



NATIONAL  
FISHERIES  
INSTITUTE

Thomas Isles  
Suffolk County Department of Planning  
P.O. Box 6100  
Hauppauge, NY 11788

Dear Mr. Isles:

I represent NFI, the National Fisheries Institute, the nation's largest trade association representing all segments of the seafood industry. As co-chair of the NFI's Molluscan Shellfish Institute, I am here to offer NFI's comments to ALPAC. The Molluscan Shellfish Institute is the national umbrella organization whose members are the major shellfish grower groups from the East Coast, West Coast and Gulf.

Jacques Cousteau, the famous underwater explorer, once said "With earth's burgeoning human populations to feed, we must turn to the sea with new understanding and new technology. We need to farm it as we farm the land."

Aquaculture is a means of producing healthy, affordable, and quality seafood for all consumers. Sustainability is essential for farmed seafood, as well as our wild capture fisheries. Our US fisheries are generally managed in a sustainable manner, however, ocean fisheries cannot produce the increased harvests needed to satisfy our nation's rising demand for seafood. According to the United Nations, global consumption of seafood will exceed 180 million tons in the near future. By comparison, we can harvest only 100 million tons from the wild. Where will we grow the other 80 million tons?

Aquaculture is required to meet greater demand for seafood products and offers new and alternative employment opportunities for American workers. In the case of the "Suffolk County Aquaculture Lease Program", you have a unique opportunity to create jobs, real jobs.

Shellfish aquaculture can co-exist alongside of other responsible stake holders. Prior to the North Fork's emergence as a prominent wine producing region and long before the LIE terminated in Riverhead further opening up the East End, the Peconic Bay system was a producer of shellfish, employing many.

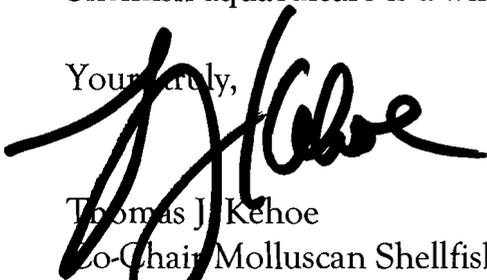
You will hear at your hearings from a few alarmists ringing their bells, trying to put fear in your minds and hearts about damage to the eco-system, gear conflicts and a multitude of other issues. The truth is that shellfish aquaculture is eco-friendly, cleans the water column and will provide ecological benefits that we all need.

Shellfish aquaculture is a growth industry. Shellfish growers have and continue to demonstrate themselves to be responsible stewards of our resources.

We, those who make public policy, must move forward and lay a framework for our children and grandchildren, a framework that will open up our resources to a beneficial co-existence among all of the stakeholders.

Shellfish aquaculture is a win-win for all of Suffolk County.

Your truly,



Thomas J. Kehoe

Co-Chair Molluscan Shellfish Institute - NFI

President, K & B Seafood

Board Member - National Fisheries Institute

East Coast Shellfish Growers Association

Member -

Pacific Coast Shellfish Growers Association

East End Marine Farmers Association

NOANK Aquaculture Co-operative

**East End Marine Farmers Association**  
PO Box 193  
Orient, New York 11957

Statement for East End Marine Farmers Association  
Presented to the Suffolk County Aquaculture Leasing Program Advisory Committee

The East End Marine Farmers Association is a shellfish growers association made up of some of the largest and smallest shellfish farming operations in New York. We have worked very diligently with our State and County legislators to bring forth the possibility of leasing underwater lands in the Peconics, to grow our businesses and provide opportunity for those wishing to enter the business.

The reality of shellfish aquaculture is that the practice is recognized as sustainable and has proven environmental benefits. **Shellfish aquaculture improves water quality.** Because the shellfish are filter feeders they remove particles from the water including plankton and silt as well as bacteria and viruses. It has been shown that the sustainable harvest of shellfish removes nutrients from the water column. Environmental Defense notes: *“One type of aquaculture - mollusk farming – actually reduces nutrient pollution... Because 35-40% of the total organic matter ingested by a mollusk is used for growth and permanently removed by harvest of the mollusk.”*

**Cultured shellfish and the gear used to protect them from predators provide habitat** for millions of juvenile fish, crabs and lobsters that seek refuge in the nooks and crannies while feeding off the fouling that grows on the gear.

