

Resource User Group Participation in the Coastal Regulatory Process
A Brief History
Roundtable Discussion – Connecticut Harbor Management Association Meeting
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Introduction

I was very fortunate early in my professional career to work for three universities, UMASS, URI and UCONN in the 1970's and 1980's. Much of my employment involved marine fish and shellfish resources and in particular restoration methods and practices. I left the University of Connecticut employment two decades ago when I began the construction of high school "Aquaculture Centers," so I have been out of the policy/regulatory "loop" for quite some time. When I met with civic groups, I frequently divided marine resource restoration into two basic areas, analytical (regulatory) or biological (stewardship). My programs frequently involved adults, graduate students, 4-H youth and in Connecticut, vocational agriculture high school students.

In the 1970's, and early 1980's, the biological management and a utilization managed resource use approach was on the way out; people involved in natural resource sciences then experienced the transition. It seemed to be replaced by a more restrictive analytical conservation-/management response or approach, – housed in regulatory agencies in many states. In Connecticut, this approach tends to isolate those wishing to both use and conserve natural resources. (This concerned several URI researchers including Dr. Virginia Lee who went on to create the Pond Watcher Citizen Monitoring group in RI). This change had, to some extent, isolated the resource user groups and other civic groups wanting to conduct what was termed "restoration" activities. The new paperwork and regulatory permitting process itself however was defeating to many; they just gave up and often looked to Land Grant Universities for technical help. Natural resource users policy wise became part of the problem which soon eclipsed conservation – a so called extreme conservation or protection. Protection as a management policy rarely has a seat at the table for resource user groups and our Coastal Zone Management Plan in Connecticut was delayed for several years because of it.

The State of Rhode Island had a different approach to involving resource user groups with the creation of a Rhode Island Coastal Resources Management Council. Its purpose was to give some balance between the management styles, biological, which often included options for resource use (with best management practices, etc.) and analytical regulatory, which tended to have the preservation / conservation focus and often excluded such user groups. This transition took place over a decade, from 1978 to 1988. The Rhode Island Coastal Resources Management Council has embraced user group participation and citizen monitoring for living marine resources, it has accommodated industries that dredged ports and harbors with membership and resource management participation opportunities.

It seemed this transition from conserving natural resources to protecting them was even difficult for early EPA Long Island Sound Study participants/planners. I always tended toward the user groups participation aspect as “vested interests” that could see a cleaner, more viable Long Island Sound as benefiting them – directly and in a measurable way, more fish or shellfish. I find the analytical approach is more abstract and concept based; I am certain that no one would stand up and argue against clean water, but for the general public and those living inland, many did not experience Long Island Sound or its natural resources. Their perspective therefore tends to focus on concerns of the area or region. Quite the opposite can be said for the user groups; - they are close to the resource and can connect the concepts of a better Long Island Sound to directly benefiting them – more fish or more shellfish, cleaner bathing beaches, improved recreational boating/access, etc. The public would see and benefit from local seafood as a direct link to a cleaner, resource richer and healthier Long Island Sound.

That is why I was intrigued when I learned of the US Fish and Wildlife recent efforts at stewardship and its attempts in 2003, in some way perhaps to re-engage (LISS- Long Island Sound Study) user groups, an area I believe to be under-represented in the current LISS structure. Improving user group participation would require a transition back to the biological approach, the use and enhancement of marine natural resources as stated in the early Connecticut Coastal Area Management reports of the late 1970’s. At that time, user groups (particularly shellfish) were alarmed by the change in management philosophy which was occurring not only on a regional and state level but also on the national level as well. Concerns also were expressed by the Natural Resource Units of the CT Dept of Agriculture in the early 1970’s by Joseph Gill, then former Commissioner before it became part of DEP.

That is why after nearly two decades, I asked to be again part of the LISS - Long Island Sound Study once again and participate on the (HRI) Habitat Restoration Initiative committee. I wanted to engage some of the user groups in discussions which required some substantial changes in viewpoints and policies on fish enhancement, habitat creation or habitat mitigation, terms largely absent from today’s resource management (regulatory) discussions. Those changes are needed for frank and open discussions regarding habitat values, an area almost certain to draw emotional responses. Included here would be resource based public access and the boating industry, i.e., dredging. Nothing seems to revive more negative feelings about resource use than dredging.

Our Long Island Sound Study Habitat Restoration Initiative meetings overall have become rather contentious and unfortunately somewhat well known for their often strong discussions. Why such strong feelings and opinions? The foundations can be seen in dramatic swings of public policies that also include legislation and rulings by courts in regards to conservation and preservation policies. And some feel that user group involvement somehow weakens the “protection” concept of natural resource management of the last three decades. Therefore it is necessary to review how Connecticut has reached out to resource user groups since 1978. Since enactment of Connecticut’s Coastal Management Plan – acknowledged to one of the nations toughest it has diminished resource user group involvement as compared to our neighbor to the east, Rhode Island.

Natural Resources and Public Trust

Access to natural resources here is a cultural and societal part of early European settlement. Often colonists arrived in New England and experienced what seemed to be limitless natural resources. Some left European countries where access to natural resources was owned, restricted or in several cases, reserved for royalty or nobles. Therefore, early colonial governments sought to preserve what they sought was “theirs.” Many felt the Timber Act, - the act that reserved large growth trees only for the English Navy, laid the foundation of disdain here in New England to Great Britain. To hide large growth trees, settlers would cut them and use them in roof framing – not floors. In that way wide boards could not be seen by the Crown-appointed timber agents. Resource use became very personal and provincial.

Often what we strived to prevent others from doing such as the public outcry against foreign fishing fleets in the 1970's, - we did to ourselves. Nearly all of our living marine resources have declined at some point since colonial times. The last “natural” run salmon caught from the Connecticut River occurred in 1793. The last two centuries (pollution events) have generally not been kind to Long Island Sound's living marine resources – except for one species, oysters when in the 18th and 19th centuries grew when organized culture occurred. Between 1860 and 1910, the oyster industry here flourished, poured millions of dollars into the post Civil War Connecticut economy. Similar to terrestrial farming, oyster growers sought to duplicate agricultural principles long established by terrestrial farmers: the collection and protection of seed, predator control, grow out and harvesting (similar if not exact methods are utilized by the home gardener today in the smaller modern equivalent of the 1940's victory garden). Such activities alter natural processes and modify what one could term a healthy habitat; in fact, it usually resulted in a new and different habitat. I doubt very much if this industry would have developed if held to the same coastal regulatory guidelines in place today. A huge difference is the ownership of the land and in Connecticut's case, submerged land. Public resources are those that are held in trust for everyone. Interpretations of public trust have had wide swings in public policy manifestations over the last century; and I will illustrate those changes with some examples below.

Policies which tend to isolate and not connect resource user groups generally – lessens public participation in resource utilization or value of them. This can be demonstrated with public policies regarding the construction of dams, once a celebrated event in terms of economic development. Today, the same structures are seen to reduce biological diversity by blocking fish runs. Public policies often lag far behind the resource use, in this case Connecticut River salmon.

