall projects include implementing state recommended stormwater plans, activities to reduce stormwater volume and/or pollutants, minimizing hardscape of the outfall structure, and vegetation replacement.

NPDES-Permitted Activities (Fishing, Hunting, Trapping; Food Manufacturing; Sewage Treatment Facilities; Paper and Pulp Mills; Wood Product Manufacturing). Costs related to NPDES-permitted activities include impacts resulting from newly developed water quality standards criteria related to temperature. EPA and NOAA Fisheries recently authored guidance to states and Tribes on the development of temperature criteria deemed protective of salmonids. Impacts of section 7 implementation resulting from NOAA's consultation on the temperature criteria will vary depending on a facility's compliance with existing temperature standards.

Crop Production (Oilseed and Grain Farming, Vegetable and Melon Farming, Fruit and Tree Nut Farming). The principal economic effects are associated with restrictions on the aerial and ground application of a set of agricultural pesticides within a certain distance of the stream reaches considered in this analysis. These restrictions can be taken as an additional constraint on

the agricultural production process that may result in lower net cash farm income (net revenue) per acre.

Estimate of the Economic Impacts on Small Entities

For the purpose of this analysis, costs to small entities include those costs borne directly by small entities and not those costs borne directly by Federal agencies and passed on to small entities (e.g., higher electricity prices charged by Federal power marketing agencies). Costs borne directly by small entities include the administrative costs of participating in section 7 consultation and the costs resulting from modifying project activities to comply with section 7.

To be conservative (i.e., more likely to overstate impacts than understate them), this analysis assumes that for most activities, private third parties will bear all of the total section 7 costs. However, for some activities third party involvement is known to be minimal (i.e., only the action agency and/or NOAA Fisheries are expected to incur costs). In particular, this analysis anticipates that Federal agencies will bear 90 percent of the total section 7 costs associated with beef cattle ranching and forestry and logging activities on Federal lands and with road and bridge construction and maintenance. The remaining ten percent of costs are expected to be borne by private entities. Most of the project modification costs for beef cattle ranching and forestry and logging activities on Federal lands will likely either be borne directly by or passed onto the Federal government. For example, the cost of fencing for beef cattle ranching will almost always be borne by the Federal land agency. In the case of forestry and logging, additional monitoring costs and the cost of some of the additional road work will be borne directly by the USFS, while costs related to remaining road work and changes in logging and yarding methods will be passed on to the USFS through lower stumpage prices. With respect to FHWA-related consultations for road and bridge construction/maintenance, this analysis anticipates that the majority of costs associated with project modification compliance will be borne by the Federal government either directly or through their funding of State Department of Transportation projects. Impacts on indirectly regulated entities (e.g., road construction companies contracted by State DOTs) are not considered in this analysis.

This analysis does not distinguish between economic impacts caused by the listing of the Pacific salmon and steelhead ESUs and those additional costs and benefits created solely by the final critical habitat designation. Section 7 consultations are required upon the listing of a species to ensure federal actions will not jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. Section 7 consultations on habitat-modifying actions may lead to project modifications because they will result in jeopardy, or adverse modification of critical habitat, or both. Although NOAA Fisheries reviewed its extensive consultation record, it was unable to distinguish incremental project modifications that were required because of the critical habitat designation, over and above the application of the jeopardy standard. In 2001, the U.S. Court of Appeals for the Tenth Circuit instructed the U.S. Fish and Wildlife Service to conduct a full analysis of all of the economic impacts of critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes.⁹ Mindful of the Tenth Circuit's instruction regarding the statutory requirement to consider the economic impact of designation, NOAA Fisheries examined its extensive consultation record. The agency could not discern a distinction in the impacts of applying the jeopardy provision versus the adverse modification provision in occupied habitat. Given the inability to detect a measurable difference between the impacts of applying these two provisions, the only reasonable alternative seemed to be to follow the recommendation of the Tenth Circuit to measure the full impact of the adverse modification requirement, regardless of whether it is coextensive with the jeopardy requirement.

⁹ *New Mexico Cattlegrowers' Association v. U.S. Fish and Wildlife Service*, 248 F.3d 1277 (10th Cir. 2001)

Thus, the economic impacts described in this FRFA should be interpreted as the sum of two types of impacts:

- Coextensive impacts, or those that are associated with actions covered by both the jeopardy and adverse modification requirements of section 7 of the ESA; and
- Incremental impacts, or those that are solely attributable to critical habitat designation and would not occur without the designation.

The greatest share of the costs associated with the consultation process stem from project modifications and mitigation (as opposed to the consultation itself). Indeed, the administrative costs associated with the consultation itself are relatively minor, with third party costs estimated to range from \$1,200 to \$4,100 per consultation. The cost of developing a biological assessment is estimated to be between \$3,700 and \$67,500. Therefore, small entities are unlikely to be significantly affected by consultations that do not involve costly project modifications.

Unavailable or inadequate data leaves some uncertainty surrounding the nature and cost of project modifications that may be requested by NOAA Fisheries in consultations on Federally authorized, permitted, or funded activities. The problem is complicated by differences among entities even in the same sector as to the nature and size of their current operations, contiguity to waterways, etc. Moreover, the ability of different entities to adapt to the incremental regulatory burden by changing the manner in which they operate, modifying their mix of products, or passing on the additional costs in the form of price increases or user fees is unknown.

Using spatial data, the analysis identified projects and activities that either had or could have a Federal nexus on lands being considered for critical habitat. The analysis used these data to project the volume of projects and activities that could reasonably be foreseen to be covered by a section 7 consultation once critical habitat was designated. Estimates of the costs per project for each industry sector were based on a review of the historical consultation record (Appendix B: Table 36). The costs were annualized based on the forecast period and the likelihood of consultation and modifications.

It is likely that businesses that do not meet SBA's small business size standards will have larger projects and, therefore, greater costs per project. However, in order to present a conservative (i.e., high end) estimate of per-project costs, this analysis assumes that these costs are as high for small businesses as they are for larger ones.

An estimate of the number of projects that would be affected by section 7 consultation was only available for all businesses, both large and small. It is likely that businesses that do not meet SBA's small business size standards will have a greater number of affected projects per entity. However, due to a lack of information regarding the number of affected projects involving small entities, this analysis conservatively assumes that the ratio of small entity projects to all projects is equal to the ratio of small entities to all entities.¹⁰

An estimate of the annual economic impacts on small entities in each ESU by industry sector is provided in Appendix B: Table 37-Table 48. The tables present the expected total economic cost of actions taken under section 7 of the ESA associated with protection of the 12 Pacific salmon and steelhead ESUs and their designated critical habitat, including those costs attributable co-extensively to the listing of the 12 Pacific salmon and steelhead ESUs as endangered or threatened. Both overall compliance costs of section 7 consultation and per-entity compliance

¹⁰ This analysis estimated the proportion of regulated entities that are small entities to be greater than 70 percent in all of the industry sectors considered, with the exception of the Natural Gas Distribution Sector (in which small entities represent 31 percent of the total). The proportion of regulated entities that are small entities in the Hydroelectric Power Generation and Electric Services Sectors is unknown.

costs are presented. These tables establish an upper-bound to the compliance costs due to the fact that some of the costs associated with section 7 consultation are expected to be borne directly by or passed onto the Federal government. Only the estimated annualized section 7 costs incurred by regulated small entities in the Beef Cattle Ranching and Farming, Forestry and Logging, and Highway, Street, and Bridge Construction Sectors were adjusted downward to reflect this likelihood. The analysis assumes that 90 percent of the estimated annualized section 7 costs for these three sectors will be borne by the Federal action agencies; with private entities incurring the remaining ten percent.

Estimates of the co-extensive costs of section 7 consultation to small entities in each ESU are summarized in Table 7. An estimate of the total co-extensive costs across all ESUs is also provided; this number accounts for the overlap between ESUs for some watersheds.

Table 7. Estimated Annual Economic Impacts on Small Entities by ESU and Industry Sector. Impacts are Expressed as Dollars of Compliance Costs.

	Total	Hydro- electric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construc- tion	Electric Services/ Natural Gas Distribution ¹	Construc- tion Sand and Gravel Mining	Utility Line Construc- tion	Other Heavy and Civil Engineering and Construc- tion	Land Sub- division	NPDES- Permitted Activities	Crop Produc- tion
Lower Columbia River Chinook	\$19,895,678	\$8,110,504	\$1,194,972	\$651,095	\$0	\$102,906	\$254,491	\$537,780	\$2,369,584	\$5,394,080	\$674,385	\$444,497	\$161,385
Puget Sound Chinook	\$59,419,599	\$18,549,482	\$2,168,815	\$593,326	\$0	\$66,180	\$1,305,851	\$146,474	\$26,999,506	\$8,164,676	\$172,830	\$572,033	\$680,427
Upper Columbia River Spring-run Chinook	\$9,046,731	\$63,615	\$110,298	\$448,837	\$650	\$3,074	\$291,328	\$62,845	\$4,101,997	\$3,331,004	\$0	\$259,457	\$373,625
Upper Willamette River Chinook	\$16,595,797	\$7,375,591	\$462,166	\$868,762	\$0	\$16,317	\$485,127	\$139,164	\$504,288	\$5,554,730	\$284,621	\$649,357	\$255,673
Columbia River Chum	\$12,939,251	\$1,579,683	\$430,593	\$185,610	\$0	\$79,590	\$199,301	\$234,291	\$5,116,274	\$4,684,678	\$75,965	\$298,279	\$54,988
Hood Canal Summer-run Chum	\$5,379,488	\$525,490	\$356,474	\$125,840	\$0	\$3,947	\$48,590	\$99,437	\$2,731,477	\$1,410,423	\$4,551	\$67,266	\$5,992
Ozette Lake Sockeye	\$2,375	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,375	\$0
Lower Columbia River Steelhead	\$19,729,002	\$8,125,012	\$1,153,809	\$790,264	\$0	\$100,895	\$255,182	\$438,373	\$2,089,399	\$5,382,556	\$657,757	\$398,957	\$336,798
Middle Columbia River Steelhead	\$21,192,730	\$3,549,155	\$2,530,783	\$1,547,544	\$26,364	\$56,440	\$482,948	\$332,394	\$3,417,000	\$6,107,270	\$69,717	\$418,777	\$2,654,338
Snake River Basin Steelhead	\$15,349,068	\$381,690	\$1,299,250	\$1,302,033	\$36,024	\$33,545	\$464,295	\$21,671	\$5,235,818	\$5,660,099	\$149,523	\$339,967	\$425,153
Upper Columbia River Steelhead	\$12,939,893	\$63,615	\$1,519,976	\$680,554	\$1,043	\$6,323	\$317,139	\$314,227	\$4,473,619	\$3,340,283	\$4,455	\$272,480	\$1,946,180
Upper Willamette Steelhead	\$8,750,274	\$400,564	\$371,033	\$119,920	\$0	\$9,334	\$372,277	\$77,524	\$535,878	\$5,791,610	\$207,280	\$559,741	\$305,114
All ESUs ²	\$133,192,204	\$35,716,377	\$9,581,931	\$5,666,824	\$64,131	\$305,585	\$3,128,665	\$1,557,258	\$42,399,733	\$24,523,778	\$1,399,214	\$2,287,398	\$6,561,310