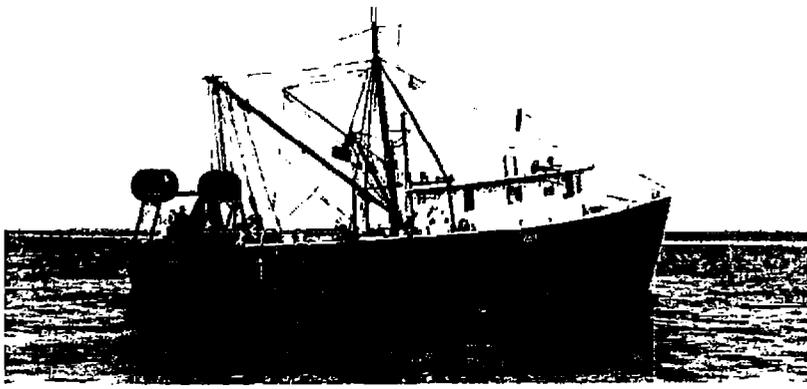
**Shellfish aquaculture will provide jobs and economic development** and help preserve a working waterfront that is an essential part of the tourism appeal of the Peconics. Over 90 percent of the shellfish farms on the east coast are small family farms, run by owner-operators whose livelihood depends on maintaining good water quality and affordable waterfront access. The economic multiplier (amount money is cycled through the economy) for shellfish farming is quite high, 2.5 – 4.0. Money generated by shellfish farming generally remains in the local community in the form of equipment and supply purchases to sales of shellfish in restaurants.

The opportunities for establishing shellfish farms in New York are limited. Many growers do business in other neighboring states to insure that their investment in gear and animals under cultivation is not jeopardized by loss of access to growing areas. We are thankful that the County of Suffolk is pursuing this leasing program. We are not looking to displace other stakeholders, but to provide an opportunity for our industry. There is plenty of room for both.

The EEMFA is also a member of the East Coast Shellfish Growers Association. A letter from that organization has been submitted as a written statement, with 45 references listing the benefits of shellfish farming. The members of the EEMFA ask that you review that letter as well.

Thank you





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*Shellfish Aquaculture Lease Program*

11/31/07

County of Suffolk  
Dept of Planning  
Aquaculture Lease Program  
Thomas Isles director

Dear Mr Isles,

I oppose leasing of any public bottom land which is currently and or has been historically used by commercial fishermen in Peconic or Gardner's Bays. The following fisheries and gear types are currently used.

Fin fish (draggers, gillnets, pots, traps, rod+reel)

Shellfish (rakes, dredges)

conch (pots, draggers)

Lobster (pots, draggers)

Nearly 100% of Gardner's Bay is now and has been used by commercial fishermen from Southold Town, Shelter Island, EAST Hampton Town, Southampton Town and Riverhead Town, for the harvest of fin fish, shellfish, conch and lobster.

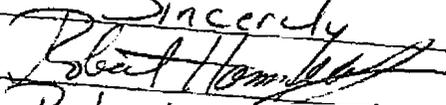
The Peconic Bay system is used by conch and shellfisherman and has several aquaculture business. Large areas in the Peconic Bay System have been very productive shellfish beds for clams and bay scallops.

Before any decisions are made about leasing

Programs or areas, I suggest that local commercial fishermen and towns Bayman's Associations, aquaculture operators, Cornell CO-OP and for-hire (Charter + open boat) fishing organizations be contacted for their assistance in geographic mapping, marine resource analysis and identification of potential aquaculture locations.

Your letter announcing this meeting, was the first notice I received of this program. How was "A request for proposals solicitation process completed in 2006" without notice to local interests?

