

PORT ORFORD

Socioeconomic Analysis of Fisheries Resources

BUILDING CAPACITY FOR COMMUNITY-BASED RESOURCE MANAGEMENT

Prepared for the Port Orford Ocean Resources Team



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To support the ongoing development of Community-Based Management (CBM) of fisheries resources, Ecotrust has conducted a social and economic analysis of Port Orford, Oregon for the Port Orford Ocean Resources Team (POORT). While fisheries management and policy have primarily focused on biological analysis to support past decision making, the Magnuson-Stevens Act (reauthorized in 1996) emphasized the importance of social and economic analysis to measure the effects on communities and to encourage “sustained participation” in fisheries management. The objectives of this socioeconomic analysis are:

- To collect data regarding economic uses of the ocean and coastal area of Port Orford
- To provide policymakers and investors with information about the social and economic costs and benefits of fisheries management alternatives for Port Orford
- To quantify the social and economic importance of fisheries resources to the local and regional communities, and
- To support fisheries regulators, resource managers, and the private sector in the development of sustainable fisheries management practices

The comprehensive socio-economic analysis of the Port Orford fishery is organized as follows:

Port Profile

Labor Analysis

Geospatial Analysis

Appendix: Geospatial Analysis Methodology

PORT PROFILE

Port Orford, Oregon is a small, coastal community in Southwestern Oregon, situated in Curry County, about 44 miles south of Coos Bay, along the U.S. 101 corridor. Population was 1,153 according to the 2000 U.S. Census. Population growth was 12.5% in the 1990s, which was less than the state average of 20.4% for that decade. Median and per capita income lags behind Oregon and U.S. levels, and the share living below the poverty threshold outpaces the national percentage. Selected demographic characteristics are presented below in Table 1.

Table 1: Demographic profile of Port Orford, Oregon

Population	1,153
Population growth: 1990 – 2000	12.5%
Median household income	\$ 23,289
Per capita income	\$ 16,442
Individuals below poverty level	17.8%
Percentage high school graduate or greater	85.1%
Percentage aged 65 or greater	27.3%

Source: U.S. Census Bureau

Commercial buyers have operated from the Port Orford dock for over a century. The Port was incorporated in 1919. It is estimated that 100 – 150 people (more than 10% of the population) are directly or indirectly involved in the commercial fishing sector (Port of Port Orford). It is distinct among ports in that it is located on an open bay rather than a river channel. There is no bar, so entrance to the Port is direct with the Pacific Ocean, a feature that requires local fishers to cope with often severe weather conditions. The rough seas make moorage in the water unfeasible, so fishing vessels must be hoisted down from dry dock storage directly to the ocean.

For many years, the dock was in disrepair, but in 1996 the Port of Port Orford embarked upon a \$5 million dock rehabilitation project. The dock has been upgraded with new scalloped steel pilings, a paved dock surface, and two vertical pole hoists. The hoists are a relatively unique attribute of the Port, which has one of only two docks in the United States featuring this design. A rock jetty built by the U.S. Army Corps of Engineers in 1968 produces calmer conditions for incoming boats. The resulting accumulation of sand beneath the hoists requires periodic dredging.

The Port can accommodate vessels with a maximum length of 44 feet, maximum width of 15 feet, and maximum weight of 44,000 pounds. Concrete boat parking pads are equipped with water and electrical hookups. The Port has an operating budget of \$340,000, and provides commercial and

recreational services, along with a vessel hoist. The Port employs five, including three part-time crane operators. In addition to more than three dozen commercial and recreational vessels, the Port is home to two wholesale fish buyers, a fish processing plant, a boat charter business, and a snack bar. Gasoline and diesel fuel are available; monthly fuel sales average 7,000 – 8,000 gallons. Commercial moorage fees at the Port are \$200 per month. Launch fees for charter vessels are \$15 per launch. In addition, the Port collects 1% of commercial landings. An economic profile of the Port is presented in Table 2 below.

Table 2: Port of Port Orford – Economic Profile

Commercial vessels	35	Commercial landings, 2004 (pounds)	3,007,577
Charter vessels	3	Commercial landings, 2004 (ex-vessel value)	\$ 4,731,152
Fishermen	87	Commercial hoists, 2004	3,439
Fish buyers	2	Recreational hoists, 2004	486
Port employees (#)	5	Economic contribution – commercial fishing	\$ 5,271,000
Port employees (FTE)	4.0	Economic contribution per capita	\$ 4,571

Source: Port of Port Orford

Commercial fishing represents nearly 90% of Port activity based on vessel hoist data.