It is evident therefore that with the case of the Connecticut River salmon, economic development won out over the fish. It could be said that what was lost was seen to be less than what could be gained, at least during the 18th century when water- driven manufacturing “ruled the roost” – so to speak. As economic dependence declined in regards to water power, manufacturing public policies began to shift with it; 150 years

later, the fish won out. Much of the time, the mills and factories that were once powered by these dams had long since closed. Public opinion that has long influenced public policies had changed. Few, if any, remembered the economic significance or value that these industrial uses once represented.

It is important to remember at one time people bid for the right to trap herring, conduct shore seine fisheries, establish a toll road or maintain a bridge tax. Those rights have been extinguished or modified by the State. Public opinion turned against franchising these rights, and town and state governments took over maintenance and tolls to these roads. Only recently have discussions taken place about a return to franchising back these responsibilities. In fact, two years ago, a serious debate occurred in New Jersey over selling sections of the Garden State Parkway to quasi- public agencies and in one case, a private individual. Additionally, a debate has reopened a user fee (tolls) in our State: if you use the resource (the roads), you should pay for it. The continued use of natural resources frequently strengthened protection legislation or regulation. When resources declined – often from natural cycles alone the response was to enact more regulations. This response lengthened the regulatory process and discouraged resource user groups.

Why Such Wide Swings In Public Policies?

As in the case with private bridges, and toll roads, unequal access to transportation (Interstate Commerce Act) was sought to be in the interest of the common good. Such a wide swing in public policy can be attributed to a broadening of transportation and movement of goods and services. In areas of heavy traffic (toll collection), roads and bridges were in general good repair, but in rural areas and those less traveled, some bridges were out of repair for years. Regardless of good or bad practices, the new Interstate Commerce Policy transcended all communities. We have, in Connecticut, some excellent case history regarding navigation law (Munger versus the United States). This case involved the closing of access to draw bridges by railroads, and in earlier cases, – about the railroads' impacts to ship crossings as navigation acts – regarding steamships. Railroad and bridge crossings continue to be a part of public policy debates even today. The 1890 shoreline railroad “double track case” is rich with public policy discussions especially in the Guilford and Madison town records. The railroads often won out as reflected by the greater good for the greater use. The greater good often diminished individual property rights, combined with conservation turned into protection and generally reversed centuries of shore front property rights (dredging, piles piers sea wall construction).

Natural Resource Policy –

What was occurring locally cannot be separated from what was happening nationally. Two events were to guide recent natural resource policies in the US – the printing of a book by Rachel Carson called “Silent Spring” and the Stratton Maritime Commission Report (1972). Fueled by centuries of resource use and some would say abuse, public opinion turned against the free range policies of the Western expansion when many felt our natural resources were without limits, a part of the colonial/western movement

“mindset” for three centuries. Natural resources had limits and corresponding public opinion was changing slowly – the buffalo, the passenger pigeon the dust bowl and then finally chemical contamination. “Silent Spring” quickened the resource use debate and as in similar cases, dramatically altered public opinion. A new public policy of protecting the environment came into existence, a reaction to some extent from the “you can do anything” belief to the “you can’t do anything” (without a permit) belief. Many feel “Silent Spring” quickened the public policy component by 50 years.

The environmental protection public policies quickly sought to shut the door on resource misuse. Many states, such as Connecticut, dissolved, merged or “reorganized” long-standing management and regulatory bureaus into a new agency called the Department of Environmental Protection (in case anyone remained unsure of the purpose of the reorganization). It enjoyed much public support at the time, because public opinion had so dramatically shifted as the storm clouds of the environmental movement gathered overhead. “Silent Spring” gave birth to the first Earth Day in 1970. States rushed to form or create new agencies often with the term “environmental” in the title. When the dust settled (and some voiced concern over the new agencies’ role and mission), we had a new agency in town, one created in a powerful atmosphere of public opinion to “get the environmental job done.” Regardless of good or bad resource practices, a new environmental policy would now transcend all resource user groups. This would have profound implications for those natural resources identified in the “coastal zone.” This includes dock structures, seawalls, erosion control measures, dredging and habitat trading also termed – mitigation.

Connecticut’s approach to coastal zone management (Planning Report #27) was released on September 1, 1978 by the State of Connecticut Coastal Area Management Program – 71 Capital Avenue, Hartford, CT. Page 2 of the report details some of the coastal zone area planning process. The report alludes to concerns raised about user group and the public in general regarding participation in the Coastal Management Planning process. In 1971, Governor Thomas Meskill appointed Senator George Gunther to chair Connecticut’s Coastal Zone Management Committee. After public hearings a bill was sent to the Connecticut Legislative that would have created a 15-person Coastal Resources Management Council. This “council was not endorsed for a variety of reasons” and was not explained in the planning document, even though the early CAM development process had an independent advisory board which, in 1976, was reorganized to more fully involve the public in program policy matters. On page 3 of the planning document, the Report states the Independent Advisory Board was expanded “to include ten citizen members who were chosen to reflect a balance between environmental, social and economic interests.” No details were made to continue this process of providing opportunities to express different points of view.

Reaching The Public – A Good Start here in Connecticut for Coastal Zone Management

The early CAM process created an “open participatory” planning process. The report states that the CAM staff and Advisory Board firmly believed that active public assistance in drawing up the management program, along with constant public reactions, was

fundamental to producing a sound, workable management structure. It even set out to install a conflict resolution process. The process included regional and coastal workshop to elicit viewpoints and concerns. That was an excellent beginning, however as the process evolved resource user groups became alarmed at some of the new views regarding resource use and town/individual property rights.

On page 12 of the September 1, 1978 report under the section titled Conflict Resolution and Coordinating of Plans Connecticut's approach to the program acknowledged "the potential exists between DEP and coastal municipalities over review and approval of municipal coastal programs, the CAM program is recommending that a nine-member council be established to resolve those conflicts, the council, consisting of membership representing state, regional, municipal and private interests, is necessary to provide a broader point of view than that of a single state agency (DEP) should conflicts arise." On page 16, this policy is further defined for situations that are deemed as "irreconcilable conflicts;" then a nine-member council, not DEP, would make the final determination. This represented balance between regulatory and resource groups or municipalities. The planning document details the need of providing a broader point of view and acknowledges the importance of appointing citizen members who reflect a balance between appointed by the legislature environmental, social and economic interests. I am not aware of such a panel. On page L-19, the capacity of such council, independent of regulatory agency control, is clearly outlined: "creation of such a broad being established by the legislature council is the major alternative to giving a single state agency the authority to be the final interpreter of this Act's requirement prior to judicial review." In the 1980's, we did have something similar, a Coastal Coves and Embayment Board which did have broad user group representation but was disbanded due to user group conflicts over shellfish and finfish restoration policies (Percy Chris's personal communication - T. Visel). The Board's dismissal was widely reported in the news media at the time. That was in 1994.