In the future, I request that all correspondence and review material be sent in a timely manner so the public has time to respond before deadlines have passed. comment

Sincerely  
  
Robert Hamilton Jr

Southold Town Bayman's Assn past pres

Mid-Atlantic Fishery Council 1994-2000

Seafood Harvesters Assn past pres

LI Commercial Fisherman's Assn past v.p.

**North Shore Baymen's Association (NSBA) comments to the**

**Suffolk County  
Aquaculture Lease Program Advisory Committee  
January 31<sup>st</sup> 2007**

by Robert M. Wemyss, Secretary, NSBA

The County of Suffolk is bound by the authorizing statute to designate the aquaculture zones in advance of leasing underwater land. These zones must be designated in areas that produce the least amount of conflict. The designation must be final so that the public may know that these specific areas will be the only areas subject to leasing.

Terms and conditions must be written to protect the public's interest. It must be clear that these are no simple landlord tenant relationships. A lessee that fails to comply with the terms of his or her leases must be terminated, these are contracts that appropriate public land for private purpose:

*The rule of construction in the case of such a grant from the sovereign is quite different from that which governs private grants. The familiar rule and its chief foundation were felicitously expressed by Sir William Scott: "All grants of the crown are to be strictly construed against the grantee, contrary to the usual policy of the law in the consideration of grants, and upon this just ground: that, the prerogatives and rights and emoluments of the crown being conferred upon it for great purposes, and for the public use, it shall not be intended that such prerogatives, rights, and emoluments are diminished by any grant, beyond what such grant, by necessary and unavoidable construction, shall take away." SHIVELY v. BOWLBY,*

(152 U.S. 1)

The State, County and Towns have all failed to protect the public interest with regard to the leasing and granting of underwater land around Long Island. Lawyers for these government entities have failed repeatedly to make the public trust arguments necessary to apply the **strict construction** doctrine to leases and grants of underwater land. The State and the County have failed to enforce the law instead allowing oyster grants to be used for illegal purpose they wove this tangled web.

**Let the language be clear, tell us exactly what you propose and where you propose it.**

## **Egalitarian Concerns**

To understand this conflict one must look back at events which surround the 1914-15 oyster lands case (Suffolk County v. Edwards) in his decision Judge Kelby J, stated that:

*there has always been a natural abundance of other shellfish such as clams and scallops, ... the law of 1884, if considered as a grant, is to be construed strictly in favor of the state, and that it was explicitly "for the purpose of oyster culture" alone. The fundamental fallacy, however, underlying the entire contention [the contention that a proprietary interest in underwater land was had by these grant for oyster culture] is that it overlooks the clear distinction between grants of private property for private purposes and cessions of public properties for governmental purposes. To these lands under water the right and title of the state was sovereign and not proprietary. The state held the title of the people for the common benefit and to promote the public convenience and enjoyment of the natural beds. (Suffolk County v Edwards, 148 N.Y.S. 305, 86 Misc. Rep. 283)*

This case was the culmination of a long running controversy over the manner in which the Suffolk County Shellfish Commissioners granted underwater land. The catalyst for the controversy was the baymen's repeated complaints that the commissioners were illegally granting naturally productive shellfish grounds to oyster planters. The shellfish commissioners left office never to sit again after the court found that they had illegally granted productive shellfish beds.

The present controversy is over illegal resurrection of tax delinquent, abandoned and unused oyster lands and the illegal hydraulic hard clam dredging conducted on those lands. Our primary contention is that these *oyster land* grants were illegal enclosures of natural shellfish beds. It is important to note that in the Edwards case the defense claimed these were private grants and that the owners had a right to the natural scallops, mussels and clams, the court rejected these assertions. In any event the court decided that the oyster lands can only be used for oyster cultivation and the state and the county lack the authority allow any other use.