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the 12 Pacific salmon and steelhead ESUs. Costs are presented on an annualized basis. These estimates provide an upper limit to the compliance costs due to the fact that some of the costs associated with section 7 consultation are expected to be borne directly by or passed onto the Federal government (only the estimated annualized section 7 costs incurred by regulated small entities in the Beef Cattle Ranching and Farming, Forestry and Logging, and Highway, Street, and Bridge Construction Sectors were adjusted downward to reflect this likelihood).

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

² Many of the ESUs overlap; thus, the row labeled “All ESUs” estimates unique effects and is not simply the sum of all ESUs.

Source: Northern Economics, Inc. analysis based on data from NOAA Fisheries Northwest Region. The data and method of analysis are described in Appendix B: Estimate of the Economic Impacts on Small Entities by ESU.

Estimate of the Regulatory Burden and Distributional Effects

Compliance costs may affect the economic viability of small entities or their ability to provide services. The severity of the economic impact depends on the magnitude of the compliance costs associated with the rule and the economic and financial characteristics of the affected firms and industries. Industries and firms that are relatively profitable will be better able to absorb new compliance costs without experiencing financial distress.

This analysis assessed whether compliance costs of section 7 consultation might unduly burden the small entities within a particular group or industry sector. To determine if the compliance costs would impose a substantial cost burden the analysis examined these costs as a percentage of profits.

Information on revenue, profit or other measures of economic sustainability is unavailable for the small entities to which the rule will apply. However, the profitability of businesses in each industry sector was approximated using data from Risk Management Association's Annual Statement Studies and IMPLAN (Impact analysis for PLANning), an economic input-output database and software package developed by Minnesota IMPLAN Group, Inc. The profits of small entities in each sector were identified in these data sources using SBA size standards. A more detailed description of the methodology used to determine the profitability of small entities is provided in Appendix C.

Estimates of the profits of a typical (i.e., representative or average) small entity in each industry sector are provided in Table 8. Per-entity compliance costs were then expressed as a percentage of the profitability of a typical business to assess the relative impact of regulatory costs on business and industry viability (Table 9). Compliance costs as a proportion of profits exceeded ten percent for the average directly regulated small entity in the Utility Line Construction Sector in the Hood Canal Summer-run Chum ESU; Other Heavy and Civil Engineering and Construction Sector in the Upper Columbia River Spring-run Chinook Salmon, Middle Columbia River Steelhead, Snake River Basin Steelhead, and Upper Columbia River Steelhead ESUs; and Crop Production Sector in the Puget Sound Chinook ESU. The use of average compliance costs and profitability may underestimate or overestimate the impact of the rule on some small businesses.

Table 8. Estimated Profitability of a Typical Small Entity by Industry Sector

Typical Profitability	Hydroelectric Power Generation¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/Natural Gas Distribution¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Profit margin	7.9	14.8	3.6	7.9	8.3	6.1	9.7	4.5	4.7	8.9	5.7	7.5
Small entity sales	200,000,000	6,000,000	6,000,000	750,000	28,500,000	206,712,877	62,963,851	24,560,351	17,000,000	6,000,000	23,748,006	750,000
Average profits per small entity	15,800,000	888,000	214,712	59,250	2,361,621	12,698,290	6,117,199	1,108,917	799,000	534,000	1,355,572	56,287

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the profits of an average small entity in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Source: Northern Economics, Inc. analysis based on data from Risk Management Association’s Annual Statement Studies and IMPLAN. The data and method of analysis are described in Appendix C: Estimates of the Profits of Small Entities by Industry Sector.

Table 9. Economic Impacts as a Percentage of the Profitability of a Typical Small Entity by ESU and Industry Sector

ESU	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
	Percent of Profits											
Lower Columbia River Chinook	1.3	3.0	1.4	0.0	0.0	0.0	1.0	1.5	5.6	0.4	0.1	1.3
Puget Sound Chinook	3.7	3.7	1.7	0.0	0.0	0.2	0.2	9.7	4.6	0.1	0.0	11.1
Upper Columbia River Spring-run Chinook	0.0	0.3	4.1	0.0	0.0	0.1	0.5	9.2	12.4	0.0	0.1	0.8
Upper Willamette River Chinook	1.3	0.7	1.1	0.0	0.0	0.1	0.1	0.2	4.1	0.1	0.1	1.0
Columbia River Chum	0.7	6.4	0.5	0.0	0.0	0.1	0.6	7.2	7.3	0.1	0.1	1.0
Hood Canal Summer-run Chum	0.7	5.2	1.2	0.0	0.0	0.1	2.5	11.4	7.6	0.1	0.1	1.4
Ozette Lake Sockeye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.4
Lower Columbia River Steelhead	1.4	3.1	2.0	0.0	0.0	0.0	0.9	1.4	5.9	0.4	0.1	2.7
Middle Columbia River Steelhead	0.8	4.7	5.5	0.2	0.0	0.1	0.9	4.0	10.9	0.2	0.1	3.9
Snake River Basin Steelhead	0.2	4.2	4.2	0.3	0.0	0.1	0.1	9.2	15.0	0.6	0.2	1.6
Upper Columbia River Steelhead	0.0	3.4	4.8	0.0	0.0	0.1	2.4	8.3	11.7	0.0	0.1	3.5
Upper Willamette Steelhead	0.1	0.6	0.2	0.0	0.0	0.0	0.1	0.3	4.9	0.1	0.1	1.4
All ESUs ²	1.7	3.9	2.5	0.1	0.0	0.1	0.5	5.6	5.0	0.2	0.1	4.0

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the 12 Pacific salmon and steelhead ESUs. Costs are presented on an annualized basis. These estimates provide an upper limit to the compliance costs due to the fact that some of the costs associated with section 7 consultation are expected to be borne directly by or passed onto the Federal government (only the estimated annualized section 7 costs incurred by regulated small entities in the Beef Cattle Ranching and Farming, Forestry and Logging, and Highway, Street, and Bridge Construction Sectors were adjusted downward to reflect this likelihood).

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs as a percentage of the profitability of a typical small entity in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

² Many of the ESUs overlap; thus, the row labeled “All ESUs” estimates unique effects and is not simply the sum of all ESUs.

Source: Northern Economics, Inc. analysis based on data from Risk Management Association’s Annual Statement Studies and IMPLAN. The data and method of analysis are described in Appendix C: Estimates of the Profits of Small Entities by Industry Sector.

Section 7 consultation costs may impose a disproportionate economic hardship on small entities in certain industry sectors. These costs are unlikely to be directly proportional to the size of the regulated entity. Consequently, it is probable that regulatory costs will represent a higher percentage of profits of small entities than of larger entities. This disproportionality could place small entities in certain industry sectors at a significant competitive disadvantage with larger businesses.

Description of Potential Benefits of the Rule to Small Entities

Designation of critical habitat may also provide economic benefits to some regulated small entities. However, quantification of potential beneficial effects is not possible at this time due to a lack of data.

VII. Description of Significant Alternatives to the Rule

A FRFA must include a description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.

NOAA Fisheries did not consider the alternative of not designating critical habitat for the 12 Pacific salmon and steelhead ESUs because that alternative does not meet the legal requirements of the Endangered Species Act.

NOAA Fisheries did consider the following two significant alternatives to the final designation of critical habitat:

1. Designate all particular areas that meet the definition of critical habitat as given in section 3(5)(A) of the ESA;
2. Designate only particular areas that meet the definition of critical habitat with a high conservation value.¹¹

Under the first alternative, no areas are excluded for economic or other reasons. Through the section 4(b)(2) process of weighing benefits of exclusion against benefits of designation, NOAA Fisheries determined that the final designation of critical habitat provided an appropriate balance of conservation and economic mitigation, and that excluding the areas proposed for exclusion would not result in extinction of the species. The final designation would reduce the adverse economic impacts on entities, including small entities. It is estimated that excluding areas from the rule designating critical habitat could save small entities from zero to \$17.9 million in compliance costs depending on the ESU (Table 10). The estimated total savings across all ESUs are \$30.8 million.