Commercial and sport hoists are provided below in Table 3. The economic contribution of commercial fishing in Port Orford (measured in total personal income accruing to residents within the port district) was \$5.3 million in 2004; economic contribution per capita is third highest of ports in the State, after the Port of Newport and the Port of Astoria (OCZMA, 2005).

Table 3: Commercial and sport hoists

Hoists	2004	2003	2002	2001	2000	1999
Commercial	3,439	2,521	3,377	3,465	2,772	3,357
Sport	486	399	427	474	273	428

Source: Port of Port Orford

Total commercial landings in Port Orford in 2004 were over three million pounds, which had an ex-vessel value of \$4.7 million. Annual landing volume declined generally between 1996 and 2003, but 2004 was an exceptionally strong year, due in part to record-high landings of crab and salmon. Average annual landing volume between 1995 and 2004 was 1,873,455 pounds; average landing value during that period was \$2.6 million. Commercial landings were led by crab (67.3% of total) and salmon (10.0% of total). Total commercial landing volume is presented below in Table 4.

Table 4: Commercial landing volume

	2004	2003	2002	2001	2000
Fish					
Cabezon	27,189	24,471	41,666	59,880	31,618
Greenling sp.	28,254	23,506	64,129	39,118	22,650
Hagfish sp.	104,454	4,819	280,301	0	0
Halibut, Pacific	6,375	8,982	14,538	9,928	8,785
Lingcod	26,468	26,178	23,335	27,278	16,856
Rockfish, black	82,685	85,377	96,179	166,694	96,576
Rockfish, blue	5,607	3,328	2,697	6,133	4,013
Rockfish, nearshore	11,724	13,469	26,701	41,700	28,382
Sablefish	308,008	307,008	121,970	253,934	343,888
Salmon, Chinook	150,559	100,088	130,198	105,267	70,470
Tuna, albacore	11,541	25,453	15,409	23,927	6,438
Crustaceans					
Crab, Dungeness	2,070,847	515,699	267,969	286,186	417,532
Other Invertebrates					
Sea urchin, red	152,705	75,033	213,680	342,095	371,282
Other fish & shellfish	91,161	26,029	24,463	61,496	39,421
Total Landings	3,077,577	1,234,621	1,323,235	1,423,636	1,457,911

Source: Oregon Department of Fish and Wildlife

Total ex-vessel value of commercial fishing in Port Orford in 2004 was second in the state among shallow draft ports (after Brookings). Leading ex-vessel values included crab (69.2% of total), salmon (10.2% of total), and sablefish (9.3%). Ex-vessel values are presented below in Table 5.

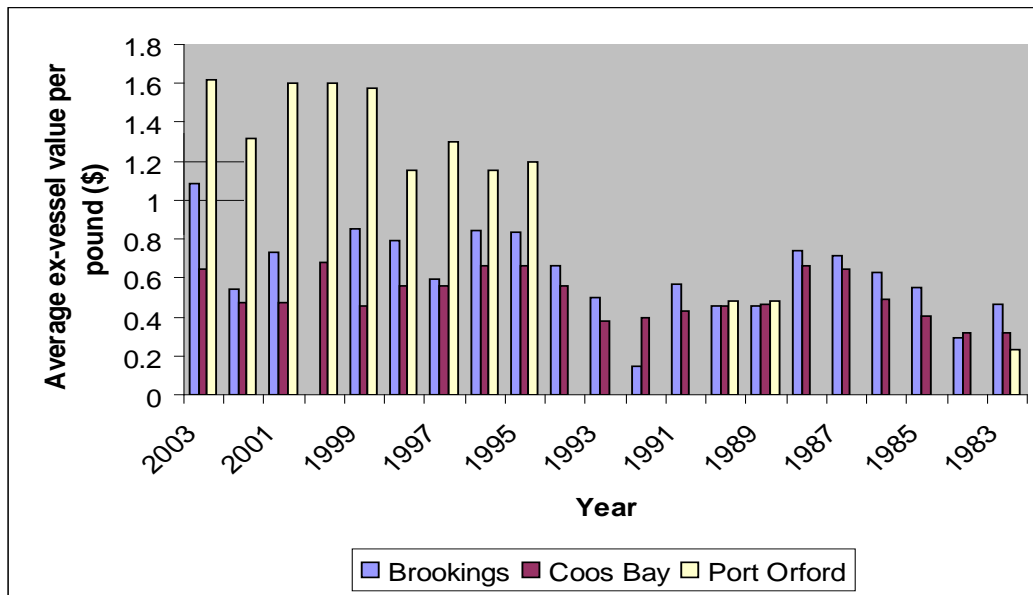
Table 5: Ex-vessel value of commercial landings

