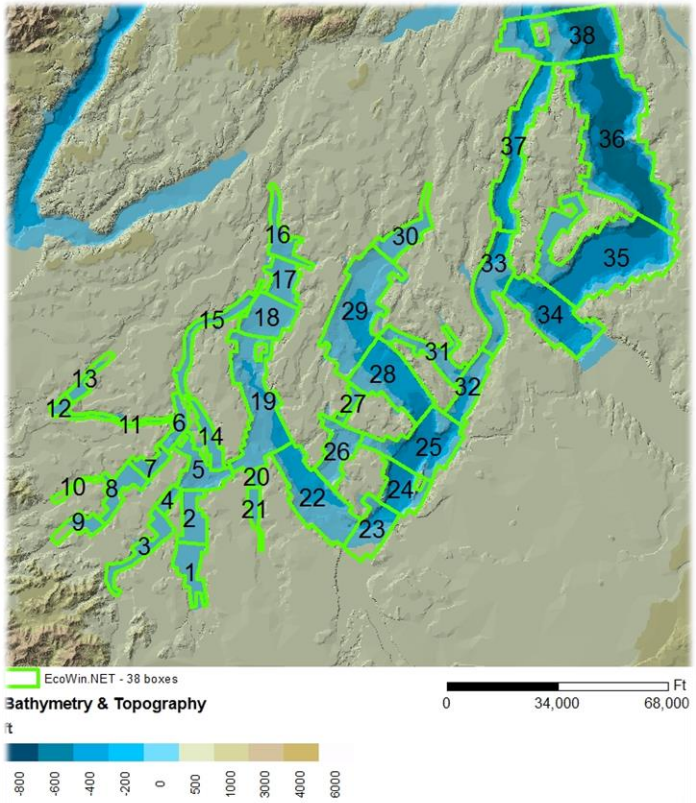
Determining Social and Ecological Carrying Capacity for South Puget Sound

Project Summary: Washington is the nation's leading producer of farmed bivalve shellfish, producing about 40,000 metric tons valued at more than $100 million annually. At the same time, the Puget Sound region is developing rapidly, with an anticipated expansion to a population of 5.3 million by 2025. Friction between shoreline residents and shellfish growers has grown in recent years and assessment of the regional carrying capacity could inform difficult management decisions. The goal of this project is therefore to provide tools and information that assess the ecological and social capacity of south Puget Sound to support shellfish aquaculture.



The EcoWin model boxes for the south Puget Sound region.

Progress: We are using local and regional data, predictive modeling tools and a stakeholder working group to provide recommendations for multi-use spatial planning that includes shellfish aquaculture. Physical, production and ecological carrying capacity are being assessed using Farm Aquaculture Resource Management (FARM) and EcoWin modeling tools. Ecological and social carrying capacity are being assessed using the EcoPath with EcoSim (EwE) modeling framework, in conjunction with a diverse stakeholder working group, and the Assessment of Estuarine Trophic Status (ASSETS) tool.

To date we have compiled farm production records and shellfish species metrics, dozens of biological data sets for key marine species present in south Puget Sound, and detailed water quality and bathymetry metrics for the modeling platforms. Two of three planned stakeholder meetings have been held, with broad participation among south Puget Sound county planners, state natural resource agency staff, tribal natural resource staff, shellfish growers, and conservation NGO staff.

Finally, a public perceptions survey to assess social carrying capacity through values, attitudes, beliefs and behavior in relation to shellfish has been rolled out. Project staff and partners sent a survey probing citizen views regarding shellfish farming and near shore use to residents of three south Puget Sound counties. The survey elicited an unusually high 34 percent response rate. It revealed the general view that shellfish farms "neither enhance nor detract from the scenery of coastal areas" and their "greatest benefit" is "providing locally produced seafood."

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