NOAA Fisheries examined and rejected the second alternative of excluding all habitat areas with a low or medium conservation value. The agency determined that this alternative reduces economic impacts relative to the final designation of critical habitat; however, for many habitat

¹¹The rating of individual watersheds for their conservation value is discussed in National Marine Fisheries Service, Assessment of NOAA Fisheries' Critical Habitat Analytical Review Teams for 13 Evolutionarily Significant Units of West Coast Salmon and Steelhead, NOAA Fisheries Northwest Region Report, July 2005, available from NOAA Fisheries at <http://www.nwr.noaa.gov/1salmon/salmesa/crithab/CHsite.htm>. In some cases, watersheds were also rated for their value as a migratory corridor. If a watershed had a high migratory value but did not have a high conservation value, this alternative (as well as the proposed designation) considered only the non-migratory portions of the watershed for exclusion. If such an exclusion was made, only the economic impacts in the non-migratory portions of the watershed were counted as a reduction in the impact of critical habitat designation.

areas the incremental economic gain from excluding that area is relatively small (Table 11). Moreover, this alternative is not sensitive to the fact that for most ESUs, eliminating all low and medium value habitat areas is likely to significantly impede conservation. Because the agency concluded that the benefits of exclusion would not outweigh the benefits of specifying these areas as part of the critical habitat, NOAA Fisheries rejected the second alternative.

Table 10. A Comparison of the Final Critical Habitat Designation and Critical Habitat Designation with No Areas Excluded by ESU

ESU	Alternative 1: Critical Habitat Designation with No Areas Excluded		Final Critical Habitat Designation		Difference Between Critical Habitat Designations	
	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)	Reduction in No. of Regulated Small Entities	Reduction in Economic Impacts on Small Entities (\$)
Lower Columbia River Chinook	2,700	27,117,350	1,885	19,895,678	-815	-7,221,672
Puget Sound Chinook	5,136	77,358,680	2,710	59,419,599	-2,427	-17,939,080
Upper Columbia River Spring-run Chinook	1,369	10,473,719	1,368	9,046,731	-1	-1,426,988
Upper Willamette River Chinook	3,602	20,778,652	2,945	16,595,797	-657	-4,182,855
Columbia River Chum	1,010	13,070,337	1,002	12,939,251	-8	-131,086
Hood Canal Summer-run Chum	244	5,381,290	228	5,379,488	-17	-1,802
Ozette Lake Sockeye	0	2,375	0	2,375	0	0
Lower Columbia River Steelhead	2,390	25,363,467	1,793	19,729,002	-597	-5,634,465
Middle Columbia River Steelhead	2,434	23,640,923	2,336	21,192,730	-97	-2,448,193
Snake River Basin Steelhead	1,370	15,688,865	1,284	15,349,068	-86	-339,798
Upper Columbia River Steelhead	1,712	17,963,027	1,617	12,939,893	-94	-5,023,134
Upper Willamette Steelhead	3,305	12,367,956	2,527	8,750,274	-778	-3,617,681
All ESUs ¹	14,955	164,006,927	11,256	133,192,204	-3,699	-30,814,723

¹ Many of the ESUs overlap; thus, the row labeled “All ESUs” estimates unique effects and is not simply the sum of all ESUs.

Source: Northern Economics, Inc. analysis based on data from NOAA Fisheries Northwest Region. The data and method of analysis are described in Appendix A: Estimate of the Number of Small Entities to Which the Rule will Apply and Appendix B: Estimate of the Economic Impacts on Small Entities by ESU.

Table 11. A Comparison of the Final Critical Habitat Designation and Critical Habitat Designation with Areas of Low and Medium Conservation Value Excluded by ESU

ESU	Alternative 2: Critical Habitat Designation with Areas of Low and Medium Conservation Value Excluded		Final Critical Habitat Designation		Difference Between Critical Habitat Designations	
	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)	No. of Regulated Small Entities	Economic Impacts on Small Entities (\$)
Lower Columbia River Chinook	1,803	18,561,726	1,885	19,895,678	82	1,333,951
Puget Sound Chinook	2,645	59,132,161	2,710	59,419,599	65	287,438
Upper Columbia River Spring-run Chinook	1,368	8,753,165	1,368	9,046,731	0	293,566
Upper Willamette River Chinook	2,689	15,680,902	2,945	16,595,797	256	914,895
Columbia River Chum	1,002	12,934,329	1,002	12,939,251	1	4,922
Hood Canal Summer-run Chum	156	4,344,597	228	5,379,488	71	1,034,891
Ozette Lake Sockeye	0	2,375	0	2,375	0	0
Lower Columbia River Steelhead	1,740	19,088,718	1,793	19,729,002	54	640,284
Middle Columbia River Steelhead	2,252	17,491,021	2,336	21,192,730	84	3,701,708
Snake River Basin Steelhead	1,223	14,051,917	1,284	15,349,068	61	1,297,151
Upper Columbia River Steelhead	1,540	10,889,320	1,617	12,939,893	77	2,050,573
Upper Willamette Steelhead	2,160	7,259,584	2,527	8,750,274	367	1,490,691
All ESUs ¹	10,425	125,081,946	11,256	133,192,204	831	8,110,258

¹ Many of the ESUs overlap; thus, the row labeled “All ESUs” estimates unique effects and is not simply the sum of all ESUs.

Source: Northern Economics, Inc. analysis based on data from NOAA Fisheries Northwest Region. The data and method of analysis are described in Appendix A: Estimate of the Number of Small Entities to Which the Rule will Apply and Appendix B: Estimate of the Economic Impacts on Small Entities by ESU. and Appendix B: Estimate of the Economic Impacts on Small Entities by ESU.

In describing the economic effects of including or excluding a particular area from critical habitat, it is not accurate to include all of the co-extensive impacts because it is unlikely that the impacts attributable to critical habitat designation would ever account for the total impacts. However, in examining its extensive consultation record, NOAA Fisheries could not discern a difference in the impact of applying section 7’s jeopardy requirement versus applying the adverse modification requirement. For that reason, NOAA Fisheries decided to analyze the full impact of the adverse modification requirement, regardless of whether it is coextensive with other requirements, such as jeopardy.

Under the ESA, NOAA Fisheries has little discretion, if any, to mandate different compliance methods or schedules for small entities that might “take into account the resources available to small entities” but not comply with the statutory requirements. However, in formulating its biological opinion and any reasonable and prudent alternatives, NOAA Fisheries must use the best scientific and commercial data available and must give appropriate consideration to any beneficial actions taken by the Federal agency or applicant, including any actions taken prior to the initiation of consultation. In addition, NOAA Fisheries must utilize the expertise of the Federal agency and any applicant in identifying reasonable and prudent alternatives. Reasonable and prudent alternatives identified during formal consultation must be economically and technologically feasible.

It is the practice of NOAA Fisheries in a rulemaking to designate critical habitat to also include advice on activities that may destroy or adversely modify critical habitat. By issuing this advice,

NOAA Fisheries will explain the rule, provide compliance scenarios to illustrate and clarify any complexities, and provide greater certainty for small businesses' planning purposes.

The ESA requires each Federal agency, in consultation with NOAA Fisheries, to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat. Section 7 offers action agencies and applicants, in consultation with NOAA Fisheries, to craft their actions to avoid jeopardizing the continued existence of any listed species or destroy or adversely modify its critical habitat. NOAA Fisheries acknowledges that technical and functional performance criteria are intended to give discretion in achieving the required end result and provide regulated entities the flexibility to achieve the regulatory objective in a more cost-effective way. To that end, NOAA Fisheries has developed the concept of "proper functioning condition" of salmonid habitat and a "matrix of pathways and indicators" consulting agencies and applicants can use to analyze how their actions will affect proper functioning condition.

Although the rule imposes some costs, it is important to recognize that the designation of critical habitat is mandated by the ESA. NOAA Fisheries considered and rejected the alternative of exempting small entities from coverage of the rule, or any part thereof, because the agency does not have the discretion to provide for exemptions from the requirements of the ESA based on the size of the applicant. However, section 7 of the ESA allows an agency or applicant to apply for an exemption from the requirement to avoid jeopardy or adverse modification of critical habitat.

Appendix A: Estimate of the Number of Small Entities to Which the Rule will Apply

The purpose of this appendix is to describe how an estimate of the number of regulated small entities in each of the 12 Pacific salmon and steelhead ESUs was derived. For each county included in the analysis, an estimate of the total number of entities within each industry sector subject to the regulation was derived by searching the D&B Duns Market Identifiers (File 516) by NAICS code. Census tract data from the 2000 Census of Population and Housing were used to indirectly estimate the number of businesses in each ESU by assuming that the number of businesses is directly proportional to population density. These percentages were applied to each affected industry to calculate the number of regulated businesses in each sector that are likely to be small.