	2004	2003	2002	2001	2000
Fish					
Cabezon	\$ 86,770	\$ 79,047	\$ 137,281	\$ 159,355	\$ 81,245
Greenling sp.	117,419	90,903	197,926	137,662	82,105
Hagfish sp.	31,038	672	70,112	0	0
Halibut, Pacific	15,363	19,120	24,077	13,522	17,663
Lingcod	37,707	36,661	37,685	41,535	26,707
Rockfish, black	95,853	72,012	84,611	119,726	81,006
Rockfish, blue	3,574	2,365	2,025	3,954	3,068
Rockfish, nearshore	57,730	67,589	148,941	191,951	119,458
Sablefish	438,930	495,154	196,180	382,466	488,868
Salmon, Chinook	480,970	242,760	196,858	170,565	141,953
Tuna, albacore	7,391	14,858	6,571	15,635	4,083
Crustaceans					
Crab, Dungeness	3,274,286	807,448	475,681	698,513	945,550
Other Invertebrates					
Sea urchin, red	47,774	26,528	103,726	244,812	292,444
Other fish & shellfish	36,347	41,192	56,869	105,671	54,682
Total	\$ 4,731,152	\$ 1,996,309	\$ 1,738,543	\$ 2,285,367	\$ 2,338,832

Source: Oregon Department of Fish and Wildlife

Approximately 71% of vessels at Port Orford are dependent upon the groundfish fishery. Port Orford is located near an extensive nearshore reef complex that has supported a growing live rockfish fishery since 2000 (OCZMA, 2002). Live fish regularly fetch market prices of nearly \$6.00 per pound, usually three to five times the price of dead (fresh) fish. Due in part to the live fishery values, average ex-vessel value per pound of commercially-harvested fish in Port Orford has been significantly higher than in the neighboring ports of Brookings and Coos Bay/Charleston, as illustrated below in Figure 1. Average ex-vessel value per pound between 1995 and 2003 was \$1.39 in Port Orford, as compared to \$0.79 in Brookings and \$0.58 in Coos Bay/Charleston.

Figure 1: Average ex-vessel value per pound for Brookings, Coos Bay/Charleston, and Port Orford, Oregon



Source: NOAA Fisheries.

Port Orford operates a small-vessel fixed-gear fishery that is heavily dependent on groundfish. In the 1990s, Port Orford operators transitioned from a primarily trolling-based fleet to long-line gear. Rockfish permits with nearshore endorsements are the prevalent permit type in Port Orford, followed by permits for crab and salmon. A summary of commercial fishing permits for Port Orford are presented below in Table 6.

Table 6: Commercial fishing permits, Port Orford

Species	Number of permits
Abalone, flat	1
Dungeness crab	28
Groundfish, limited entry	2
Groundfish, limited entry, black cod endorsement (low-tier)	5
Groundfish, limited entry, black cod endorsement (mid-tier)	3
Rockfish (black and blue), nearshore endorsement	33
Rockfish (black and blue)	4
Salmon	27

Source: Hallmark Fisheries, Nor-Cal Seafood

The values of commercial fishing permits depend in part on the species and the length of the vessel. Groundfish permits with black cod endorsements have the greatest value, followed by crab permits. Using these data, the total value of commercial fishing permits in Port Orford is estimated to be \$2,830,600. Approximately 43.7% of permit value is represented by crab permits; 39.4% is represented by groundfish permits with black cod endorsements (low- and mid-tier combined). Average, minimum, and maximum permit values for Port Orford vessels are provided below in Table 7.