The settled law in New York's state waters is that only unproductive areas can be considered for cultivation and that only legally planted shellfish can be protected as property. The acts of various governmental authorities that have been in charge of evaluating land for cultivation use speak for themselves. I do not ask anyone to adopt my conclusions but rather if some one is interested in the truth that they examine the instruments of appropriation; deeds, leases and assignments as I have done and look at the habitat they enclose. A review of initial transfers and subsequent transfers shows that these were sophisticated schemes perpetrated in secret. The truth is the owners of a few companies consolidated control of the overwhelming majority of these underwater lands with the assistance of crooked politicians and officials. My conclusion is that the oyster land grants were clearly intended to enclose productive shellfish beds..

The problem with past appropriations of public land for aquaculture on Long Island is that each of the various schemes for appropriation ended up with large companies controlling vast tracts of productive natural shellfish habitat. The schemes all seem to start out the same way offering small plots; in Islip it was 2 acres, in Huntington 10 acres, in Gardiner's and Peconic 4 acres, then 25 acres. They all promise to reserving natural beds for the public use but end up appropriating them.

We are faced with a situation where natural hard clams are being hydraulically dredged illegally from *oyster lands*. Baymen and the public are asked to believe that a new leasing scheme will be different from the schemes of past.

It would be ignorant in the face of experience to assume:

- a) That this won't be just another habitat grab.
- b) That the terms and conditions agreed upon will be enforced.
- c) That baymen won't be subjected to one-sided enforcement.
- d) That it won't be another deal to allow enclosure of natural beds or justify hydraulic dredging of natural shellfish under the cover of aquaculture.

### **Hydraulic Dredging**

The committee report makes several statements about the impacts or lack of impacts of hydraulic dredging which are misleading and gratuitous:

- 1) *"The evidence from scientific assessments of the relative environmental impacts of hydraulic vs. "dry" (mechanical) dredges did not reveal that the impacts of hydraulic dredging were any more severe or persistent than those created by dry dredges. On the contrary, evidence was presented to the committee that rate of shell breakage and damage in hand harvesting operations of soft-shell clams was higher than with either hydraulic or dry dredges." (PBAAC committee's report)*

This conglomerate of conclusions does not seem to reflect a careful review of the current available science on the subject of mobile fishing gear impacts. Comparing dry dredging to hydraulic dredging or soft clam harvest breakage rates between gear types is not valid. The breakage rate for hard clams is actually much higher with mechanical gear than with hand rakes, but it is in any event an irrelevant and gratuitous inclusion.

Instead it seems to be a selective sampling to whitewash the use of hydraulic dredges in Gardiner's and Peconic Bays. The committee avoids the issue of wholesale resuspension associated with hydraulic dredging.

*"The immediate effects of suction dredging are, not surprisingly, quite severe, as the entire upper layers of the substratum and fauna are removed. In some fisheries, bivalves are collected by hand or mechanized raking. As yet unpublished data (Kaiser, Broad and Hall) suggests that the composition of benthic fauna within hand-raked plots recovers within 54 days of initial disturbance. Unlike suction-dredging techniques, hand-raking leaves the sediment in situ and does not affect all the animals within the path of the rake."*

(Environmental Impacts of Bivalve Mariculture M.J. Kaiser, I. Laing, S.D. Utting and G.M. Burnell)

Another disturbing thing is that in comparing soft clam harvest to hard clam harvest the committee reports fails to identify the fundamental differences in habitat of these two species. Soft clams inhabit *high energy* shallow waters typically littoral and sublittoral flats, which are characterized by their shifting nature. The organisms in these areas are adapted to this environment and are highly tolerant of the natural disturbances. Hard clams on the other hand inhabit *low energy* sub-tidal areas that are by their nature subject to much less natural disturbance. The deeper areas, which make up a large portion of the productive natural hard clam habitat in Gardiner's and Peconic Bays, are *low energy* areas not subject to the upheaval of soft clam areas. Scouring by tidal currents in these deeper area deposits fine sediments in to areas of still lower energy. The bottom in these deep basins is mostly fine soft mud precisely because of the *low energy* conditions there encourage settlement of sediment that would remain in suspension in more turbulent areas. The natural tidal suspension of fine sediments from soft soupy mid-bay mud is not comparable the suspension from hydraulic dredging, which suspends sediments from deep beneath the bay floor, sediments which normally remain in their anoxic tomb.