Table 12. Estimated Number of Regulated Small Entities in Upper Willamette Steelhead ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Benton	OR	78,153	6,276	8.0	282	237	23	19
Clackamas	OR	338,391	234,873	69.4	725	666	503	462
Clatsop	OR	35,630	43	0.1	135	121	0	0
Columbia	OR	43,560	21,866	50.2	176	168	88	84
Linn	OR	103,069	95,659	92.8	362	326	336	303
Marion	OR	284,834	284,277	99.8	643	555	642	554
Multnomah	OR	660,486	580,549	87.9	904	774	795	680
Polk	OR	62,380	59,273	95.0	177	147	168	140
Washington	OR	445,342	22,115	5.0	720	632	36	31
Yamhill	OR	84,992	68,611	80.7	325	301	262	243
Pacific	WA	20,984	470	2.2	118	110	3	2
Wahkiakum	WA	3,824	822	21.5	42	39	9	8
Total		2,161,645	1,374,834	63.6	4,609	4,076	2,865	2,527

Table 13. Estimated Number of Regulated Small Entities in Upper Willamette Steelhead ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Benton	OR	0	0	4	1	1	0	0	1	0	1	3	8
Clackamas	OR	5	18	55	27	44	9	3	37	36	72	120	36
Clatsop	OR	0	0	0	0	0	0	0	0	0	0	0	0
Columbia	OR	2	7	24	12	7	3	1	5	6	4	16	1
Linn	OR	1	10	58	39	19	4	5	16	18	11	77	45
Marion	OR	3	12	43	32	47	5	4	43	32	51	133	150
Multnomah	OR	18	11	16	11	50	29	3	70	40	183	219	30
Polk	OR	0	2	21	10	9	1	2	0	6	13	30	47
Washington	OR	0	1	2	1	3	0	0	3	2	6	8	5
Yamhill	OR	2	10	31	31	19	15	0	3	8	6	45	73
Pacific	WA	0	0	0	0	0	0	0	0	0	0	1	0
Wahkiakum	WA	0	0	3	1	1	0	0	0	0	0	2	0
Total		31	72	257	163	199	66	17	177	148	347	655	395

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 14. Estimated Number of Regulated Small Entities in Upper Willamette River Chinook Salmon ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Benton	OR	78,153	75,730	96.9	282	237	273	230
Clackamas	OR	338,391	287,009	84.8	725	666	615	565
Clatsop	OR	35,630	43	0.1	135	121	0	0
Columbia	OR	43,560	21,866	50.2	176	168	88	84
Lane	OR	322,959	160,745	49.8	811	727	404	362
Lincoln	OR	44,479	84	0.2	168	146	0	0
Linn	OR	103,069	102,942	99.9	362	326	362	326
Marion	OR	284,834	231,872	81.4	643	555	523	452
Multnomah	OR	660,486	580,549	87.9	904	774	795	680
Polk	OR	62,380	56,929	91.3	177	147	162	134
Washington	OR	445,342	2,252	0.5	720	632	4	3
Yamhill	OR	84,992	27,628	32.5	325	301	106	98
Pacific	WA	20,984	470	2.2	118	110	3	2
Wahkiakum	WA	3,824	822	21.5	42	39	9	8
Total		2,529,083	1,548,941	61.2	5,588	4,949	3,343	2,945

Table 15. Estimated Number of Regulated Small Entities in Upper Willamette River Chinook Salmon ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Benton	OR	0	2	48	8	10	2	0	7	5	17	39	92
Clackamas	OR	6	22	67	33	54	11	3	45	44	88	147	44
Clatsop	OR	0	0	0	0	0	0	0	0	0	0	0	0
Columbia	OR	2	7	24	12	7	3	1	5	6	4	16	1
Lane	OR	6	8	72	24	30	9	3	19	20	40	102	28
Lincoln	OR	0	0	0	0	0	0	0	0	0	0	0	0
Linn	OR	1	11	62	42	21	4	5	17	19	12	83	49
Marion	OR	2	10	35	26	38	4	3	35	26	42	108	122
Multnomah	OR	18	11	16	11	50	29	3	70	40	183	219	30
Polk	OR	0	2	20	9	8	1	2	0	5	13	29	45
Washington	OR	0	0	0	0	0	0	0	0	0	1	1	1
Yamhill	OR	1	4	12	12	8	6	0	1	3	2	18	30
Pacific	WA	0	0	0	0	0	0	0	0	0	0	1	0
Wahkiakum	WA	0	0	3	1	1	0	0	0	0	0	2	0
Total		37	77	361	178	227	69	20	200	170	401	766	441

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 16. Estimated Number of Regulated Small Entities in Lower Columbia River Steelhead ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Clackamas	OR	338,391	203,829	60.2	725	666	437	401
Clatsop	OR	35,630	43	0.1	135	121	0	0
Columbia	OR	43,560	21,866	50.2	176	168	88	84
Hood River	OR	20,411	20,410	100.0	222	194	222	194
Marion	OR	284,834	6	0.0	643	555	0	0
Multnomah	OR	660,486	625,386	94.7	904	774	856	733
Wasco	OR	23,791	692	2.9	147	131	4	4
Washington	OR	445,342	25	0.0	720	632	0	0
Clark	WA	345,238	67,679	19.6	582	525	114	103
Cowlitz	WA	92,948	48,914	52.6	255	227	134	119
Klickitat	WA	19,161	4,092	21.4	148	137	32	29
Lewis	WA	68,600	19,374	28.2	334	312	94	88
Pacific	WA	20,984	470	2.2	118	110	3	2
Skamania	WA	9,872	8,664	87.8	33	30	29	26
Wahkiakum	WA	3,824	822	21.5	42	39	9	8
Total		2,413,072	1,022,272	42.4	5,184	4,621	2,022	1,793

Table 17. Estimated Number of Regulated Small Entities in Lower Columbia River Steelhead ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Clackamas	OR	4	16	48	23	39	8	2	32	31	63	104	31
Clatsop	OR	0	0	0	0	0	0	0	0	0	0	0	0
Columbia	OR	2	7	24	12	7	3	1	5	6	4	16	1
Hood River	OR	4	5	6	2	7	6	0	4	4	10	17	129
Marion	OR	0	0	0	0	0	0	0	0	0	0	0	0
Multnomah	OR	20	12	17	11	54	31	3	76	44	197	236	32
Wasco	OR	0	0	0	0	0	0	0	0	0	0	0	2
Washington	OR	0	0	0	0	0	0	0	0	0	0	0	0
Clark	WA	1	1	10	5	15	3	1	8	9	16	28	8
Cowlitz	WA	2	0	39	12	10	3	1	8	11	6	26	3
Klickitat	WA	1	0	7	4	3	1	0	1	1	0	4	8
Lewis	WA	3	2	29	14	9	3	0	4	6	2	15	2
Pacific	WA	0	0	0	0	0	0	0	0	0	0	1	0
Skamania	WA	1	0	5	2	4	1	0	1	3	1	7	3
Wahkiakum	WA	0	0	3	1	1	0	0	0	0	0	2	0
Total		37	42	189	86	147	58	8	138	114	298	456	220

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 18. Estimated Number of Regulated Small Entities in Lower Columbia River Chinook Salmon ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Clackamas	OR	338,391	199,053	58.8	725	666	426	392
Clatsop	OR	35,630	10,541	29.6	135	121	40	36
Columbia	OR	43,560	24,942	57.3	176	168	101	96
Hood River	OR	20,411	20,410	100.0	222	194	222	194
Multnomah	OR	660,486	625,386	94.7	904	774	856	733
Wasco	OR	23,791	692	2.9	147	131	4	4
Washington	OR	445,342	25	0.0	720	632	0	0
Clark	WA	345,238	67,679	19.6	582	525	114	103
Cowlitz	WA	92,948	48,909	52.6	255	227	134	119
Klickitat	WA	19,161	6,844	35.7	148	137	53	49
Lewis	WA	68,600	19,374	28.2	334	312	94	88
Pacific	WA	20,984	1,524	7.3	118	110	9	8
Skamania	WA	9,872	9,040	91.6	33	30	30	27
Wahkiakum	WA	3,824	3,500	91.5	42	39	38	36
Total		2,128,238	1,037,919	48.8	4,541	4,066	2,122	1,885

Table 19. Estimated Number of Regulated Small Entities in Lower Columbia River Chinook Salmon ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Clackamas	OR	4	15	46	23	38	8	2	31	31	61	102	31
Clatsop	OR	0	1	8	2	4	0	0	1	3	2	13	0
Columbia	OR	2	7	27	13	7	3	1	5	6	4	18	1
Hood River	OR	4	5	6	2	7	6	0	4	4	10	17	129
Multnomah	OR	20	12	17	11	54	31	3	76	44	197	236	32
Wasco	OR	0	0	0	0	0	0	0	0	0	0	0	2
Washington	OR	0	0	0	0	0	0	0	0	0	0	0	0
Clark	WA	1	1	10	5	15	3	1	8	9	16	28	8
Cowlitz	WA	2	0	39	12	10	3	1	8	11	6	26	3
Klickitat	WA	1	1	12	7	4	1	0	1	1	1	6	13
Lewis	WA	3	2	29	14	9	3	0	4	6	2	15	2
Pacific	WA	0	0	1	1	0	0	0	0	0	0	4	1
Skamania	WA	1	0	5	2	4	1	0	1	3	1	7	3
Wahkiakum	WA	1	0	13	5	3	1	1	1	2	0	10	0
Total		38	45	215	96	154	60	9	141	120	300	482	225

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 20. Estimated Number of Regulated Small Entities in Columbia River Chum Salmon ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Clatsop	OR	35,630	9,770	27.4	135	121	37	33
Hood River	OR	20,411	4,633	22.7	222	194	50	44
Multnomah	OR	660,486	3,194	0.5	904	774	4	4
Wasco	OR	23,791	692	2.9	147	131	4	4
Clark	WA	345,238	343,428	99.5	582	525	579	522
Cowlitz	WA	92,948	91,961	98.9	255	227	252	225
Klickitat	WA	19,161	6,844	35.7	148	137	53	49
Lewis	WA	68,600	12,436	18.1	334	312	61	57
Pacific	WA	20,984	1,524	7.3	118	110	9	8
Skamania	WA	9,872	6,665	67.5	33	30	22	20
Wahkiakum	WA	3,824	3,626	94.8	42	39	40	37
Total		1,300,945	484,773	37.3	2,920	2,600	1,111	1,002

