SINCLAIR INLET OLYMPIA OYSTER RESTORATION PROJECT – OIL SPILL REMEDIATION

Olympia oysters (*Ostrea lurida)* are the only native oyster on the US west coast, and a Species of Greatest Conservation Need and Priority Habitat for WDFW. In September 2025, a diesel fuel spill in Sinclair Inlet affected one of the west coast's largest oyster habitat enhancement projects to date: 15 acres. Monitoring surveys from summer 2025 indicate that in less than 6 years the population took off and was estimated to be at least 1.5 million oysters. The population needs to be assessed for oyster survival. If the oyster bed (or its majority) were to be lost, two approaches are required for remediation: the recovery/restoration/expansion of the original project (approx. $375,000 in 2025 dollars), and a valuation of the ecosystem services lost per acre per year. The table below provides some general estimates based on other oyster species. Quick math suggests the valuation of lost ecosystem services would be at the very least $225,000 ($3000/acre/year for 5 years estimated for population recovery.)

Oyster Ecosystem Service Valuation Summary (USD/acre/yr) – based on *C. virginica* mostly

Service	Metric	Conservative	Typical	High
Filtration / Nutrient Removal	kg N removed/acre/yr $/kg N	$4 – $11	$874 – $2,428	$15,224 – $42,290
Fisheries / Habitat Provisioning	Enhanced nekton biomass → market/recreational value	$390 – $900	$970 – $2,850	$3,000 – $5,000+
Non-use / Biodiversity / Recreation	WTP, recreation, existence & aesthetic values	$1,000 – $2,200	$2,200 – $8,000	$10,000 – $40,000
Aggregate (sum of 1–3)	Combined filtration + fisheries + non-use	~$1,400 – $3,000	~$4,000 – $13,000	$28,000 – $87,000+

References

Coen, L. D., & Luckenbach, M. W. (2000). Developing success criteria and goals for evaluating oyster reef restoration. Ecological Engineering, 15, 323–343.

Dvarskas, A., Bricker, S. B., Wikfors, G. H., Bohorquez, J. J., Dixon, M. S., & Rose, J. M. (2020). Quantification and valuation of nitrogen removal services provided by commercial shellfish aquaculture at the subwatershed scale. *Environmental Science & Technology*, *54*(24), 16156-16165.

Grabowski, J. H. et al. (2012). Economic valuation of ecosystem services provided by oyster reefs. BioScience, 62(10), 900–909.

Kroeger, T. (2012). Dollars and sense: Economic benefits and impacts from two oyster reef restoration projects in the Northern Gulf of Mexico. *The Nature Conservancy*, *101*.

Bruce, D. G., Cornwell, J. C., Harris, L., Ihde, T. F., Kellogg, M. L., Knoche, S., ... & Vogt, B. (2021). A synopsis of research on the ecosystem services provided by large-scale oyster restoration in the Chesapeake Bay. *NOAA Tech. Memo. NMFS-OHC*, *8*, 52.

Peterson, C. H., Grabowski, J. H., & Powers, S. P. (2003). Estimated enhancement of fish production resulting from restoring oyster reef habitat: quantitative valuation. *Marine Ecology Progress Series*, *264*, 249-264.

PDFs/Other docs that may be useful

Economic Valuation of Ecosystem Services Provided by Oyster Reefs | BioScience | Oxford Academic

Frontiers | Growth and Reproduction of the Pacific Oyster Crassostrea gigas Cultured on Tidal Flat in Hebei Spirit Oil Spill Area on the West Coast of Korea Four Years After the Accident

Sublethal Effects of Crude Oil and Chemical Dispersants on Multiple Life History Stages of the Eastern Oyster, Crassostrea virginica

A Review of the Ecosystem Services Provided by the Native Oyster (Ostrea edulis): Implications for Restoration - IOPscience

2000_20USA_20-CS_20USA_20VA__20Hyd_20Phys-libre.pdf

Quantification and Valuation of Nitrogen Removal Services Provided by Commercial Shellfish Aquaculture at the Subwatershed Scale | Environmental Science & Technology

2_Oyster restoration study_Kroeger May 9 2012.pdf