Today, much of the public participate any marine resource process is seen to be with the Long Island Sound Study; which had a living marine resource committee but was moved to a subcommittee of the Citizen Advisory Committee. It is my understanding that the subcommittee on living marine resources hasn't been active for a decade.

Navigation and Boating Industries as defined user groups

Much of Connecticut's and other states environmental policies reflect that any resource use results in diminished resource value except shellfish management by state statute. Use can be broadly defined as alternation, harvest or capitalization. Therefore, conservation replaced development, protection, replaced utilization, and natural over altered or manmade. Nowhere could a broader line be drawn than around dredging, the mere concept of taking something away appears to be leaving a far less valuable habitat behind. Lost were resource connections to actual practices. Early settlers noticed that logs leaves and sticks blocked tidal flows and often took matters into their own hands and used teams of oxen to clear eastern Connecticut coves. Rhode Island Salt Ponds share a similar

habitat history. Rhode Island landowners dredged them to maintain desired habitat/natural resource values.

In other areas metal bedsprings were used to keep channels clear of leaves, oystermen had local blacksmiths forge tree spikes to remove sunken logs off oyster beds. Charles Beebe formerly of Madison, once told me how much havoc one tree could cause disrupting flow and catching other debris such as to build an underwater log jam. Few people believed these reports until in 1985, when Hurricane Gloria dislodged a tree in the Branford River. It created a similar situation which ended with the CT National Guard removing it. [Engineers to remove fallen trees from River huge oak tree snares debris floating in water – New Haven Register, August 5, 1988]. The truth of the matter was that we had much more fish when all of these activities were occurring. Sometimes it took work to maintain a certain desired habitat value. The catching of fish, the clearing of leaves and navigational dredging were all activities however, that could be seen. A clear oyster bed with environmental services months later could not be linked to clearing sunken logs. A sandy bank with soft shell clams and winter flounder had no connection to three feet of oak leaves weeks before they rotted or flounder in a tidal creek over shellfish beds free of nitrogen enhanced algae made possible by dragging an iron bed spring back and forth. Fishery management practices continued to focus primarily upon size and bag limits rather than ensuring reproductive success or habitat quality. What people perceived to be bad *became* bad. It is estimated that over one million metric tons of winter sand have been spread on road and high way surfaces here in CT since the 1940's. Much of that ended up in our rivers and in deep channels to be finally removed by the boating industry. Navigation interests to some extent have been removers of fill from coastal areas. Dredging projects have removed excess organics, sediment from poor watershed practices and in many cases improved tidal flow energy. The boating community has kept habitat diversity in many coastal areas.

One of the problems that occurred in the 1960's environmental movement was the lack of differentiation between neutral, positive and negative resource practices whether it be soil, water, husbandry, or hunting such as the Duck Stamp Act. To understand the movement was the appalling waste, a growing over reliance upon chemicals and destructive natural resource policies. Clear cutting forests for paper became national headlines, rivers that were so polluted they were literally catching on fire, and smog became part of the evening weather report. This is the climate in which many environmental organizations were created.

To reach a broad audience and in some cases to marshal public opinion often extreme examples of resource use were highlighted in the press. We went from watching the Undersea World of Jacques Cousteau to seeing baby seal pups being clubbed on sheet ice, the result of which soon created a tidal wave of public concern, then outrage, when it quickly became a public policy (law). Within a few years, a tidal wave of environmental policy swept the landscape clear of long existing state agencies and much of the Federal Interior Department roles of Fisheries and Habitat jurisdiction. The concept of protecting the environment was almost entirely based upon protecting the environment from us, the people. Regulatory restrictions served to place in many instances barriers between the

people and resource use. This had in many situations the opposite result and new resource information began to collapse such as the practice of conducting a fish census by the US Dept of Interior. The US Fish and Wildlife Service of the 1950s and 1960s balanced resource use with excellent management user group programs like the Duck Stamp.

To say there wasn't sufficient reason for concern is largely incorrect. There was a need for concern and the embers of environmental discontent had smoldered for decades. "Silent Spring" and the first Earth Day fanned those embers into a firestorm of outrage, disgust and shock over natural resource misuse. After a long sleep, the country was awakened to real and substantial environmental concerns. The shellfish industry here in Connecticut (1967 Clean Water Act) and the first news of cleaner water for all was met with relief. Many credit the early oyster companies here for bringing forth some of the first state and federal litigation including clean water. They were one of the first groups to gain standing in the legal system as a direct link to "injury" by pollution where it could be demonstrated. Some of the first decisions about water quality and food production (oysters) came from our state. In one famous case, Lovejoy Oyster company versus the City of Norwalk for pollution of oyster growing water. Other oyster companies soon followed suit as New Haven and Bridgeport were also sued over sewage and disease outbreak closures. These lawsuits sought to overturn the accepted practice of dumping waste waters into receiving waters. Lovejoy lost the case which was only recently reversed by the Clean Water Act itself (1967). The first courts ruled that such waste flowing into near shore areas was "reasonable use" and not contrary to long established practices. Those cases date from the 1920's and 1930's so no one could be surprised by Pete Seeger's song about New Haven oysters in 1970. The 1967 Fisheries Restoration Act promoted by the US Dept of Interior came one century after the Connecticut General Assembly released a special report in 1867 titled, "Commissioners Concerning the Protection of Fish in the Connecticut River." The report describes the negative impact dam construction and pollution had upon anadromous fisheries such as salmon, shad and alewife, and set out practices to mitigate habitat loss with fish ladders, some one hundred and forty-two years ago. This problem has been known for a long time, a public consensus to do something about it didn't exist.

Alarmed by the loss of salt marshes in Connecticut in the late 1940s Arroll Lamson, then Chief of the Game Division of the CT Board of Fisheries and Game organized a conference in 1958, and the first on record to discuss the value of salt marshes and potential impacts upon near shore ecosystems. The keynote attendee was Dr. Paul Galtsoff, a shellfish biologist with the U.S. Fish & Wildlife Interior Bureau of Commercial Fisheries. For decades, it had been public policy in CT to fill and drain salt marshes as they were linked to outbreaks of malaria here until the 1930's. The Bureau of Labor Statistics in the 1880's, also detailed shellfish loss from "factory wastes" which at times completely filled water courses and deemed shellfish unsuitable for human consumption. Pollution and its impacts upon natural resources were also well documented by 1885, some eight decades before the Clean Water Act.

For those who fished from the sea or cultivated oysters and shell fished from local waters pollution and resource loss was no surprise. They had seen the negative impacts for generations. The last Connecticut River native sea run salmon had been captured in 1793, not 1993. On the eve of the creation of the Nation's Environmental Protection Agency, a sense of relief was expressed by fishermen, that others also would help them clean the waters and restore habitats. Other attempts to address air pollution and water pollution were also in development.

What Happened?