Table 21. Estimated Number of Regulated Small Entities in Columbia River Chum Salmon ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Clatsop	OR	0	1	8	2	3	0	0	1	3	2	12	0
Hood River	OR	1	1	1	0	2	1	0	1	1	2	4	29
Multnomah	OR	0	0	0	0	0	0	0	0	0	1	1	0
Wasco	OR	0	0	0	0	0	0	0	0	0	0	0	2
Clark	WA	6	3	50	23	74	13	4	41	46	82	140	42
Cowlitz	WA	3	0	74	22	19	5	1	15	21	11	48	6
Klickitat	WA	1	1	12	7	4	1	0	1	1	1	6	13
Lewis	WA	2	1	18	9	6	2	0	3	4	1	9	1
Pacific	WA	0	0	1	1	0	0	0	0	0	0	4	1
Skamania	WA	1	0	4	1	3	1	0	1	2	1	5	2
Wahkiakum	WA	1	0	13	5	3	1	1	1	2	0	10	0
Total		15	8	182	70	114	25	7	64	80	101	242	96

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 22. Estimated Number of Regulated Small Entities in Ozette Lake Sockeye Salmon ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Estimated Number of Regulated Entities in County	Estimated Number of Regulated Small Entities in County	Estimated Number of Regulated Entities in ESU	Estimated Number of Regulated Small Entities in ESU
Clallam	WA	64,525	82	0.1	255	244	0	0
Total		64,525	82	0.1	255	244	0	0

Table 23. Estimated Number of Regulated Small Entities in Ozette Lake Sockeye Salmon ESU by County and Industry Sector

County	State	Hydroelectric Power Generation¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Clallam	WA	0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0	0	0	0

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 24. Estimated Number of Regulated Small Entities in Hood Canal Summer-run Chum Salmon ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Clallam	WA	64,525	19,932	30.9	255	244	79	75
Jefferson	WA	25,953	23,530	90.7	112	104	102	94
Kitsap	WA	231,969	20,239	8.7	383	362	33	32
Mason	WA	49,405	8,495	17.2	166	153	29	26
Total		371,852	72,196	19.4	916	863	242	228

Table 25. Estimated Number of Regulated Small Entities in Hood Canal Summer-run Chum Salmon ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Clallam	WA	1	3	26	1	7	1	0	5	6	4	19	2
Jefferson	WA	3	2	16	4	6	4	0	9	11	5	31	4
Kitsap	WA	1	1	3	0	3	1	0	4	4	3	10	1
Mason	WA	1	2	5	1	2	1	0	3	3	1	8	0
Total		5	8	50	6	18	7	1	22	23	13	68	7

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 26. Estimated Number of Regulated Small Entities in Upper Columbia River Spring-run Chinook Salmon ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Clatsop	OR	35,630	43	0.1	135	121	0	0
Gilliam	OR	1,915	577	30.1	33	32	10	10
Hood River	OR	20,411	4,633	22.7	222	194	50	44
Morrow	OR	10,995	7,700	70.0	86	73	60	51
Multnomah	OR	660,486	3,194	0.5	904	774	4	4
Sherman	OR	1,934	909	47.0	69	66	32	31
Umatilla	OR	70,548	6,662	9.4	350	296	33	28
Wasco	OR	23,791	18,549	78.0	147	131	115	102
Adams	WA	16,428	89	0.5	201	175	1	1
Benton	WA	142,475	88,803	62.3	336	281	209	175
Chelan	WA	66,616	58,298	87.5	574	508	502	445
Clark	WA	345,238	6,188	1.8	582	525	10	9
Douglas	WA	32,603	27,404	84.1	300	275	252	231
Franklin	WA	49,347	13,387	27.1	215	170	58	46
Grant	WA	74,698	6,951	9.3	413	358	38	33
Kittitas	WA	33,362	174	0.5	154	141	1	1
Klickitat	WA	19,161	6,678	34.9	148	137	52	48
Okanogan	WA	39,564	9,436	23.8	326	299	78	71
Pacific	WA	20,984	470	2.2	118	110	3	2
Skamania	WA	9,872	4,593	46.5	33	30	15	14
Wahkiakum	WA	3,824	822	21.5	42	39	9	8
Walla	WA	55,180	3,027	5.5	265	239	15	13
Yakima	WA	222,581	3	0.0	960	791	0	0
Total		1,957,643	268,590	13.7	6,613	5,765	1,549	1,368

Table 27. Estimated Number of Regulated Small Entities in Upper Columbia River Spring-run Chinook Salmon ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Clatsop	OR	0	0	0	0	0	0	0	0	0	0	0	0
Gilliam	OR	0	0	0	3	0	1	0	0	0	0	1	5
Hood River	OR	1	1	1	0	2	1	0	1	1	2	4	29
Morrow	OR	2	1	2	12	1	4	0	0	0	1	6	23
Multnomah	OR	0	0	0	0	0	0	0	0	0	1	1	0
Sherman	OR	0	0	0	4	0	0	0	0	0	0	1	24
Umatilla	OR	0	1	1	4	1	1	0	1	0	1	4	14
Wasco	OR	1	5	2	10	6	3	1	4	5	1	9	56
Adams	WA	0	0	0	0	0	0	0	0	0	0	0	1
Benton	WA	2	9	1	16	12	5	1	12	11	10	26	70
Chelan	WA	4	16	16	6	16	6	0	11	9	17	38	307
Clark	WA	0	0	1	0	1	0	0	1	1	1	3	1
Douglas	WA	1	2	2	3	3	4	0	3	2	4	10	198
Franklin	WA	0	1	0	2	1	1	0	2	1	2	7	29
Grant	WA	0	1	0	3	1	1	0	1	1	1	2	22
Kittitas	WA	0	0	0	0	0	0	0	0	0	0	0	0
Klickitat	WA	1	1	12	7	4	1	0	1	1	1	6	13
Okanogan	WA	1	3	6	8	3	2	0	3	0	2	6	38
Pacific	WA	0	0	0	0	0	0	0	0	0	0	1	0
Skamania	WA	0	0	3	1	2	0	0	0	1	0	4	1
Wahkiakum	WA	0	0	3	1	1	0	0	0	0	0	2	0
Walla Walla	WA	0	0	0	0	0	0	0	0	1	1	1	9
Yakima	WA	0	0	0	0	0	0	0	0	0	0	0	0
Total		17	40	51	82	55	32	2	40	34	45	130	841

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 28. Estimated Number of Regulated Small Entities in Upper Columbia River Steelhead ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Clatsop	OR	35,630	43	0.1	135	121	0	0
Gilliam	OR	1,915	577	30.1	33	32	10	10
Hood River	OR	20,411	4,633	22.7	222	194	50	44
Morrow	OR	10,995	7,700	70.0	86	73	60	51
Multnomah	OR	660,486	3,194	0.5	904	774	4	4
Sherman	OR	1,934	909	47.0	69	66	32	31
Umatilla	OR	70,548	6,662	9.4	350	296	33	28
Wasco	OR	23,791	18,549	78.0	147	131	115	102
Adams	WA	16,428	3,617	22.0	201	175	44	39
Benton	WA	142,475	88,803	62.3	336	281	209	175
Chelan	WA	66,616	58,298	87.5	574	508	502	445
Clark	WA	345,238	6,188	1.8	582	525	10	9
Douglas	WA	32,603	29,610	90.8	300	275	272	250
Franklin	WA	49,347	13,387	27.1	215	170	58	46
Grant	WA	74,698	11,346	15.2	413	358	63	54
Kittitas	WA	33,362	174	0.5	154	141	1	1
Klickitat	WA	19,161	6,678	34.9	148	137	52	48
Okanogan	WA	39,564	32,199	81.4	326	299	265	243
Pacific	WA	20,984	470	2.2	118	110	3	2
Skamania	WA	9,872	4,593	46.5	33	30	15	14
Wahkiakum	WA	3,824	822	21.5	42	39	9	8
Walla	WA	55,180	3,027	5.5	265	239	15	13
Yakima	WA	222,581	3	0.0	960	791	0	0
Total		1,957,643	301,482	15.4	6,613	5,765	1,824	1,617

Table 29. Estimated Number of Regulated Small Entities in Upper Columbia River Steelhead ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Clatsop	OR	0	0	0	0	0	0	0	0	0	0	0	0
Gilliam	OR	0	0	0	3	0	1	0	0	0	0	1	5
Hood River	OR	1	1	1	0	2	1	0	1	1	2	4	29
Morrow	OR	2	1	2	12	1	4	0	0	0	1	6	23
Multnomah	OR	0	0	0	0	0	0	0	0	0	1	1	0
Sherman	OR	0	0	0	4	0	0	0	0	0	0	1	24
Umatilla	OR	0	1	1	4	1	1	0	1	0	1	4	14
Wasco	OR	1	5	2	10	6	3	1	4	5	1	9	56
Adams	WA	1	2	0	3	0	1	0	1	0	0	2	29
Benton	WA	2	9	1	16	12	5	1	12	11	10	26	70
Chelan	WA	4	16	16	6	16	6	0	11	9	17	38	307
Clark	WA	0	0	1	0	1	0	0	1	1	1	3	1
Douglas	WA	1	2	2	4	4	5	0	3	2	5	11	213
Franklin	WA	0	1	0	2	1	1	0	2	1	2	7	29
Grant	WA	1	2	0	5	2	1	0	2	2	1	4	36
Kittitas	WA	0	0	0	0	0	0	0	0	0	0	0	0
Klickitat	WA	1	1	12	7	4	1	0	1	1	1	6	13
Okanogan	WA	4	9	21	27	9	7	0	9	2	7	20	129
Pacific	WA	0	0	0	0	0	0	0	0	0	0	1	0
Skamania	WA	0	0	3	1	2	0	0	0	1	0	4	1
Wahkiakum	WA	0	0	3	1	1	0	0	0	0	0	2	0
Walla Walla	WA	0	0	0	0	0	0	0	0	1	1	1	9
Yakima	WA	0	0	0	0	0	0	0	0	0	0	0	0
Total		21	50	66	106	62	38	2	48	36	50	149	990

