

# *Drakes Bay Oyster Company*

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March 4, 2011

Natalie Gates  
DBOC SUP EIS

Re: New cultured species request

Dear Natalie,

On January 26, 2011 Cicely Muldoon requested additional scoping information about the native Olympia oysters and the native Purple Hinged Rock Scallops. DBOC has been given a deadline of March 4, 2011 to provide all additional scoping information. This letter will provide additional information regarding native shellfish culture in Drakes Estero.

The NPS has already been provided significant information regarding the request to culture native species. Some background regarding this request is necessary. DBOC, following procedures set forth in its special use permit, initiated the process to add native species to its State Fish and Game lease.

Section 4(b)(vi) of the DBOC SUP says, in full:

“Permittee will not introduce species of shellfish beyond those described in the existing leases from the CDFG. **Permittee may seek to conform and/or modify these leases with the CDFG. Any modifications approved by CDFG will be considered by Permitter on a case-by-case basis**, and Permittee may not implement any such modifications without the prior written approval of the Permitter.” (emphasis added)

Pursuant to this section, DBOC sought to modify the lease with CDFG, understanding that NPS approval would be required before implementation of such modification. On April 27, 2010, before the DBOC SUP EIS was contemplated, DBOC made a request (attachment a) to the California Fish and Game Commission. On June 28, 2010, the NPS wrote a letter (attachment b) to Jim McCamman, Director, California Department of Fish and Game, opposing the DBOC request. Based on this letter, Fish and Game removed the request from the Fish and Game Commission agenda. DBOC received a copy of the NPS June 28 letter on July 15, 2010.

DBOC sent a letter (attachment c) to NPS on July 22, 2010 to clarify our understanding of the process. NPS did not respond to our July 22 letter.

As a courtesy, CDFG arranged to meet with NPS. CDFG met with NPS staff and provided documents so that NPS could be fully informed. When CDFG and DBOC were confident that NPS had all necessary information, the matter was put back on the FGC agenda for the February 3, 2011 meeting. As a surprise to all, NPS wrote another letter (attachment d) dated January 26, 2011, this time to the Fish and Game Commission. This letter used different reasons to oppose the State process. In this letter, the NPS incorrectly claimed that NPS had not been provided information from CDFG. It also suggested that the FGC should require DBOC to abide by a certain portion of its SUP. DBOC is required to abide by the terms and conditions of the SUP as well as many other agencies' permits and licenses. It is not necessary to ask a state agency to enforce this single provision of the SUP and it is unclear why the NPS would suggest they should. DBOC is correctly following the provisions set forth in the SUP. Once again, due to the NPS opposition, the FGC failed to act on DBOC's request.

John McCamman arranged a meeting with CDFG, NPS and DBOC on March 1, 2011 to help resolve the issue. CDFG postponed the meeting and the meeting is to be rescheduled.

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DBOC has hoped to add native species to its State water bottom lease for several years. There are a number of reasons that have contributed to our desire to add these natives.

We have been members of Slow Food International for many years. Nancy and I traveled to Italy in 2006 to attend Terra Madre, a week-long Slow Food conference. We were intrigued by the focus not only on local food, but also on traditional, regional foods. We immediately recognized that our hope to restore Olympia oysters and Purple Hinged Rock Scallops as a local food supply was on the right track. Since then, we have become involved in a program named: Regionally Appropriate Food Traditions (RAFT) (for information, visit: [http://www.slowfoodusa.org/index.php/programs/raft\\_detail/why\\_raft/](http://www.slowfoodusa.org/index.php/programs/raft_detail/why_raft/)). Since the Pacific oyster was introduced to the West Coast, the Olympia oyster, a traditional food for our community, is all but lost. The fabulous Purple Hinged Rock Scallop, another local, traditional food, is not cultured anywhere in California. For these reasons, we have been studying and researching these two species for five years with the hope of replacing some of our non-native Pacific oyster culture with these native species.