Table 7: Commercial fishing permit values, Port Orford

Species	Average	Minimum	Maximum
Abalone, flat	n.a.	n.a.	n.a.
Dungeness crab	\$44,200	\$36,400	\$52,000
Groundfish, limited entry	\$10,000	n.a.	n.a.
Groundfish, limited entry, black cod endorsement (low-tier)	\$100,000	\$90,000	\$100,000
Groundfish, limited entry, black cod endorsement (mid-tier)	\$205,000	\$200,000	\$210,000
Rockfish (black and blue), nearshore endorsement	\$10,000	n.a.	n.a.
Rockfish (black and blue)	\$5,000	n.a.	n.a.
Salmon	\$4,000	\$3,000	\$5,000

Source: www.permitmaster.com

The major fish buyer is Nor-Cal Seafood, which maintains a cold water storage tank to facilitate the marketing of live rockfish. Hallmark Fisheries also operates a buying station at Port Orford, and buys sablefish, salmon, halibut, and crab. Albacore tuna is sold directly off the dock to customers. There is currently no buyer for Pacific eel.

LABOR ANALYSIS

Commercial fishing is a significant economic sector of the community of Port Orford. It is one of the three Oregon communities with the highest percentage of fishing households (along with Charleston and Pacific City). The Port of Port Orford estimates that between 100 and 150 people are directly or indirectly involved with commercial fishing at the Port, of which 87 are fishing crew. Data gathered in a survey of commercial fishermen in April 2005 appears to validate this estimate. Thirty five commercial vessels and three charter vessels moor at the Port year-round. Average crew size per commercial vessel is 2.25 including the captain, and nearly all are local residents who work full-time in the industry. The Port itself employs five, and there are approximately twelve other employees of other marine-related businesses at the dock (such as fish buyers, fish processing, sport charters, and bait). The commercial fishing sector in Port Orford is supported in part by other businesses which offer fabrication, hardware, tools, and supplies, such as H&H Custom Solutions and Coos Curry Supply. Most fish processing for the area takes place in Charleston, which also supplies much of the community's fishing gear, equipment, and tools.

The population of Port Orford includes a greater fraction of retirees and disabled residents than the national average. U.S. Census data for 2000 report that the size of the civilian labor force in Port Orford is 432, or 44.5% of the population. Nearly 30% of the labor force is employed in commercial fishing or marine-related businesses. The unemployment rate of 3.5% in Port Orford is low compared to national rates, but may underestimated depending on how the supply of labor is figured. The Oregon Employment Department reported an unemployment rate of 7.3% for Curry County in 2004. As of April 2005, the County unemployment rate had inched higher to 7.5%. Unemployment has been rising since a low of 6.8% in 2000.

There are 936 Port Orford residents aged 18 years or older; of those, 315 (or 27.3%) are 65 years of age or older, which is more than double the national proportion of 12.4%. There are 223 Port Orford residents aged 21-64 who are listed in disabled status; this represents 35.4% of the population of that age group, which far outpaces the national share of 19.2%. Poverty rates in Port Orford exceed the national average. Census data indicate that 17.8% of individuals in Port Orford live below the poverty threshold, as compared to the national share of 12.4%. More than 20% of those in the labor force are classified as self-employed, reflecting in part the nature of the commercial fishing sector.