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 30. Estimated Number of Regulated Small Entities in Middle Columbia River Steelhead ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Clatsop	OR	35,630	43	0.1	135	121	0	0
Gilliam	OR	1,915	1,832	95.7	33	32	32	31
Grant	OR	7,935	7,597	95.7	84	79	80	76
Hood River	OR	20,411	4,633	22.7	222	194	50	44
Jefferson	OR	19,009	744	3.9	88	84	3	3
Morrow	OR	10,995	7,755	70.5	86	73	61	51
Multnomah	OR	660,486	3,194	0.5	904	774	4	4
Sherman	OR	1,934	1,934	100.0	69	66	69	66
Umatilla	OR	70,548	59,994	85.0	350	296	298	252
Wasco	OR	23,791	21,972	92.4	147	131	136	121
Wheeler	OR	1,547	1,546	99.9	25	24	25	24
Benton	WA	142,475	142,317	99.9	336	281	336	281
Clark	WA	345,238	6,188	1.8	582	525	10	9
Columbia	WA	4,064	3,526	86.8	44	42	38	36
Franklin	WA	49,347	12,739	25.8	215	170	56	44
Kittitas	WA	33,362	33,188	99.5	154	141	153	140
Klickitat	WA	19,161	18,623	97.2	148	137	144	133
Pacific	WA	20,984	470	2.2	118	110	3	2
Skamania	WA	9,872	4,969	50.3	33	30	17	15
Wahkiakum	WA	3,824	822	21.5	42	39	9	8
Walla	WA	55,180	52,892	95.9	265	239	254	229
Yakima	WA	222,581	215,496	96.8	960	791	929	766
Total		1,760,289	602,474	34.2	5,040	4,379	2,707	2,336

Table 31. Estimated Number of Regulated Small Entities in Middle Columbia River Steelhead ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Clatsop	OR	0	0	0	0	0	0	0	0	0	0	0	0
Gilliam	OR	1	0	0	9	0	2	0	0	0	0	2	17
Grant	OR	2	0	22	33	4	3	0	1	4	0	7	1
Hood River	OR	1	1	1	0	2	1	0	1	1	2	4	29
Jefferson	OR	0	0	0	1	0	0	0	0	0	0	0	0
Morrow	OR	2	1	2	12	1	4	0	0	0	1	6	23
Multnomah	OR	0	0	0	0	0	0	0	0	0	1	1	0
Sherman	OR	1	0	0	9	1	1	0	0	0	0	2	52
Umatilla	OR	4	5	10	37	11	7	1	8	3	9	32	125
Wasco	OR	1	6	3	12	7	4	1	5	6	1	10	66
Wheeler	OR	0	0	2	15	1	0	0	0	1	0	1	4
Benton	WA	4	14	2	26	19	8	1	20	17	16	42	112
Clark	WA	0	0	1	0	1	0	0	1	1	1	3	1
Columbia	WA	0	0	3	3	0	0	0	2	2	0	3	23
Franklin	WA	0	1	0	2	1	1	0	2	1	2	6	28
Kittitas	WA	2	8	29	33	8	4	0	3	6	7	19	22
Klickitat	WA	3	2	33	18	12	4	1	4	3	2	17	35
Pacific	WA	0	0	0	0	0	0	0	0	0	0	1	0
Skamania	WA	1	0	3	1	2	1	0	1	2	1	4	2
Wahkiakum	WA	0	0	3	1	1	0	0	0	0	0	2	0
Walla Walla	WA	3	3	5	8	9	4	0	6	10	10	23	150
Yakima	WA	5	19	12	45	26	7	2	25	15	19	72	519
Total		30	61	132	264	106	50	6	77	70	72	257	1,211

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 32. Estimated Number of Regulated Small Entities in Puget Sound Chinook Salmon ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Clallam	WA	64,525	16,173	25.1	255	244	64	61
Island	WA	71,558	462	0.6	152	146	1	1
Jefferson	WA	25,953	953	3.7	112	104	4	4
King	WA	1,737,034	1,190,255	68.5	2,544	2,200	1,743	1,507
Kitsap	WA	231,969	2,053	0.9	383	362	3	3
Mason	WA	49,405	2,402	4.9	166	153	8	7
Pierce	WA	700,820	255,224	36.4	969	792	353	288
San Juan	WA	14,077	205	1.5	88	84	1	1
Skagit	WA	102,979	64,392	62.5	379	345	237	216
Snohomish	WA	606,024	295,163	48.7	986	911	480	444
Thurston	WA	207,355	24,550	11.8	409	376	48	45
Whatcom	WA	166,814	49,229	29.5	529	447	156	132
Total		3,978,513	1,901,061	47.8	6,972	6,164	3,100	2,710

Table 33. Estimated Number of Regulated Small Entities in Puget Sound Chinook Salmon ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Clallam	WA	1	3	21	1	6	1	0	4	5	3	16	2
Island	WA	0	0	0	0	0	0	0	0	0	0	0	0
Jefferson	WA	0	0	1	0	0	0	0	0	0	0	1	0
King	WA	13	32	48	13	123	29	7	140	110	386	565	40
Kitsap	WA	0	0	0	0	0	0	0	0	0	0	1	0
Mason	WA	0	0	2	0	0	0	0	1	1	0	2	0
Pierce	WA	5	8	8	11	30	8	2	38	22	47	96	15
San Juan	WA	0	0	0	0	0	0	0	0	0	0	0	0
Skagit	WA	3	1	31	14	19	5	2	18	22	14	67	20
Snohomish	WA	7	12	38	10	42	9	3	36	42	67	162	15
Thurston	WA	1	2	7	3	3	1	1	3	5	5	11	2
Whatcom	WA	2	8	13	9	7	4	1	9	12	8	46	14
Total		32	65	166	62	232	58	16	250	220	531	968	109

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 34. Estimated Number of Regulated Small Entities in Snake River Basin Steelhead ESU by County

County	State	County Population	Estimated Population in ESU	% County Population in ESU	Regulated Entities in County	Regulated Small Entities in County	Regulated Entities in ESU	Regulated Small Entities in ESU
Adams	ID	3,476	199	5.7	40	39	2	2
Blaine	ID	18,991	23	0.1	108	104	0	0
Clearwater	ID	8,930	6,607	74.0	74	69	55	51
Custer	ID	4,342	2,746	63.2	34	34	22	22
Idaho	ID	15,511	11,916	76.8	127	121	98	93
Latah	ID	34,935	6,028	17.3	154	149	27	26
Lemhi	ID	7,806	7,529	96.5	48	45	46	43
Lewis	ID	3,747	3,067	81.9	54	51	44	42
Nez Perce	ID	37,410	36,044	96.3	108	101	104	97
Valley	ID	7,651	75	1.0	47	44	0	0
Clatsop	OR	35,630	43	0.1	135	121	0	0
Gilliam	OR	1,915	577	30.1	33	32	10	10
Hood River	OR	20,411	4,633	22.7	222	194	50	44
Morrow	OR	10,995	7,700	70.0	86	73	60	51
Multnomah	OR	660,486	3,194	0.5	904	774	4	4
Sherman	OR	1,934	909	47.0	69	66	32	31
Umatilla	OR	70,548	6,672	9.5	350	296	33	28
Union	OR	24,530	23,735	96.8	152	143	147	138
Wallowa	OR	7,226	7,226	100.0	104	102	104	102
Wasco	OR	23,791	18,549	78.0	147	131	115	102
Asotin	WA	20,551	20,551	100.0	61	58	61	58
Benton	WA	142,475	88,803	62.3	336	281	209	175
Clark	WA	345,238	6,188	1.8	582	525	10	9
Columbia	WA	4,064	342	8.4	44	42	4	4
Franklin	WA	49,347	13,519	27.4	215	170	59	47
Garfield	WA	2,397	432	18.0	37	37	7	7
Klickitat	WA	19,161	6,678	34.9	148	137	52	48
Pacific	WA	20,984	470	2.2	118	110	3	2
Skamania	WA	9,872	4,593	46.5	33	30	15	14
Wahkiakum	WA	3,824	822	21.5	42	39	9	8
Walla	WA	55,180	4,959	9.0	265	239	24	21
Whitman	WA	40,740	483	1.2	349	338	4	4
Yakima	WA	222,581	3	0.0	960	791	0	0
Total		1,936,679	295,315	15.2	6,186	5,486	1,411	1,284

Table 35. Estimated Number of Regulated Small Entities in Snake River Basin Steelhead ESU by County and Industry Sector