The concept of environmental protection was not new to existing state and federal agencies, whose roles were largely to document and report pollution. They were not advocates for environmental policy or sanctioned programs to marshal public opinion. Much of the distrust of existing agencies therefore, came from decades of "apparent" negligence, not ignorance. Public policy scientists may differ in interpretation, but often the case of "action" or "correction" was largely left to elected officials or respective legislative bodies, not appointed or civil service staff. In education terms, there was no application connected to content. Information was available but there were few to interpret meaning or provide possible solutions and no call to action. That is until public opinion tipped the balance from problem documentation to environmental protection and effective not ineffective regulatory policies. It appears that the better the previous agency had documented the problem, the worse they were now seen under this new environmental spotlight. While the zeal and some might say hysteria surrounded the environmental awakening in the early 1970's was clearly evident to elected officials, it soon was to manifest itself into legislation. EPA was established December 2, 1970, with both research and regulatory authority with a broad mandate to protect the nation's environmental resources and finally some "teeth to match the bark."

It was simply the case that most often than not, pre existing agencies often lacked the authority to make change, but merely documented that change was needed. The public was shocked and appalled at the "discovery" process of documentation of the problem, but lacked strategies of implementation or "corrective action" that would be the realm of a growing and more powerful environmental movement now sweeping across America. New policies values and beliefs were to be created from this void of public agency perceived inaction. Nothing in the marine coastal environment would be used to such an extent to create new environmental policy then dredging. It also had to mitigate decades of neglect and widespread introduction of hazardous chemicals and toxic substances that now were present in harbor bottoms. One of the first national studies of this problem was done in Quincy Bay Massachusetts and impacts upon its famous winter flounder fishery.

For decades such activities to name a few had altered coastal habitats, changed river courses, removed oyster reefs and destroyed salt marshes. For fisheries, its habitats' loss was significant so the entire practice became a negative one to be restricted, regulated and impacts mitigated. But dredging was very noticeable and galvanized early environmental policies for habitat protection. Early discussions clearly avoided what was "valuable" or what mitigation could be measured in response to navigational dredging.

Unfortunately, no criterion was offered as to degree or habitat value. A Guilford, Connecticut case involving a Mr. Hunter who wanted to build a new marina in the East River would galvanize all fledging CT environmental groups into action which eventually led to closed door discussions on preservation and habitat values. The key issue was dredging. With the emerging analytical regulatory response would come to define all aspects of bottom disturbance as the “dredge issue” sought to provide a foundation upon which to build regulatory policy. If dredging resembled the tree than bottom disturbance was its roots. Regulate the roots and the tree itself will soon perish as was commonly heard in the early 1970’s. Instead of fighting pollution, limits were set on how much you could pollute, rather than prohibit dredging extensive monitoring and disposal studies were required, there seemed no end to the analytical regulatory response to even the slightest of activities that disturbed the bottom.

With this regulatory transition in the early 1970’s, the shellfish industry found itself in chilly environmental waters. It harvested the resource it used dredges to harvest clams and oyster (an unfortunate Middle Ages term, *drudge*, that stuck to the shellfish industry); it cleaned and cleared silt to promote better recruitment and survival and it created new habitats by dredging up and planting dead oyster shells, all significant bottom disturbance activities. A significant amount of energy “work” was now spent in removing soft silt and organic accumulations from shellfish beds, much of it from poor watershed management practices on land.

For tidal rivers, the practice of oystering there had taken on new roles, removing vast and increasing accumulations of leaves, silt, and other organic debris. George McNeil had noticed this in Clinton Harbor and produced during of my interviews he provided a 1953 article titled, “Oystermen Fights for Clinton Crop”. What he was fighting at the time was not oyster drills or starfish, not that prevalent in brackish waters, but leaves, logs and sticks. He had to constantly remove them with his dredges or the bed itself would foul and die. The public did understand pests such as starfish and drills, but these oyster predators were rare in brackish areas what he was actually fighting was leaves and sticks. He wasn’t certain as to the source if all the organics, but had become increasingly evident that a problem silt covered shells while leaves sometimes 2 feet thick could be found in early spring. The habitat itself was changing – softer and more muck-like. At first he opposed the navigational dredging, but as the leaves accumulated, he started to appreciate it. They can have all the black muck they wanted, I recall him once saying; he just felt at the end, they, the Army Corps of Engineers, could help spread some oyster shells to help catch a set. This theory would be tested some years later in the East River / Guilford anchorage area with much success. Rather than view such dredging as bad, Guilford shell fishermen also came to value it and the lower river dredging projects became viewed as maintaining sediment traps for leaves and sticks. In other words, the sticks, leaves and dead marsh grass carried down river now, had a place upon which to settle and remain “trapped.” Frank Dolan felt similarly to George McNeil, that the Army Corps should at least return some shell to the bottom and further that he could remove the sticks, dead grass and leaves cheaper than the Corps; it’s “fish food” as he would describe it and maintain a certain depth and oyster culture at the same time. He saw the boating

community and oystermen as allies in the war against silt and organic matter much of it caused by poor watershed practices. I would have a chance to test Mr. Dolan's theory in 1986-88. He offered to plant at his own expense some 30,000 bushels of shell to help restore the oyster setting capacity of the lower East River in Guilford, CT. He did restore the oyster setting capacity and in a big way, University of Connecticut underwater photographs and dive reports detailed the return of juvenile winter flounder and tautog over the shelled area. These reports were immediately made available to the Army Corps of Engineers including photographs and slide presentation at their then office on Trapelo Road, Massachusetts. (Follow up letter to the Army Corps, Mr. Edward O'Donnell, March 13, 2001.)

University of Connecticut Personnel, Bob DeGoursey and Patty Myers provided underwater photography which clearly showed thousands of small seed oysters in the restricted area as well as small winter flounder. Dredging had cleaned the area – improved tidal flushing and with some habitat mitigation (shells) restored to some extent a previous habitat value. Tidal flushing has been linked to fisheries improvements in many coastal areas. The positive habitat aspects are rarely discussed, reviewed or monitored.

What Fishermen Say- The Oyster River Project, Old Saybrook, CT

The problems of estuarine channels and the filling of them with leaves were not new. Often communities of local fishermen had compensated for increases in organic debris, practices including dragging the channel to remove leaves or sticks on the natural oyster beds logs were pinned and dragged off with chains by tongers if they weren't entire bottoms would be fouled. I tried to explain that during my 1987 talk in Old Saybrook, regarding the Oyster River and the need to "work the beds" to remove silt but few believed that to be beneficial (I'm being kind) or that turning the oyster shells and loosing blankets of sea lettuce with chains was actually beneficial to the bottom and the oysters growing there. To many of the program participants this was just dredging by another name or term. Removing 3 feet of acidic muck as a positive management practice seemed contrary to long standing environmental policies. Decades later, a now very distinguished marine biologist and shellfish production expert, Clyde Mackenzie, Jr. would publish a paper titled: "How to Increase Oyster Production" on just this very subject. Or, when a large tree was caught in the Branford River in 1985 and caused so much disruption, the National Guard was called in to remove it. I just chuckled to myself at that newspaper article since the oyster tongers would remove (without any press) several trees each year from the local oyster beds. During the 1950s floods dozens of trees were removed this way (Frank Dolan, personal communication). George McNeil, a former oyster grower from both New Haven and Clinton, told me about hitting logs in the Hammonasset River each spring. He would drag the beds just as the ice was leaving because he knew it was just a matter of time before leaf covered oysters on his beds would begin to suffocate "we had to get the leaves off before they started to pump" as he would say. As the first ice cleared Mr. McNeil claimed at low tide you could see the leaves sometimes up to two feet of them over the oysters. As he recalled, he noticed a dramatic increase in leaves at first he suspected there was just more trees, but at the end of his oystering career, he suspected people were dumping them in the upper river, but couldn't prove it. Mr. McNeil didn't

feel he was dredging but assisting the downstream flow of an now increasing forest canopy.