GEOSPATIAL ANALYSIS

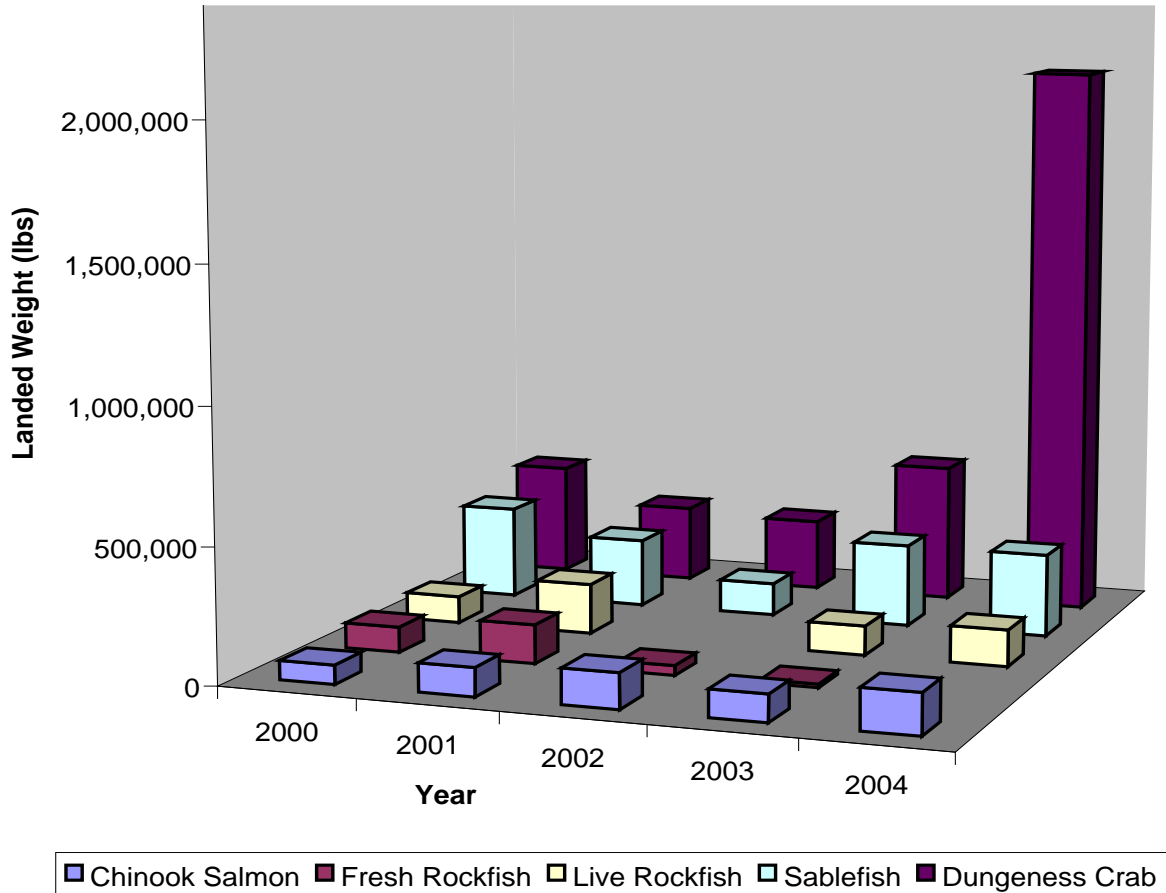
Local fishing knowledge was collected in Port Orford to provide a spatial database of economically significant fishing grounds. As fishery policy progresses from species-specific regulations to ecosystem-based management, geographic information at a finer spatial scale is necessary to inform policy that maintains healthy fish stocks while providing fishing communities with access to productive fishing grounds.

To locate areas of critical or relative economic importance, 19 commercial fishermen from Port Orford were interviewed during the summer of 2003 and follow-up interviews were completed in the spring of 2005. Fishermen were asked to identify their fishing grounds for each fishery by drawing shapes on transparent Mylar film overlaid on nautical charts. They were then asked to identify for each fishery, which of the areas are of relative economic importance, over their cumulative fishing experience, and to rank these areas or shapes using a weighted percentage; this is done through an imaginary “bag of 100 pennies” that they distribute over the fishing grounds.

The data provided by the fishermen and the associated relative economic value (percentage of pennies) were digitized. The resulting shapes from different fishermen participating in the same fishery were overlaid to determine commonly targeted fishing areas and their relative economic significance was summarized. Revenue from landing receipts (PacFIN, 2005) was then allocated to the fishing grounds identified by fishermen according to the summarized weighted value assigned to each area, derived from the pennies exercise. The resulting maps show the estimated average revenue from 1987-2004, for Port Orford landings of Dungeness crab, Sablefish, Salmon, Halibut, live Rockfish, and fresh Rockfish summarized to 3 km blocks, which are presented in Figures 2 through 8. For more detailed methodology, see Appendix: Geospatial Analysis Methodology, adapted from (Scholz, 2005).