#### Native Olympia oysters

Olympia oysters are indigenous to Drakes Estero. This is evidenced by the Native American shell middens surrounding Drakes Estero that contain Olympia oyster shells. This fact tells us that Drakes Estero has been providing Olympia oysters for human food for centuries, and perhaps millennia. The presence of native Olympia oysters in Drakes Estero is also confirmed by California Department of Fish and Game (CDFG) harvest records (attachment e). Native Oysters were harvested from Drakes Estero in large numbers in the 1950's and the 1960's by both Coast Oyster Company and Johnson Oyster Company. Native Olympia oysters still exist in Drakes Estero, but in much lower numbers than they had in the past. This story of early shellfish harvesters removing Olympia oysters and the incomplete Olympia oyster recovery is shared with many West Coast bays and estuaries.

We hope to restore native oyster culture for reasons that are more important than tradition. The Olympia oyster may play an important role in the future of west coast shellfish aquaculture.

Olympia oysters may play a vital role on the West Coast as Ocean Acidification (OA) worsens. OA is caused by the burning of fossil fuel and the resultant emission of carbon dioxide into the atmosphere. Atmospheric CO<sub>2</sub> is being absorbed by the earth's oceans and the consequential chemical reaction is causing a decrease in ocean pH. As the concentration of anthropogenic atmospheric CO<sub>2</sub> increases, ocean Ph is dropping. Most of the low pH seawater is found in the deepest parts of our oceans. In the Pacific Ocean, acidified water is the deep water California current that is traveling northward off the continental Pacific Coast. As OA is affecting marine invertebrates world wide, including oysters, it is a more imminent threat to the US Pacific Coast than most other parts of the world. Ocean upwelling, as occurs in California, is rare around the world. It is caused by the combination of prevailing winds and the earth's rotation that pushes surface ocean water away from the mainland. This phenomenon causes the cool, nutrient rich water from the deeper parts of the ocean to rise to the surface to replace the surface water. The nutrient rich water provided from upwelling has been widely recognized as the primary reason the West Coast of the United States is one of the most productive coastal ocean regions of the world. Unfortunately, upwelling is now also delivering low pH water along with the nutrients. This corrosive water will affect the future of our coastal ocean. Importantly, it affects calcification – the process shellfish use to create their shells.

I am a member of the West Coast Ocean Acidification Workgroup. The workgroup is comprised of physical oceanographers, biological oceanographers, chemists, biologists as well as certain individuals whose daily work involves the ocean and whose futures depend on their understanding and adapting to changing ocean conditions. This group is working in cooperation with all West Coast ocean observing systems as well as the National Oceanic and Atmospheric Administration (NOAA) in Washington DC, which is coordinating a world wide effort to understand OA. It is a fact that ocean water will continue to become more acidified and amazing research is underway in order to understand what effects OA will have as this frightening trend continues.

How do Olympia oysters fit in? Olympia oysters evolved in our region where upwelling occurs. Although deep ocean water delivered by upwelling has always exhibited lower pH, it is now exacerbated by OA. In the early part of the 20<sup>th</sup> century, oyster farmers throughout this region gave up on the small, slow growing native Olympia oyster and began to culture the Japanese Pacific oyster. The Pacific oyster, which is now the predominant West Coast cultured oyster, evolved over time in a region where upwelling did not occur. That is, they did not adapt to lower pH water in their natural habitat.

Pacific oyster hatcheries in the Pacific Northwest have experienced catastrophic larval mortalities in the past few years, causing a very serious oyster seed shortage on the Pacific Coast. These mortality events correlate with upwelling events causing a rapid change in ocean pH. A huge effort is underway to retool hatcheries with more sophisticated ocean chemistry monitoring equipment and new processes to work with these events. During the 2010 planting season in Drakes Estero, DBOC experienced two separate mortality events which resulted in the loss of approximately 60,000,000 Pacific oyster larvae, a significant percentage of the year's overall planting. Both of these mortality events occurred during upwelling events. DBOC does not have the expensive ocean chemistry monitoring equipment to help understand or predict such threats. What will happen to the Pacific oyster when our oceans become more acidic?

Because of their evolution, Olympia oysters may be more resilient to acidified ocean water than the non-native species. DBOC hopes to participate directly with this important research. To do so, DBOC must obtain permission from CDFG and NPS to grow and harvest this species. CDFG has already recommended to the Fish & Game Commission to approve the DBOC request. For the first time in the nearly 50 years since PRNS was established, NPS has asserted new authority which requires that the oyster farmer, operating pursuant to a California Fish and Game lease, must also obtain NPS approval for any State lease amendment. Because of this duplicative authority, even though these new NPS conditions are contradictory to the conditions of the long-standing Fish & Game lease, DBOC now also needs NPS approval to proceed. From there, DBOC will make necessary changes to its hatchery (the only on-farm seed setting hatchery in California) to enable spawning the native oyster on-farm, collecting swimming larvae, setting larvae and planting within the Drakes Estero shellfish lease. DBOC also plans to use its diverse culturing methods to determine the most successful culture methods for the native oyster.