I had Mr. McNeil's prediction come true sort to speak years later on Niantic Bay. I was assisting with a hard shell clam grow out experiment with hard shell clams. After a few months many of the seed clams had suffocated under partially rotten leaves and we thought that the recent fall storms had deposited them. As the shellfish commission chairmen sifted the dead clams, a neighbor dragging a large tarp dumped the huge mound of leaves into the water just a few yards away from the clam beds. The shellfish commission chairman ran towards the neighbor, I ran for my car thinking of George McNeil.

Old Saybrook's Oyster River

The Oyster River Old Saybrook Project created an opportunity for fishermen to again oyster "legally" and relay oyster to cleaner waters. Some of the Oyster River neighbors felt ownership of the oyster resource and the appearance of "Natural Growthers" was to some, a concern. But all the oyster harvesters commented that the beds needed to be "worked." Worked, to them was a term that describes the lifting and scouring of the shell bed itself. Living oysters would be harvested but the process of hand dredging dislodged sticks, leaves and logs exposing buried shells to the water column and surfaces for potential oyster sets. According to several small boat commercial fishermen, the Oyster River was closed to direct harvesting in 1971 so it had been a decade since oyster tonging had occurred. The prevalent harvesting device in 1981 was a hand oyster dredge similar to scallop dredges hand hauled and dragged for one to two minutes from a skiff or scow before hauling. Each of the hand dredges was equipped with a "Mackenzie pressure plate" a fairly recent feature created in the late 1960's by Clyde Mackenzie. In his now famous technical bulletin titled: Oyster Culture in Long Island Sound 1966-1969 (CMF January 1970, page 27 to 40) published before the Fish and Wildlife Service before it turned over its marine laboratories to commerce NOAA which then became the National Marine Fisheries Service (or NMFS in 1973). The paper describes how oyster setting was improved by the use of cutting boards flushing away organics which was a smaller version now added to the centuries old hand oyster drags. Dr. Mackenzie documented that many seed oyster beds were buried in silt preventing oyster sets. The hand dredging also accomplished another important process it tended to uncover buried shell bases, lifting and scouring the bottom, in effect, cleaning it. It was also Dr. Mackenzie that documented this process, that "black shells" as he called them because buried in anaerobic acidic muck were in fact, biologically clean and therefore of great value to the oyster bed. A supply of clean shell upon seed oyster could set, but needed cultivation to uncover it. What confused the issue even more was the term itself, "dredging."

Shell fishermen were providing the energy necessary, in this case harvest energy to restore the habitat value of the oyster bed. In some areas up to 3 feet of soft organic muck was removed as it was dislodged by the hand oyster dredges. Shortly afterward, neighbors reported a huge increase in winter flounder populations and catches. As harvesting had occurred each year as part of a seasonal fishery, it could be determined that a habitat

value had been therefore sustained. As organic loadings increased and nitrogen enriched algae grew denser, energy would need to be increased. It was Joe Dolan, an oyster grower from Guilford who likened the dredging problem to lawn care. If dredging were to happen every year it would not be such a huge expense or concern. If you didn't cut your lawn for two years the first new cut would be tough. He saw the same thing for the boating industry – ten years – now it is a big project instead of 4 to 5 inches/year now it is 50 inches. He had practical experience with his several oyster boats, he could wash and clean oysters, remove the silt quickly. If he waited the oysters would suffocate and to him the washing and cleaning had done the bottom some good. In his mind navigational projects increased tidal flushing and improved fisheries habitats but predicted, it would be decades before the truth about dredging would become well known.

Dredging to Restore Tidal Circulation and Benefit Habitat Values

Several habitat restoration projects and programs have looked at the impact of reduced tidal circulation to saltwater habitats – such as salt marshes but also tidal benthic species as well. Some restoration projects have sought to stabilize channel openings, improve the size and capacity of culverts, widen and deepen bridge openings. Occasionally dredging projects have created new habitats such as salt ponds or helped to restore habitats impacted by improperly sized pipes. Dredging can remove fill or lengthen habitat values in coastal salt ponds. Dredging terrestrial ponds has a long history of reversing or sustaining habitat values. In the 1990s effort were underway to use high organic dredge marine “spoils” as a soil enhancement by Texas A&M University. A century ago “mussel mud” was a commercial product, valuable to farms in Canada as fertilizer. Much of the material removed by navigational dredging is in fact, leaf compost. One such project in Alewife Cove New London was one of the first projects that attempted to measure habitat improvements from dredging. One additional benefit on reviewed as hydraulic stress is the positive impact salt pond creation (dredging) can have during storms. Excess surge now had somewhere to go – a modified manmade barrier inlet as compared to barrier beach cuts made during storms.

Impacts upon Habitats

It appears that looking at the organization of the Coastal Zone Management Act (1972) it set the stage for two opposing resource views – the first was the wise use of the resource and secondly, the protection and conservation of the resource. The same debate has influenced forest management for decades re forest fires or even logging. Many environmentalists resist both fire suppression and logging – setting the stage for horrific, often devastating “natural” events. Even the term “natural” has been in the forefront lately. What is natural and what isn't? The term habitat quality also had problems as regulations tended to ignore long term natural environmental changes such as temperature and energy cycles.