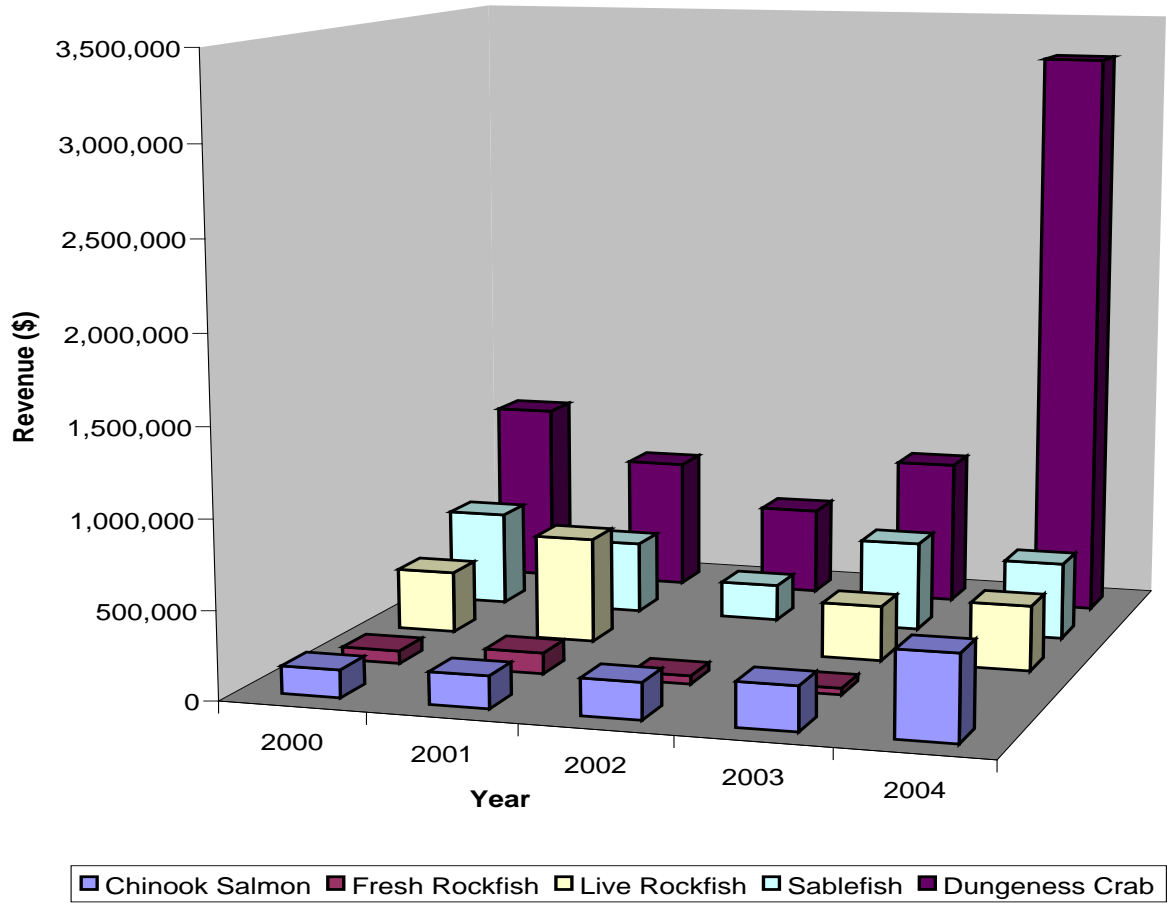
To supplement the maps that show the average revenue over time, Figures 8 and 9 illustrate the fluctuations in catch and revenue between 2000 and 2004. Catch and revenue data were collected from PacFIN and the Oregon Department of Fish and Wildlife.¹

Figure 8: Landed volume of commercial fishing, Port Orford, 2000 – 2004



¹ PacFIN data includes a condition field denoting if fish is sold “dead” or “live,” allowing for the calculation of the total live and fresh rockfish caught. PacFIN data excludes catch and revenue associated with live rockfish in 2002. This omission may be attributed to data confidentiality rules. Fresh rockfish catch and revenue are estimated by taking the annual sum from PacFIN’s “live” groundfish, then deducting sablefish catch and revenue, since Port Orford fishermen consider it a different fishery. In 2004, ODF&W reported a sablefish catch that was higher than PacFIN’s “fresh” groundfish catch, so revenue and catch for fresh rockfish in 2004 is not included in the figures. In addition, PacFIN does not collect landing and revenue data for all fisheries.

Figure 9: Fisheries revenue, Port Orford, 2000 – 2004 (2004 dollars)



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