On the margins of these deeper basins and bay centers is what baymen call the edges. Edges are centers of estuarine life, where the mid-bay mud meets the harder grittier bottom with its more diverse benthic communities. Edges are primary natural shellfish and finfish habitat. The edges are characterized by inclines that rise more or less sharply to flats that slope gently to the shore. Charts often show edges as contour lines running roughly parallel with the shore mirroring the shorelines curves and features. In Gardiner's bay the edges are at various locations between 14 and 40 feet, some shallower, some deeper. While the impacts of dredging on shallow shifty sand bar habitats may be of great interest they cannot inform us of the impacts on deep-water edges and *low energy* mud basins.

*"At the smaller end of the size spectrum, silt and clay particles in muds are so vulnerable to resuspension and removal that they accumulate mainly in areas with a low frequency of resuspension (e.g., the deep sea) or high supply (estuaries). Disturbance of the Seabed by Mobile Fishing Gear". (A Comparison with Forest Clear-Cutting, Les Watling and Elliot A. Norse)*

*Clams are harvested by hydraulic equipment that shoots water onto clam beds. The pressurized water changes the environment from a solid to a fluid state and, since clams are light, they float to the surface where they are easily collected. Moralities may result from breakage, by deep burial, or through increased exposure to predators. The potential for long-term damage is greatest in shallow waters where wave energy is minimal, and in coarse, compact substrates (Dobrocky Seatech 1984).*

*Watling and Elliot observed that "dredging for shellfish resuspend large amounts of sediments (Pilskaln et al. 1998, this issue). Riemann and Hoffmann (1991) found short-term increased suspended sediment loads of 960-1,361%. The sediment plume and*

*organisms (e.g., polychaetes, amphipods) entrained within it affect water clarity, oxygen content, and energy relations of organisms living or feeding where the plume interacts with the bottom. High suspended sediment loads in shallow waters affect photosynthesizers in the water column and on the seabed. High suspended sediment loads are associated with shifts in fish communities from domination by visual predators to those that find food by touch and chemosensation, as well as alteration of the benthic community from one dominated by suspension-feeders to one having a preponderance of deposit-feeders. Once deposit-feeders become dominant, they can prevent recovery of suspension-feeders by feeding on and smothering settling larvae (Dayton et al. 1995)."*

Watling and Elliot also concluded that *"resuspension of buried organics increases oxygen demand in the water column; in areas where dissolved oxygen is already limiting, this increase could significantly affect plankton and nekton species composition, even contributing to the growth of anoxic areas. Resuspended sediment and pore water can also add to the nutrient loading of the water, perhaps triggering phytoplankton blooms"*.

2) *"Given this and the above restrictions on number of 50-acre leases that would be allowed at any one time, the volume of bottom sediments likely to be resuspended by hydraulic dredging on leased aquaculture lands pales in comparison to the volume of such sediments typically resuspended in a coastal storm." (PBAAAC committee report)*

The fallacy of this argument should be clear: coastal storms are not optional they can indeed suspend large amounts of sediment but they do not typically turn over the deep-water benthic communities or resuspend the anoxic sediments beneath them. The characteristic effect of coastal storms on the deep-water benthos is the subsequent settlement of fines sediments areas in the deeper basins and other *low energy* areas. We can only regulate anthropogenic activities it is a disservice to suggest that this committee has come to an objective conclusion that the effects of natural storms can be validly used to justify actions of man. The sediment typically suspended in a coastal storm is from *high energy* areas where the sediments are not normally anoxic and do not contain the same high levels of nitrogen and ammonia as sediments from *low energy* areas. There is such a qualitative difference between these two types of sediment that the comparison drawn by the committee report is absurd.