Early on, the coastal preservation and conservation management efforts looked at dredging – just as a regulated activity after all, it was a direct removal of something from the marine environment, a potential habitat loss. Removal became negative, not natural and any

aspect associated with it. One of the factors was suspension of silt/sediment in the water column. So you have regulations about “prop washing” or disturbance of the “natural bottom.” One of the first reported negative associations was that re-suspended fines were harmful to marine life. This, of course, happens “naturally” with storms, also the topic of my research at present. Most of the marine organisms have adapted to fines and silt. This needed to happen for these organisms to survive. Some of the first silt studies however were in closed system tanks, with “Fullers’ earth” in which no escape was possible – that really bothered the shellfish industry here – impacts from shellfish dredges are so small and most fish flee – coming nowhere near the severity of a coastal storm, for example. Tank studies have no “flee” factor. In many instances, fish are attracted to such bottom disturbances such as the “flounder pounder” used here until recently. Two of the largest concerns are habitat (fish egg) burial and the size, shape of the sediment particles themselves. Most of the marine sediments are “polished” – rounder and less sharp edges, fish adapt well to them. What is dangerous is “sharp” sand like brick sand and sand that is spread on roads in the wintertime. These sharp sand particle edges irritate and cut soft membranes. Eventually even these become polished by wave and tide action. Restrictions on seasonal dredging today called windows were based mostly upon:

1. Disturbance of seasonal migration patterns;
2. Burial of eggs.

Silt loading that caused damage was higher than estuarial dredging could produce that is concentrations in the “open” environment, even with dredging, never approached that. Dredging windows often did not make sense with occasional hurricanes and winter northeasters. If organisms (fish and shellfish) were that sensitive Long Island Sound would have been vacated of living organisms thousands of years ago. Shad and other herrings return to our stream when runoff from spring is highest not the lowest. Some of the dredging windows for species like winter flounder have conditions reversed, winter flounder habitats actually benefit from energy (dredging).

Most of the research community has weighed in that re-suspension of limited duration presents little (most say none) environmental risk. But many groups have seized the negative aspects of “dredging” and clump that with navigational dredging. In Madison (1990), that was the case there – shore front owners didn’t want the sight of or noise from the clam dredge boats. In the end, the scientific community dismissed the outrageous environmental complaints brought forth, and it came down to “we just don’t want to look at them.” Often public policy is wrapped around environmental policy especially when it comes to resource use.

It may be that mitigation procedures mentioned on page 11, Guilford, CT for the East River Project (JSR Vol.7, No 2. 267-270, 1988, The Mitigation of Dredging Impacts to Oyster Populations) might have a role under essential fish habitat regulations for winter flounder. Although some egg loss can be attributed to dredging operations and siltation, the same process could also replace shells, clean them and provide an area for improved survival and flounder growth mitigating any loss and perhaps enhancing habitat quality for winter flounder. This would necessitate long term habitat creation, enhancement and

mitigation research. Recent studies have indicated a winter flounder habitat preference for cleaner, sand bottoms that contain bivalve shell litter. Egg suffocation, such as landing in areas that contain soft low pH leaf accumulations is thought to be just as damaging as passive deposition. So in many cases, removing soft bottom habitats and substituting bivalve shells may actually increase biological diversity, helping, not hurting desired habitat assemblages such as these identified for winter flounder. The positive habitat impacts of navigational dredging however are rarely reviewed. One of the few long term studies of annual bottom cultivation / disturbance is a Niantic Bay winter flounder trawl net sampling program conducted by Millstone Research Laboratory. Trawl net surveys in the Upper Niantic River showed consistent greater flounder abundance in areas traveled on a regular basis than occasional trawls outside of the study area (Doug Morgan personal communication 1988). It was suggested at the time that the trawl net itself acted as an annual leaf raking activity helps to maintain a firmer or hard bottom habitat. Oak and maple leaves are quite acidic – limiting bivalve sets in many instances.

Some new research has indicated some benefits to bottom disturbances that remove silt from benthic habitats. A Canadian Journal of Fisheries and Aquatic Sciences Vol. 7 #7 July 2008 speculates that bottom trawling disturbance may have habitat benefits. That study reviews a flounder species plaice (*Pleuronectes platessa*) and bottom disturbance may improve feeding and food webs. Ireland and Scotland in some studies have indicated the negative environmental impacts of sealing in terrestrial sediments (dredge spoils) effectively removing a natural process that supported several near shore food webs for fish. Oyster harvesters and winter flounder fishermen in Clinton Connecticut felt that periodic barrier inlet openings allowed organic material to nourish offshore and adjacent eelgrass beds in the outer harbor.

Natural Maintenance Dredging Versus Man Made Maintenance Dredging

It is not uncommon to witness and to some extent measure natural dredging events created by energy inputs we call storms. Barrier Beach cuts show many of the same energy impacts and tidal changes accomplished by today's navigational dredging – it's just slower and harder to measure. Storms have breached sand barrier inlets such as Great Bay in New York or Pleasant Bay on Cape Cod many times after such natural storm related dredging events. Tidal flushing/exchange improved and resource user group fishermen often reported enhanced fisheries production. Natural events that created new and restored habitat values can be found in several fisheries history reports - Clyde Mackenzie the shellfish biologist mentioned earlier in this report documented the impacts of enhanced tidal circulation after inlet creation for several shellfish producing bays (Moriches and Great South Bay). A research effort in April 2000 by Allec King, Rosen and Fleming for the Army Corps of Engineers. Bay men interviews – Atlantic Coast of Long Island Fire Island Inlet to Montauk Point, New York, almost every bay man interview concluded that “energy” inlet formation such as from hurricanes created greater tidal exchange (deeper and wider channels) and improved fisheries. Therefore in many respects maintaining navigational dredging mimics in much detail the impact of occasional “natural forces” in habitat sustainability. Therefore dredging may establish a new way to restore or sustain certain fisheries habitats. This is certainly somewhat

controversial but historical references to erosion/cuts appear to indicate opportunities to rejuvenate or reinvigorate coastal habitats. Numerous references to the energy as both habitat creation or mitigation processes exist in the historical literature and user group beliefs.

Conclusion: “Not all Dredging is Bad.”

It remains to be seen that dredging will remain a controversial issue for quite some time. This is unfortunate as the debate often ignores the negative impacts of shoreline development in general, run off, nitrogen enhanced vegetation, poor storm water management practices and potential mitigation activities. These issues cannot be removed from the “natural” “environmental debate” and if energy “work” such as navigational dredging is viewed solely a negative input or impact as that I believe is incorrect. It is not “all bad” nor should it be treated as such, what is needed is a thorough review of what habitats we seek to protect is what we value – that is a social and public policy debate not just an environmental one. Natural energy is applied to coastal habitats everyday – but that is called erosion. We may choose to fight or prevent erosion based upon values of a greater good. Even docks and bulkheads have habitat value and in some instances substantial habitat value (vertical reefs) but are rarely mentioned in positive terms. Jetty and Groin construction provided hard structures (artificial reefs) for fish but our state has not commenced one artificial reef study even though Rhode Island has several experiments underway. Sub tidal reefs have much promise in minimizing seawall damage but conflict with “natural” regulatory policies.

There is a bias policy wise towards resource use as it simply conflicts with protection. Until this bias is recognized and then “balanced” it will be an uphill effort for the boating industry that needs dredging. In many cases what is valued environmentally is not aligned to user group perspectives or values. This is the challenge that navigational dredging presents – how to combine both and involve user groups in these important discussions.

Tim Visel

Tim Visel can be reached at The Sound School: tim.visel@new-haven.k12.ct.us

Technical changes February 7, 2011- addition Peter Belsan memo.