The DBOC plan to grow native oysters is not new. DBOC has been working with CDFG, NOAA, Ocean Trust, Sea Grant, scientists, shellfish growers and universities for years. DBOC has invested a significant amount of time and money to evaluate the environmental benefits as well as the financial risk involved. For example, a feasibility analysis was conducted by four Master's candidates at UC Santa Barbara. Their joint thesis (attachment f) evaluated Drakes Estero and DBOC in comparison to other locations in California as a site to begin culturing native Olympia oysters. This EIS must evaluate the fact that their findings support native Olympia oyster culture in Drakes Estero over anywhere else in California.

### Purple Hinged Rock Scallops

Purple Hinged Rock Scallops are indigenous to Drakes Estero. These scallops are an approved species for culture on one of the DBOC shellfish leases. DBOC is simply requesting to have the same species added to the larger lease. The larger lease will offer more variation in the marine environment to experiment with the scallops. Scallops are more sensitive to environmental variations, including salinity, than oysters. Similar to the native oysters, no new area or culturing methods will be used and the natives will simply replace existing Pacific oyster culture. No expansion of use will result from adding scallops to the main lease. DBOC will simply be diversifying cultured species.

Purple Hinged Rock Scallops, our only native scallops, are not currently cultured anywhere in California. These scallops require near perfect water quality with consistent salinity. Most of these scallops are found near shore in open ocean marine environments. It is unusual to find these rock scallops in West Coast estuaries because of the considerable swings in salinity due to storm water runoff draining into rivers and streams which ultimately end up in estuaries. Drakes Estero offers a unique opportunity to culture this traditional food, because its watershed is very small and has little freshwater inputs. The Estero also flushes most of its water into the ocean and replaces it with every tide. Because of these rare qualities, Drakes Estero is actually considered an embayment, not an estuary. Also because of these rare qualities, the rock scallops thrive and our coastal community may once again have the opportunity to return this large native scallop back into its diet.

Similar to the native oysters, DBOC has been planning for years to re-establish the native scallop production in Drakes Estero. DBOC has been studying this species and recognizes the challenges in producing scallop seed and rearing scallops. Hatchery techniques are less established for scallops than they are for oysters. Currently, DBOC is working with Sea Grant on a Purple Hinged Rock Scallop hatchery techniques grant (attachment g). This grant proposal is in draft

form and is confidential. If approved, DBOC plans to participate in this three to four year project that will ultimately provide the necessary training for DBOC staff to perform all hatchery operations on-farm. This species takes approximately four years to reach market size (approximately 1 pound). This is a long term project that will require significant research, training and investment. DBOC is looking forward to getting started.

DBOC and Drakes Estero are uniquely suited for both native Olympia oyster and native Purple Hinged Rock Scallop production. DBOC has been working on the native species project for several years and has determined that replacing some of the Pacific oyster culture with native species culture is in the best interests of the natural environment, the local community, the scientific community, the seashore visitors and the overall human environment. After a several year long analysis of native species culture in Drakes Estero, based on DBOC's plan to use brood stock from Drakes Estero, no adverse environmental effects have been identified by CDFG or any other agency. Following this research, DBOC has requested that both of these species be added to DBOC's main lease (these species are already approved on other State leases). CDFG has already recommended that the Fish and Game Commission approve the request. DBOC now needs NPS approval.

DBOC is anticipating working with other agencies, including NPS, to develop with, and partner in, new research projects and best practices for culturing these native species. The EIS must consider the uniqueness of Drakes Estero for its value as a research center for ocean acidification, a location to develop native oyster production techniques that could be shared with the entire Pacific Coast, a location for the only native rock scallop farm on the Pacific coast, and as a destination for the visiting public to enjoy and become educated about these benefits.

Sincerely,

Kevin & Nancy Lunny