The following is reprinted from a 1998 Army Corps Technical Note on dredging operation. It is worth noting that navigational dredging is done because it is necessary and that unlike hydraulic dredging for shellfish the regulatory object of navigational dredging is to prevent resuspension of benthic material and great pains are taken to achieve the containment of the spoils. It highlights some of the concerns associated with suspended sediments associated with dredging operations.

***Turbidity, Suspended Sediments, and Sedimentation:*** *Of the Districts surveyed, 68 percent (25 Districts) reported turbidity, suspended sediments, and/or sedimentation issues as a reason for environmental windows (Table 3). In the protection of commercial and sport fish species, dredge-induced turbidity/resuspended sediments was cited as an issue of concern for 22 Districts (59 percent), followed by sedimentation for 15 Districts*

*(41 percent), as the most common reason for dredging restrictions. How egg and larval stages of marine and estuarine species are affected by dredging and disposal operations has been a focus of many resource agency requests for windows. Many fish species deposit demersal eggs that remain on the bottom until larval hatching. Resource agencies suspect high mortality of eggs by smothering, as a result of sedimentation, and of larvae by clogging or abrasion of gill tissues caused by suspended sediment particles. For adult and juvenile fishes, the potential blockage of migratory pathways of various anadromous species due to their hypothetical avoidance of turbidity plumes was frequently an issue of concern. Anadromous fishes such as striped bass, American shad, alewife, sturgeon (e.g., shortnose, gulf, pallid), and a number of salmonids (e.g., chinook, coho) were the most frequently listed species of concern. Sedimentation issues are also implicated to support windows to protect submerged aquatic vegetation and shellfish. The burial of aquatic plants such as eelgrass (e.g., *Zostera marina*) due to dredging activities was reported as a windows-related issue in five Districts surveyed. Shellfish such as mobile crustaceans (e.g., shrimp, crabs) and sessile mollusks (e.g., oysters, clams) are also suspected to be negatively affected by increased levels of turbidity and sedimentation. Nine USACE Districts (24 percent) currently list shellfish with regards to turbidity and sedimentation as a concern leading to windows. Major concerns involve siltation effects on suitability of clutch material settlement by larvae of the eastern oyster (*Crassostrea virginica*) and siltation-induced suffocation of oyster bars. (Reine, K. J., Dickerson, D. D., and Clarke, D. G. (1998). "Environmental windows associated with dredging operations." DOER Technical Notes Collection (TN DOER-E2). U.S. Army Engineer Research and Development Center, Vicksburg, MS. [www.wes.army.mil/dot/doer](http://www.wes.army.mil/dot/doer))*

Hydraulic dredges of the type used on Long Island conservatively suspends 1 cubic foot of benthic material for every 1.5 feet of linear travel. At a towing speed of 3 miles per hour the dredge will process 390 cubic yard of benthic material in an hour. With a 75% bottom time in an eight-hour day a single vessel will process 2,340 cubic yard of benthic material. The turbidity and off site siltation and sedimentation caused by processing this much benthic material is a function of the composition of the material and the local conditions.

The purpose of the water manifold on the dredge is to clear the mud and fine benthic material from the dredge. A series of nozzle blow down into the bottom liquefying it and another series blow back into the cage of the dredge to clear the mud from the containment area. They are blowing the bottom apart and are causing the collateral damage and downstream effects. Is it unreasonable to expect aquaculturists to keep the benthic destruction limited to the plot of land they cultivate?

- a) The light blocking effect of the turbidity alone should be enough to disallow the process in a bay system where we are trying to protect and regenerate eelgrass habitat.
- b) The immediate chemical oxygen demand from suspending anoxic mud and the consequence of ammonia release from those sediments should be enough to disallow the process.
- c) This siltation and smothering concerns alone should be enough to disallow the process.