Ten handouts added as appendices, September 20, 2012 – Shoreline Task Force



STATE OF CONNECTICUT
BOARD OF FISHERIES AND GAME
2 WETHERSFIELD AVENUE – HARTFORD, CONNECTICUT

ADDRESS ALL MAIL TO
STATE OFFICE BUILDING, HARTFORD 15

April 17, 1958

Dr. Paul S. Galtsoff
Woods Hole
Mass.

Dear Dr. Galtsoff:

Here in Connecticut we are fighting the seemingly losing battle of saving our tidal marshes. One of the features of the evaluation of these marshes is that which is contributed through the nutrients and minute animal forms which go into the production of seed oysters and soft clams. I have recently conferred with Dr. Loosnoff of the U.S. Fish and Wildlife Service Marine Laboratory, Milford, Connecticut, and he has suggested that, if possible, it would be well for us to sit down with you and discuss the many values which these tidal marshes have to the production of fin fish and shellfish along our Atlantic Seaboard. Inasmuch as many of us are not Marine Biologists, we would like to be able to reproduce many of the statements which you will give us. Would it be agreeable to you if we brought along a Tape Recorder so that we would be sure to have a record of the many things which will be of value to us? I would appreciate hearing from you as to a convenient time and place at which we might meet and discuss this problem with you.

Yours very truly,

Arroll L. Lamson
Chief, Game Division

ALL:lcs

RG 079:001, Department of Environmental Protection: Central Office

Historical Note

In 1971, the General Assembly created the Department of Environmental Protection to address “the profound impact on the life-sustaining natural environment” by “the growing population and expanding economy of the state.” The new department consolidated powers and duties of a number of small state boards and parts of the Department of Agriculture and Natural Resources. These included the Park and Forest Commission, the Commission on Forests and Wild Life, the State Board of Fisheries and Game, the Water Resources Commission, the Boating Commission, the Shell-Fish Commission, Marine Resources Council, State Soil Conservation Advisory Committee, the State Board of Pesticide Control, the State Geological and Natural History Survey Commission and the Clean Air Commission.

Since its inception, the department has undergone numerous reorganizations as a result of evolving environmental issues and public policy mandating expansion of the agency's regulatory role. Restructuring the department to make it more "user-friendly" to business and to produce cost savings have also spurred reorganizations.

See also the Department of Environmental Protection Agency History.

Inventory of Records

Finding aid prepared by Connecticut State Library staff

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Response from Peter Belsan, November 30, 2010

Re: Questions about flounder habitat (winter flounder habitat restoration – Scituate Harbor)

Hi Tim,

Winter flounder fishing is very close to my heart because this is the first salt water fish I targeted as a kid growing up in Scituate. Myself and family or friends would take the dory out in to the middle of Scituate harbor and fill a five gallon bucket with black backs in one hour on an incoming tide. We only kept the fish that were 14 inches or longer, the fishing was good, real good. These were times when Boston Harbor was the flounder fishing capital of the world. Anglers would come from far and wide to fish for flounder in Boston Harbor for a day. With no limits on the fish every body went home with plenty of fish.

A lot has changed since the early seventies Tim. Whether the changes have come about because of natural cause or are do to human activities will always be debated. I think some of both helped in the decline of the flounder. In addition to anglers we had draggers working right on the beaches absolutely crushing the fish. I will tell you one thing they are definitely coming back, stricter commercial regs. And a natural cycle are to the thank for the resurgence of black backs.

As far as flounder habitat and bottom conditions things have changed the last few years with the dredging of our harbor. Removing all that old material that has been sitting on the bottom and getting back to a more natural sand/mud and gravel bottom has improved the flounder habitat greatly. I do think the dredging greatly improved the harbor so the fish are coming back in to feed. I also remember there being a lot more mussels around when I was a kid compared what we have today. I am sure these creatures are all connected in some way.

Good luck with your studies,

Pete B.
Pete Belsan
Belsan Bait and Tackle
38 Country Way
Scituate, MA 02066
781.545.9400

Coastal advisory board disbanded

Guided state on conservation funding

By Sam Libby
Courant Correspondent

The state will no longer consult a panel of private citizens when it decides how to spend money for the restoration of Connecticut's wetlands and Coastal Resources.

Since 1984, a 12-member board has advised the state Department of Environmental Protection about projects submitted for funding under the agency's cove and embayment program. The board—which has included oystermen, science teachers, college professors, environmentalists, shellfish experts and members of the recreational boating industry—has approved about \$1.6 million for 23 coastal projects.

But over the past three years, board members and employees for the DEP's Long Island Sound office have argued about the direction and scope of the state's wetlands restoration policy.

Some board members say the agency has failed to do the surveying or research required to determine which coastal areas and resources are most in need of restoration and preservation, or to come up with a comprehensive plan for such work. Board members also say the office has focused on the restoration brackish water vegetation, ignoring endangered finfish and shellfish.

The decision to disband the board was made by DEP Commissioner Timothy R. E. Keeney. He said the board has fulfilled its mission to establish criteria, procedures standards and pilot projects for wetland preservation or restoration.

Also, the DEP is anticipating funding cuts, and eliminating the board is an attempt to make operations more efficient, Keeney said. Staff time once spent on coordinating with the board instead will be devoted to applying for federal and private money for state wetland projects, he said.

Keeney's decision is drawing criticism from several fronts.

"Anytime there's a dedicated group like the advisory board, it serves a valuable purpose" said state Sen. Eileen Dailey, D- Westbrook.

The board has shown itself to be a dedicated and knowledgeable, giving intelligent advise about how funding for wetland restoration, Dailey said. State employees often don't realize how important Long Island Sound and programs to restore the Sound's wetlands are coastline residents, she said.

"Who's going to be the devil's advocate?" asked Sally Richards, a former board member and secretary of the Guilford Shellfish Commission.

The board has raised many pertinent questions about the direction and scope of the of the DEP's coastal restoration work, Richards said. Indeed, many board members complain the DEP is not going far enough with its work.

The vast majority of the money spent by the cove and the embayment program has been used to restore tidal flow between Long Island Sound and the state's coastal wetlands.

Road, railroad tracks and badly engineered tide gates have reduced the flow of salt water from Long Island Sound into coastal wetlands, destroying or shrinking the habitats of native plants, fish and animals. It also has permitted an explosive growth of phragmites, a water reed.

The success of a state wetlands restoration projects is often measured by an increased flow of salt water into a wetland and a reduction in the amount of phragmites.

Christopher Percy, president of the Sounds Conservancy, an Essex-based marine environmental group, and an advisory board member since 1986, acknowledged that the restoration of brackish water wetlands is very important.

But he said the legislation that established the advisory board and the cove and embayment program allows for the preservation and restoration of a broad range of animal and plant habitats and coastal resources.

The DEP has chosen to undertake small wetlands projects in many parts of the state, but has never focused on the coastal resources- shellfish and finfish – most in need of restoration and preservation, he said.

Art Rocque, the DEP's deputy commissioner and head of the Long Island Sound office, agrees his office has not had a comprehensive survey of the wetlands and coastal resources. He said his office does not have enough money to do the type of survey suggested by board members.