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Adams	ID	0	0	1	1	0	0	0	0	0	0	0	0
Blaine	ID	0	0	0	0	0	0	0	0	0	0	0	0
Clearwater	ID	1	1	24	1	1	1	0	2	0	1	9	9
Custer	ID	0	1	1	10	1	1	0	0	1	1	6	0
Idaho	ID	1	2	15	18	8	2	0	4	3	0	15	25
Latah	ID	0	0	5	2	1	0	0	1	1	0	2	14
Lemhi	ID	0	2	2	19	5	1	0	3	2	3	6	1
Lewis	ID	0	0	7	7	2	0	0	1	1	2	2	20
Nez Perce	ID	1	4	13	1	8	3	2	5	7	11	12	32
Valley	ID	0	0	0	0	0	0	0	0	0	0	0	0
Clatsop	OR	0	0	0	0	0	0	0	0	0	0	0	0
Gilliam	OR	0	0	0	3	0	1	0	0	0	0	1	5
Hood River	OR	1	1	1	0	2	1	0	1	1	2	4	29
Morrow	OR	2	1	2	12	1	4	0	0	0	1	6	23
Multnomah	OR	0	0	0	0	0	0	0	0	0	1	1	0
Sherman	OR	0	0	0	4	0	0	0	0	0	0	1	24
Umatilla	OR	0	1	1	4	1	1	0	1	0	1	4	14
Union	OR	1	1	19	48	5	1	0	6	5	3	12	38
Wallowa	OR	1	4	18	44	5	1	0	2	2	2	10	13
Wasco	OR	1	5	2	10	6	3	1	4	5	1	9	56
Asotin	WA	0	1	11	10	4	0	0	4	4	2	7	15
Benton	WA	2	9	1	16	12	5	1	12	11	10	26	70
Clark	WA	0	0	1	0	1	0	0	1	1	1	3	1
Columbia	WA	0	0	0	0	0	0	0	0	0	0	0	2
Franklin	WA	0	1	0	2	1	1	0	2	1	2	7	30
Garfield	WA	0	0	0	0	0	0	0	0	0	0	0	6
Klickitat	WA	1	1	12	7	4	1	0	1	1	1	6	13
Pacific	WA	0	0	0	0	0	0	0	0	0	0	1	0
Skamania	WA	0	0	3	1	2	0	0	0	1	0	4	1
Wahkiakum	WA	0	0	3	1	1	0	0	0	0	0	2	0

County	State	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub-division	NPDES-Permitted Activities	Crop Production
Walla Walla	WA	0	0	0	1	1	0	0	1	1	1	2	14
Whitman	WA	0	0	0	0	0	0	0	0	0	0	0	3
Yakima	WA	0	0	0	0	0	0	0	0	0	0	0	0
Total		15	35	146	225	71	28	4	51	47	47	156	460

¹ All entities in the Hydroelectric Power Generation and Electric Services Sectors are assumed to be small entities. Consequently, the compliance costs for small entities in these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Appendix B: Estimate of the Economic Impacts on Small Entities by ESU

The purpose of this appendix is to describe how estimates of the compliance costs for small entities in each of the 12 Pacific salmon and steelhead ESUs were derived. Estimates of the costs per project for each industry sector were based on a review of the historical consultation record (Table 36). The costs were annualized based on the forecast period and the likelihood of consultation and modifications.

It is probable that businesses that do not meet SBA's small business size standards will have larger projects and, therefore, greater costs per project. However, in order to present a conservative (i.e., high end) estimate of per-project costs, this analysis assumes that these costs are as high for small businesses as they are for larger ones.

An estimate of the number of projects that would be affected by section 7 consultation was only available for all businesses, both large and small. It is likely that businesses that do not meet SBA's small business size standards will have a greater number of affected projects per entity. However, due to a lack of information regarding the number of affected projects involving small entities, this analysis conservatively assumes that the ratio of small entity projects to all projects is equal to the ratio of small entities to all entities.

Based on the predicted annual project modification costs and number of projects by small entities that would be affected, an estimate of the annual economic impacts on small entities in each ESU was calculated. Both overall compliance costs and per-entity compliance costs are presented. The cost estimates in the tables represent all costs attributable to Pacific salmon and steelhead section 7 consultations, including both those attributable to the listing of the ESUs as well as those attributable to critical habitat designation.

Table 36. Estimates of Expected Costs of Section 7 Impacts to a Project by Activity¹

Activity	Sub-activity	Cost Unit	Mid-range Cost Estimate	Present Value of Cost Stream	Forecast Period	Likelihood of Consultation and Modifications	Annual Expected Cost
Hydropower Dams ²	Small (0-5 MW)	per dam	\$2,120,500	\$2,120,500	20 years	10% over 20 years	\$10,603
	Medium (5-20 MW)		\$5,750,000	\$5,750,000	50 years	100% over 50 years	\$115,000
	Large (>20 MW), requires fish passage		\$73,850,000	\$73,850,000	50 years	100% over 50 years	\$1,477,000
	Large (>20 MW), does not require fish passage		\$45,230,000	\$45,230,000	50 years	100% over 50 years	\$904,600
	Dam removal		\$24,000,000	\$24,000,000	Applied to known cases of future removals		
Non-hydropower Dams	Federal and large non-hydropower dams	per dam				100% over 20 years	\$106,025
	Small non-Federal Non-hydropower dams		\$2,120,500	\$2,120,500	20 years	10% over 20 years	\$10,603
Federal Land Management Activities (non-wilderness)	Idaho	per acre	\$1.26	\$1.26	Annual	100%	\$1.26
	Western Oregon & Western Washington		\$5.90	\$5.90			\$5.90

Activity	Sub-activity	Cost Unit	Mid-range Cost Estimate	Present Value of Cost Stream	Forecast Period	Likelihood of Consultation and Modifications	Annual Expected Cost
	Eastern Oregon & Eastern Washington		\$3.30	\$3.30			\$3.30
Federal Land Management Activities (wilderness)	Idaho	per acre	\$0.07	\$0.07	Annual	100%	\$0.07
	Western Oregon & Western Washington		\$0.29	\$0.29			\$0.29
	Eastern Oregon & Eastern Washington		\$0.15	\$0.15			\$0.15
Livestock Grazing on Federal Land	Grazing	Stream miles	\$11,500 + 2% annual maintenance for 30 years	\$14,354	Immediate	100%	\$1,157
Transportation ³	Bridges & culverts (small)	per project & mile	\$27,800 + variable costs	\$42,938	5 years	100% over 5 years	\$8,588
	Bridges & culverts (medium)		\$55,500 + variable costs	\$70,638			\$14,128
	Bridges & culverts (large)		\$84,300 + variable costs	\$99,438			\$19,888
	Roads (small)		\$22,800 + variable costs	\$37,938			\$7,588

Activity	Sub-activity	Cost Unit	Mid-range Cost Estimate	Present Value of Cost Stream	Forecast Period	Likelihood of Consultation and Modifications	Annual Expected Cost
Utility Lines	Roads (medium)		\$47,000 + variable costs	\$62,138			\$12,428
	Roads (large)		\$71,300 + variable costs	\$86,438			\$17,288
	Outfall structures and pipelines	per project	\$101,000	\$101,000	Annual	100%	\$12,625
	Dredging	per project	\$821,000	\$821,000	Annual	100%	\$821,000
	Boat dock, boat ramps, bank stabilization	per project	\$54,500	\$54,500	Annual	100%	\$54,500
EPA NPDES-permitted facilities	Minor facility	per facility	O&M: \$6,800 for 20 years	\$72,039	Immediate	20%	\$1,360
	Major facility	per facility	Capital: \$421,500 O&M: \$19,725 for 20 years	\$630,467	Immediate	25%	\$14,878
Sand and Gravel Mining	Mining on non-Federal lands	per site	\$330,000 for 5 years	\$1,352,106	30 years	50% over 30 years	\$22,535
Residential and Commercial Development	New development	per project	\$235,000	\$235,000	Annual	100%	\$11,750

Activity	Sub-activity	Cost Unit	Mid-range Cost Estimate	Present Value of Cost Stream	Forecast Period	Likelihood of Consultation and Modifications	Annual Expected Cost
Agricultural Pesticide Applications	Agricultural cropping	per acre	\$0 - 6,517, depending on crop type and county		Annual	100%	\$0 - 6,517, depending on crop type and county

¹ Cost estimates in this table are for the case of mid-range costs and a 7% discount rate.

² Data for hydropower dams do not allow us to allocate all costs over an expenditure period. The cost stream presented is the present value of costs.

³ Transportation costs are presented for a project of average mileage (3.2 miles).

Table 37. Estimated Annual Economic Impacts on Small Entities in Upper Willamette River Steelhead ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	400,564	392,293	1,245,593	0	97,538	421,296	90,140	617,826	6,096,951	214,908	726,421	347,770
No. of Small Entities	31	72	257	163	199	66	17	177	148	347	655	395
Small Entities as Percent of Total	100%	95%	96%	97%	96%	88%	86%	87%	95%	96%	77%	88%
Project Costs, Small Entities	400,564	371,033	119,920	0	9,334	372,277	77,524	535,878	5,791,610	207,280	559,741	305,114
Costs per Small Entity (\$)	12,965	5,175	467	0	47	5,633	4,611	3,026	39,005	597	855	772

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 38. Estimated Annual Economic Impacts on Small Entities in Upper Willamette River Chinook by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	7,375,591	487,715	9,036,232	0	170,875	556,131	157,746	581,447	5,822,943	294,631	837,696	299,627
No. of Small Entities	37	77	361	178	227	69	20	200	170	401	766	441
Small Entities as Percent of Total	100%	95%	96%	97%	95%	87%	88%	87%	95%	97%	78%	85%
Project Costs, Small Entities	7,375,591	462,166	868,762	0	16,317	485,127	139,164	504,288	5,554,730	284,621	649,357	255,673
Costs per Small Entity (\$)	200,771	6,008	2,409	0	72	7,022	7,020	2,523	32,703	710	848	580