Hydraulic dredge operating in Little Neck Bay

### **Environmental issues associated with shellfish transplanting**

The transplanting of shellfish from uncertified (polluted) areas has been an important aspect of New York's shellfish industry since the 1940s. Despite our concerns over public resource use and access to baymen we recognize that the Raritan Bay transplant provides significant employment to independent baymen who hand harvest the shellfish from Raritan Bay. There are risks from transplanting large volumes of shellfish from other areas. By introducing these shellfish to Peconic and Gardiner's bay we are essentially allowing intercourse with New York Harbor and New York Harbor, through ballast water discharge of international shipping, has daily intercourse with the world.

The impacts of algae blooms has been visited on shellfisheries worldwide. We think it is fair to suggest that there should be no expansion beyond current annual introduction of shellfish from outside the estuary, and in addition plans should be developed to examine past impacts and potential future impacts. Transplanted shellfish can and have been a vector for harmful species.

*The faeces and digestive tracts of bivalves can be packed with viable dinoflagellate cells or can contain resting cysts (Scarratt et al. 1993). Viable cysts may also be found in the mud and sand retained with dredged mussels. These cysts may then be released into coastal waters at a new location (Kaiser et al 1989)*

The application of the precautionary principle seems reasonable. As a long-term goal we believe that isolating the stocks within definable estuaries would be prudent. Alternative

technologies of shellfish purification that do not require transplanting should be investigated, they include on land closed circuit depuration and barge depuration that could be conducted on site in Raritan Bay.

*Introductions of algae, including toxic dinoflagellates, blooms of which can have a significant impact on commercial bivalve mollusc culture, have generally been attributed to the transportation of resting cysts in ships' ballast water (Hallegraeff and Bolch 1991). However, normal trading, involving transport of shellfish stocks from one area to another followed by relaying or storage in open basins, can provide another mechanism of transfer. In the Netherlands, recirculating storage systems are used to quarantine mussels and oysters as a precaution against such introductions (Dijkema 1995).*

We are confident that this is a problem that can and should be worked out by industry but it ought not be allowed to languish.

### **Non Indigenous Species and genetic concerns**

The introduction of species through aquaculture is only partially documented the impact of past introductions cannot be gauged, Oyster planters moved huge volumes of oyster seed up and down the coast through the middle of the last century the consequences have usually been viewed for their impacts on aquaculture. The impact on the wild fisheries has never been fully documented. There is a great deal of fiddling around with breeding of shellfish to create the perfect cultivation organism. Could mixing of wild and cultured stocks produce offspring that is less viable than the natural stock? Transplanted oysters often fail to set in their new environs. This suggests that they may be so specifically selected in their natural environment that they cannot produce viable offspring outside it. The inverse can be true as well the introduced species can be limited by various factors in its natural environment and be introduced to a place where those limits do not exist. Again all this leads me to conclude the application of the precautionary principle must be applied because consequences to wild shellfish could be irreversible.

*"Many countries also have additional national legislation to control the introduction of exotic bivalve species for cultivation. In the UK, for example, release of exotic species into the wild is only permissible by license under the Wildlife and Countryside Act (1981). The International Council for the Exploration of the Sea (ICES) has produced a Code of Practice entitled "The Introductions and Transfers of Marine Organisms 1994". This most recent version of the Code addresses three challenges that face aquaculture today. Firstly, inadvertent co-introductions of harmful organisms associated with the target species, as occurred recently in Pacific oyster shipments from France to Ireland (Holmes and Minchin 1995); secondly, the ecological and environmental impacts of introduced and transferred species; thirdly, the genetic impact of introduced and transferred species on indigenous stocks. Although there is concern in the salmon industry that if farmed fish escape they may affect the genetic diversity of native stocks, the genetic impacts of transferring bivalve stocks from one area to another have not been addressed.*

*Invasive alien seaweeds, including Sargassum muticum, Undaria pinnatifida and Laminaria japonica are also thought to have been introduced into European waters through transport of the sporophyte stage in oyster juveniles, or as small plants attached to bivalve shells (Rueness 1989)." (Kaiser)*

### **Potential impacts of off bottom culture on the bottom**

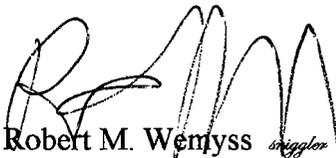
The potential for nutrient loading and bacterial matting from raft culture should be examined and in the case of transplanting sediments beneath the structures should be periodically tests for chemicals and metals.

