Eelgrass and Geoduck Aquaculture on the Fisk Bar of Samish Bay

The Fisk Bar in Samish Bay is part of the second largest eelgrass meadow in Puget Sound. It supports a large expanse of eelgrass. Micah Horwith described it as a "lush meadow" of eelgrass in his Sea Grant presentation on the effects of geoduck aquaculture on eelgrass from February 26, 2009, at Alderbrook Resort in Union, Washington.
It is illogical that a perfectly rectangular area the size of a football field in the middle of one of the most productive and expansive eelgrass meadows in Puget Sound would be naturally devoid of eelgrass. Micah Horwith described the site as being used for oyster aquaculture prior to the planting of geoduck. The oyster culture was eventually abandoned because the oysters washed off in the winter.
Below is a link to the entire presentation of both Glenn Van Blaricom's and Micah Horwith's presentation. Horwith's presentation begins at the 49:25 minute mark. Horwith describes the previous oyster culture at the 51:45 minute mark of the video.

http://www.wsg.washington.edu/research/geoduck/index.html

The reason the area of the study was devoid of eelgrass prior to geoduck planting is due to the previous oyster aquaculture activities at the site. The re-colonized eelgrass within the geoduck farm is degraded because of the aquaculture activities within the area; not because the area is normally marginal for eelgrass, but clearly some patchy areas of eelgrass were able to temporarily re-establish in the geoduck farm site at Samish Bay according to the Horwith study.

http://www.wsg.washington.edu/research/pdfs/seminars/Horwith_SoundScience_022609.pdf

As the map of the Fisk Bar shows on page 5, there are some patchy areas of eelgrass within the confines of the geoduck farmed area: a rectangle of 140 meters by 40 meters in size. The Horwith study mentions that there was no eelgrass within the confines of the farm prior to the planting of geoduck. This is because of the oyster aquaculture that had occurred there before as explained in the video presentation. The farmed plot in question was devoid of eelgrass due to destruction from another form of shellfish aquaculture, and was not otherwise naturally vacant of eelgrass.

In the six years after the planting of geoducks, eelgrass had partly re-colonized the farmed area in patches. According to the study, after geoduck harvest the farmed zone eelgrass was significantly less dense than eelgrass outside the farmed zone (page 12). The study shows that the shoot size of eelgrass is significantly smaller in the farmed zone both before and after harvest (page 14), and that there was a significantly lower rate of flowering within the farmed zone after harvest (page 16). Also, and perhaps more importantly, after geoduck harvest the farmed zone had significantly lower sediment organics, which is an important food source for infauna (page 18).

The study suggests that eelgrass can partially re-colonize an area of geoduck aquaculture after planting, however, this re-colonized eelgrass is significantly depressed compared to the eelgrass outside of the geoduck farmed area, and that the density of this inferior re-colonized eelgrass is significantly reduced even further after geoduck harvest. In other words: (1) eelgrass that might partially develop or re-develop inside the confines of a geoduck farm are developmentally depressed and are of significantly lower quantity and quality, and: (2) hydraulic geoduck harvest techniques then subsequently kills most of the sub-par eelgrass that had partially developed during grow out.

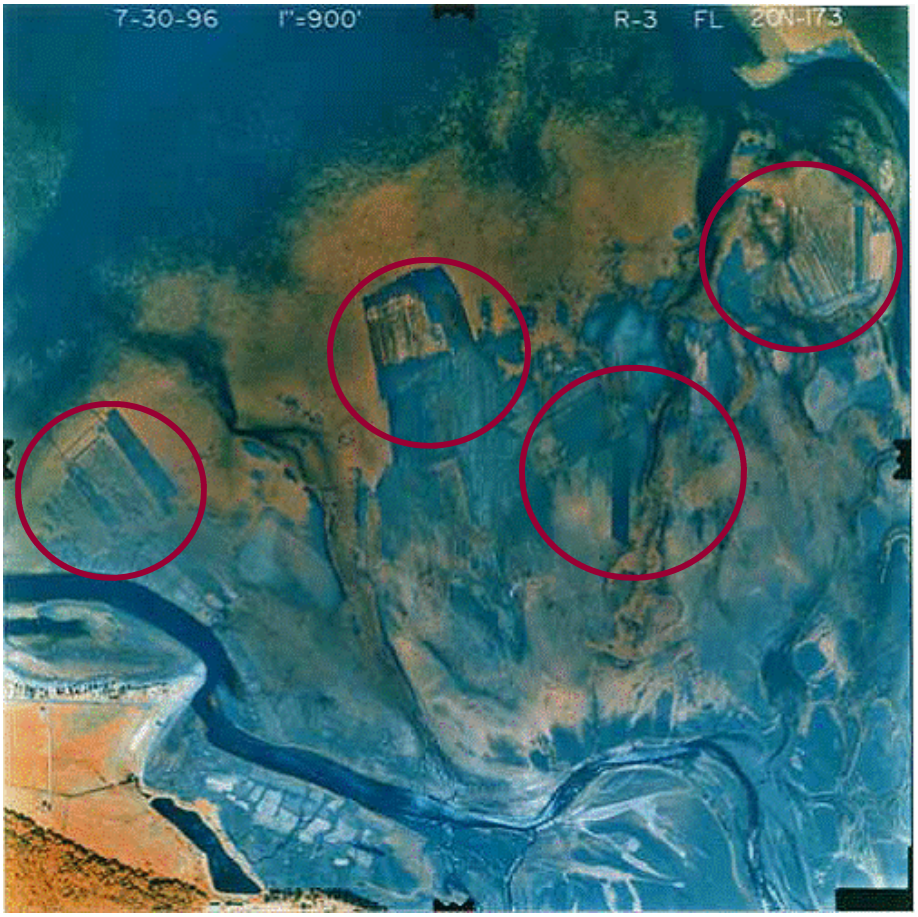
The study DOES NOT suggest that geoduck farms encourage eelgrass development where eelgrass has not existed before, nor does the study suggest that geoduck aquaculture is a benefit to eelgrass.

Dr. Jennifer Ruesink's study from Taylor's site in North Bay, Case Inlet, postulated that eelgrass density was depressed by space competition with planted geoducks, and that after harvest, eelgrass density was reduced by 70 percent. Ruesink suggested keeping geoduck farms out of, and away from eelgrass.

http://www.digitalwell.washington.edu/dwproddpt/1/58/6a/6a0cb005-46ea-45f0-aa3c-7f191159eedb.wmv

Glenn Van Blaricom's study suggests that the geoduck grow out phase and geoduck harvest has virtually the same adverse affects on sand dollars that it has on eelgrass. It results in less density, lower population and smaller size.

http://www.wsg.washington.edu/research/pdfs/seminars/VanBlaricom_SoundScience_022609.pdf



Shellfish aquaculture in eelgrass beds, Samish Bay.
Washington State DNR aerial infrared photograph, 1996.