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 39. Estimated Annual Economic Impacts on Small Entities in Lower Columbia River Steelhead ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	8,125,012	1,240,493	8,371,068	0	1,058,649	277,876	630,983	2,375,314	5,616,666	686,248	503,252	401,057
No. of Small Entities	37	42	189	86	147	58	8	138	114	298	456	220
Small Entities as Percent of Total	100%	93%	94%	99%	95%	92%	69%	88%	96%	96%	79%	84%
Project Costs, Small Entities	8,125,012	1,153,809	790,264	0	100,895	255,182	438,373	2,089,399	5,382,556	657,757	398,957	336,798
Costs per Small Entity (\$)	219,770	27,150	4,191	0	688	4,384	56,174	15,114	47,165	2,205	875	1,533

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 40. Estimated Annual Economic Impacts on Small Entities in Lower Columbia River Chinook Salmon ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	8,110,504	1,282,903	6,898,704	0	1,078,125	277,876	743,658	2,693,254	5,616,666	703,579	558,848	191,936
No. of Small Entities	38	45	215	96	154	60	9	141	120	300	482	225
Small Entities as Percent of Total	100%	93%	94%	99%	95%	92%	72%	88%	96%	96%	80%	84%
Project Costs, Small Entities	8,110,504	1,194,972	651,095	0	102,906	254,491	537,780	2,369,584	5,394,080	674,385	444,497	161,385
Costs per Small Entity (\$)	211,747	26,694	3,030	0	668	4,231	60,044	16,833	45,100	2,246	922	717

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 41. Estimated Annual Economic Impacts on Small Entities in Columbia River Chum Salmon ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	1,579,683	508,920	1,957,271	0	833,584	227,250	338,026	5,668,000	4,860,320	80,764	370,299	61,412
No. of Small Entities	15	8	182	70	114	25	7	64	80	101	242	96
Small Entities as Percent of Total	100%	85%	95%	100%	95%	88%	69%	90%	96%	94%	81%	90%
Project Costs, Small Entities	1,579,683	430,593	185,610	0	79,590	199,301	234,291	5,116,274	4,684,678	75,965	298,279	54,988
Costs per Small Entity (\$)	108,527	56,519	1,019	0	701	8,036	34,592	79,978	58,676	753	1,235	570

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 42. Estimated Annual Economic Impacts on Small Entities in Ozette Lake Sockeye Salmon ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	0	0	0	0	0	0	0	0	0	0	2,720	3
No. of Small Entities	0	0	0	0	0	0	0	0	0	0	0	0
Small Entities as Percent of Total	100%	100%	99%	100%	96%	100%	100%	106%	100%	100%	87%	89%
Project Costs, Small Entities	0	0	0	0	0	0	0	0	0	0	2,375	2
Costs per Small Entity (\$)	0	0	0	0	0	0	0	0	0	0	30,146	223

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 43. Estimated Annual Economic Impacts on Small Entities in Hood Canal Summer-run Chum Salmon ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	525,490	360,484	1,334,769	0	40,917	50,500	112,675	2,806,750	1,436,750	4,610	76,161	6,309
No. of Small Entities	5	8	50	6	18	7	1	22	23	13	68	7
Small Entities as Percent of Total	100%	99%	94%	100%	96%	96%	88%	97%	98%	99%	88%	95%
Project Costs, Small Entities	525,490	356,474	125,840	0	3,947	48,590	99,437	2,731,477	1,410,423	4,551	67,266	5,992
Costs per Small Entity (\$)	108,172	45,961	2,522	0	219	7,368	151,732	125,930	60,348	337	989	800

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 44. Estimated Annual Economic Impacts on Small Entities in Upper Columbia River Spring-run Chinook Salmon ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	63,615	116,628	4,668,056	6,650	32,511	328,376	67,605	4,714,250	3,492,329	0	324,305	429,340
No. of Small Entities	17	40	51	82	55	32	2	40	34	45	130	841
Small Entities as Percent of Total	100%	95%	96%	98%	95%	89%	93%	87%	95%	96%	80%	87%
Project Costs, Small Entities	63,615	110,298	448,837	650	3,074	291,328	62,845	4,101,997	3,331,004	0	259,457	373,625
Costs per Small Entity (\$)	3,803	2,735	8,751	8	56	9,235	29,254	101,721	99,227	0	1,989	445

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 45. Estimated Annual Economic Impacts on Small Entities in Upper Columbia River Steelhead ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	63,615	1,600,978	7,134,003	10,634	66,493	353,626	338,026	5,041,250	3,492,329	4,610	340,625	2,230,379
No. of Small Entities	21	50	66	106	62	38	2	48	36	50	149	990
Small Entities as Percent of Total	100%	95%	95%	98%	95%	90%	93%	89%	96%	97%	80%	87%
Project Costs, Small Entities	63,615	1,519,976	680,554	1,043	6,323	317,139	314,227	4,473,619	3,340,283	4,455	272,480	1,946,180
Costs per Small Entity (\$)	3,096	30,607	10,252	10	102	8,400	146,268	92,499	93,519	89	1,833	1,965

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 46. Estimated Annual Economic Impacts on Small Entities in Middle Columbia River Steelhead ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	3,549,155	2,650,625	16,538,281	275,862	584,657	565,853	383,097	3,831,486	6,257,046	72,722	571,418	3,147,976
No. of Small Entities	30	61	132	264	106	50	6	77	70	72	257	1,211
Small Entities as Percent of Total	100%	95%	94%	96%	97%	85%	87%	89%	98%	96%	73%	84%
Project Costs, Small Entities	3,549,155	2,530,783	1,547,544	26,364	56,440	482,948	332,394	3,417,000	6,107,270	69,717	418,777	2,654,338
Costs per Small Entity (\$)	118,561	41,587	11,725	100	534	9,677	55,191	44,101	86,885	963	1,629	2,192

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 47. Estimated Annual Economic Impacts on Small Entities in Puget Sound Chinook Salmon ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	18,549,482	2,396,164	7,120,102	0	710,473	1,616,000	157,746	30,479,125	8,620,500	189,015	695,427	764,508
No. of Small Entities	32	65	166	62	232	58	16	250	220	531	968	109
Small Entities as Percent of Total	100%	91%	83%	98%	93%	81%	93%	89%	95%	91%	82%	89%
Project Costs, Small Entities	18,549,482	2,168,815	593,326	0	66,180	1,305,851	146,474	26,999,506	8,164,676	172,830	572,033	680,427
Costs per Small Entity (\$)	583,971	33,241	3,564	0	285	22,493	9,241	107,807	37,122	326	591	6,234

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Table 48. Estimated Annual Economic Impacts on Small Entities in Snake River Basin Steelhead ESU by Industry Sector

	Hydroelectric Power Generation ¹	Water Supply and Irrigation Systems	Forestry and Logging	Beef Cattle Ranching and Farming	Highway, Street, and Bridge Construction	Electric Services/ Natural Gas Distribution ¹	Construction Sand and Gravel Mining	Utility Line Construction	Other Heavy and Civil Engineering and Construction	Land Sub- division	NPDES- Permitted Activities	Crop Production
Project Costs, All Entities (\$)	381,690	1,378,325	13,492,384	375,011	348,717	513,585	22,535	5,855,139	5,750,079	158,200	420,455	478,643
No. of Small Entities	15	35	146	225	71	28	4	51	47	47	156	460
Small Entities as Percent of Total	100%	94%	97%	96%	96%	90%	96%	89%	98%	95%	81%	89%
Project Costs, Small Entities	381,690	1,299,250	1,302,033	36,024	33,545	464,295	21,671	5,235,818	5,660,099	149,523	339,967	425,153
Costs per Small Entity (\$)	26,281	37,208	8,930	160	472	16,467	5,303	102,321	119,864	3,184	2,185	925

Note: Cost estimates include all section 7 costs, including those co-extensive with the listing and designation of critical habitat for the ESU. Costs are presented on an annualized basis.

¹ All entities in the Hydroelectric Power Generation and Electric Services sectors are assumed to be small entities. Consequently, the compliance costs for these sectors represent an upper bound estimate. The number of small entities in the hydroelectric power generation and electrical services industries is unknown because of the unavailability of data related to small business thresholds. For both of these industry sectors the SBA defines a firm as “small” if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale, and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours. It was not possible to locate a source that provides this information for all regulated entities within these sectors.

Appendix C: Estimates of the Profits of Small Entities by Industry Sector

The purpose of this appendix is to describe how the analysis estimated the profitability of small businesses to which the rule will apply.

Standardized industry information was used to estimate profit margins for businesses in each sector. The two sources for business profitability information were Risk Management Association's (RMA's) *Annual Statement Studies* and IMPLAN (IMpact analysis for PLANning), an economic input-output database and software package developed by Minnesota IMPLAN Group, Inc.

The *Annual Statement Studies* published by RMA provides an annual set of financial ratio benchmarks for a diverse group of industries. The financial data is standardized across the entire U.S. and is grouped by either sales or asset ranges. This analysis used the sales range figures, as the SBA size standards for most of the industry sectors to which the rule will apply are based on average annual receipts. RMA's profit margins served as an estimate of the average business' annual profitability for each sector.

Technical coefficients provided in IMPLAN were used to estimate the profitability of firms in those sectors for which information was not available from the *Annual Statement Studies*. IMPLAN's technical coefficients are based on national production function data developed by the U.S. Bureau of Economic Analysis in 1997. IMPLAN data provide, among other measures of economic activity, industry output, number of employees, and proprietors' income. In this analysis proprietors' income was divided by the total industry output to estimate profit margins for businesses in each industry sector. The total output and number of employees was also used in developing sales estimates for small businesses in sectors where size was defined based on the number of employees.

Economic information compiled for 18 industry sectors was consolidated to match the 12 industry groupings identified for this analysis. Profit margins were calculated as simple averages. Sales levels were calculated as weighted averages based on sales for each sub-industry and the number of business identified in each sector based on State of Washington data from the 1997 U.S. Census Bureau, Economic Census.