*Dahlbäck and Gunnarsson (1981) in Sweden. ... demonstrated organic sedimentation rates of 2.4-3.1 g organic C m<sup>-2</sup> d<sup>-1</sup> beneath mussel longlines which was twice as much as found in adjacent uncultivated areas. This excessive organic enrichment was associated with anoxic sediment and bacterial mats of bacteria, Beggiatoa spp., developing beneath the longlines. In this situation, the benthic infauna had low diversity and biomass which is a well documented response to polluted sites (Pearson and Rosenberg 1978). Similarly, the productivity of densely stocked Japanese oyster grounds was detrimentally affected by the generation of large quantities of pseudofaeces and high filtration rates (Ito and Imai 1955; Kusuki 1977). Pseudofaeces production was so great beneath oyster cultivation rafts that it was at least equivalent to natural sources of sedimentation (Mariojous and Kusuki 1987).*

Intense fish and shellfish cultivation sites have been beset by epidemic diseases. Consideration should be given to emergency contingency planning to eradicate stocks of diseased cultivated shellfish to prevent the spread of such diseases to wild stocks.

## Conclusion

Proposals for the leasing of underwater land in Gardiner's and Peconic Bays has only come to table because of abusive practices of oyster land grant holders and the regulatory failures of the state and the county. To go forward with new leasing proposal without sorting out the wreckage of the past is to ignore the elephant in the living room. The promise that things will be different this time and that the terms and conditions will be enforced rings hollow. A true comprehensive independent study of this complex problem should be the only recommendation of the committee.

  
Robert M. Wemyss  
Secretary, NSBA

05 February 2007

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I attended the Suffolk Aquaculture Lease Program kick-off in Southold in January.

Here's something you may wish to take into consideration:

By and large the purchase and transfer of development rights (PDR/TDR) program has been a success by anyone's measure thanks to all levels involved — town, county, state and federal governments, plus the individuals who championed this through its often rough birth. It has even been a relatively non-partisan effort as well, which is a rarity in itself.

Now it's time to use the program to some benefit beyond open space, beautiful vistas, sane development, etc., et al. It's time to use the program to benefit not only the hard working farmers (and the wealthy non-farmers, and let's not kid ourselves about that), but the hard working — and nearly extinct — baymen and commercial fishermen.

The aquaculture leasing plan is a great idea. But any non-recreational uses of waterfront on Long Island will be nothing but verbiage unless the access problems are solved. While in many ways it's too late, there is still a possibility of saving Peconic access and thus its environment.

Why not do something truly revolutionary regarding access along with the lease program, and use the funds derived from land purchase (including the 2% transfer tax) to purchase the next marina that comes up for sale? The purpose: create a true, environmentally correct but commercial-only port.

It would create local jobs, bring money into the area, it's consistent historically with both forks and satisfies several needs, especially regarding the aquaculture plan which is an environmental necessity if

the Peconic Estuary is to regain its former status. *And* it fits the parameters and intent of the development rights program.

It takes the aquaculture project out of the hands of dabblers and puts it into the hands of people who make — or want to make — a living from the sea (some of whom I noted were, thankfully, on the advisory board), restores a traditional way of life, provides an outlet for essentially any level of schooling to practice what they've learned/are learning (i.e., engine maintenance students to marine biology doctorate students) and would be the first of its kind in the *country* as far as I'm aware.

I've thought it out a bit further, but that'll suffice for now. There's no answer required ... this is simply an idea I hope you and the advisory board will keep in mind as the lease program moves forward.

Sincerely

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