Enough research and survey has been done to make intelligent decisions regarding wetland restorations. Rocque said.

During the board's final meeting in September, Rocque told members in his office will consult with a group of marine and wetland scientists about state wetlands-restoration programs. About \$1.6 million of state money is available for such programs.

Percy said he was concerned the state would only consult with scientists whose research was being funded by the Long Island Sound Office.

Rocque said that would not be the case.

BARNSTABLE COUNTY

Cooperative Extension Service

University of Massachusetts and U.S. Department of Agriculture cooperating

Barnstable County
Cape Cod Extension Service
Deeds and Probate Building
Railroad Avenue
Barnstable, Massachusetts 02630
Tel. (617) 362-2511, ext. 201

MARINE RESOURCE WORKSHOP

REGULATIONS AND PERMIT

PROCEDURES FOR DREDGING AND NAVIGATIONAL IMPROVEMENTS

The Massachusetts Coastal Zone Management Program, in cooperation with the Cape Cod Extension Service, will sponsor an informational workshop on Coastal Dredging.

The workshop will be held on March 16, 1982, at 7:30 p.m., in Rooms 11 and 12 of the County Superior Courthouse.

Representatives from state and federal agencies, including the Army Corps of Engineers, Environmental Protection Agency, as well as Massachusetts Coastal Zone Management division staff members, will discuss and answer questions concerning dredging and navigational improvements to local harbors.

All persons interested in any aspect of marine dredging are urged to attend. There is no registration fee and printed information materials will be provided.

Timothy Visel
Regional Marine Resource Specialist
TV/pd

For additional program information, please contact:

Jack Clarke
Coastal Zone Management Coordinator
Telephone 362-2511, Extension 477

The Day, New London, Conn., Wednesday, June 12, 1985

Specialist warns agency of ‘black mayonnaise’ threat

By William Hanrahan
Day Staff Writer

GROTON – they call it black mayonnaise – it’s the murk and muck, sometimes several feet deep, that collects on river bottoms. It’s also the stuff stifling the area’s oyster crops, according to an expert.

Addressing the town’s Shellfish Commission Tuesday night, Timothy c. Visel, a marine resource specialist for the University of Connecticut, said the build-up of debris in shellfish area’s can weaken or eliminate growth.

Working in waters off Old Saybrook, Clinton and Madison, Visel said production of oysters there has more than quadrupled thanks to clean-up efforts during the past three years.

“There seems to be a trend that our rivers are filling up with black mayonnaise,” he said. “We have seen a dramatic increase in river life as the dead stuff is removed.”

The accumulation of debris occurs in waters with poor circulation. “We get so many nutrients going into these sluggish coves without a lot of circulation,” Visel said. “This causes a build-up and no oxygen gets down in the water.”

Visel said removing debris not only enhances oyster growth, but has increased the presence of a number of other fish, including flounder.

Visel said Connecticut used to be a leader in oystering about 100 years ago, with local areas such as the Poquonnock River as prominent beds. More than 100 oyster companies on Cape Cod used to rely on seed oysters from Connecticut which were brought there to mature.

Production dwindled to almost nothing as waters became polluted, he said. A clean water act in the late 1960’s helped rekindle the industry during the 1970’s, but things are still not what they used to be.

Removing black mayonnaise helps oysters and other life forms grow and even cultivate in areas previously devoid of life.

“About 1500 bushels came out of Old Saybrook last year and no shells were put in the water,” he said. Visel said areas where mud is a problem often smell bad or show a white, milky substance floating on the water. Commission members said they had seen signs of this in town waters.

Debris can be removed from river and cove bottoms with oyster dredges, Visel said. By stirring up the mud at high tide, the debris is able to flow out of the area when the tide changes.

Debris can consist of decaying leaves, sticks, logs, garbage and nutrients which build up in the water. Visel said water jets also have been effective in removing mud

The commission plans to study the information presented by Visel before considering possible action.



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02154

34

REPLY TO
ATTENTION OF
NEDOD-R-13

14 August 1979

Mr. Timothy Visel
38 Pent Road
Madison, CT 06443

Dear Mr. Visel:

Thank you for your letter, dated 3 August 1979, concerning our permit, No. CT-CLIN-79-266, issued to the Connecticut Department of Administrative Services to perform work at Hammonasset State Park.

In response to your question on the reclamation of salt water habitats, the Corps of Engineers has no direct plans at this time to perform such reclamation projects; however, we do encourage applicants for Federal permits to consider additional work to mitigate the loss of significant wetland resources. This was the case in the agreement reached on Chases' Pond.

As you know the Corps of Engineers is neither a proponent or an opponent in these matters. Our regulatory responsibility is to weigh, and balance the benefits and detriments of individual projects as they impact wetland and other aquatic resources. Whenever, an application involves fill in wetlands, we require the applicant to investigate alternatives that would eliminate or reduce the need for fill. In this case, as in others, alternatives were not feasible and the loss of wetland was not significant to override the overall public interest to be served by the project.

If you have any questions, please contact me at 617-894-2400, extension 372. You may call collect.

Sincerely yours,

KENNETH M. JACKSON
Chief, Processing Section
Regulatory Branch
Operations Division

Branford Review



60th Year – Number 42 August 10, 1988, Branford Connecticut

National Guard comes to rescue

THE CONNECTICUT NATIONAL GUARD made a visit to Branford on Saturday to remove a tree downed during Hurricane Gloria almost three years ago. Residents complained that the tree caused debris to collect since it crossed the Branford River, behind Riverside Drive. In the photo below, Branford Fire Lt. Ron Mullen watches from the Branford fire rescue boat as Sgt. Bill Keen, left, of the Branford Fire Department and National Guard Staff Sgts. Joseph Lucia and Gerald Wright attempt to remove the tree. In the photo at left, Wright is hard at work with a chain saw.

Rekeyed by Susan Weber, September 25, 2012

Robert Degoursey
UCONN Marine Sciences Initiative
445-3439

DIVER/VIDEO SURVEY OF THE UPPER
PATTAGANSETT RIVER ESTUARY

Date 16 August 1988
Time 1200 – 1430 hours
Tide Flood --→ high slack water
Temperature not taken; estimate -25°

METHODOLOGY:

Direct, insitu visual observations and discrete u/w video photography was used to describe the general physiographic features and floral/faunal species present in the estuary. Particular emphasis was placed on delineating the general condition of the oyster beds. Three diving transects were made down river. The first starting just below the highway bridge, the second approximately midway between the two bridges and the third in the lower end of the river approximately 50 meters north of the Amtrak bridge.

Divers made visual observations of sediment type (substrate), topography, suspended sediments, vegetation and species present. Discrete video footage was obtained in order to characterize each area surveyed.

Transect #1 – Highway Bridge

Area Surveyed: Proceeded down river from the highway bridge approximately 75 meters
Depth: < 1 meter at the river bank gradually deepening to a depression 3 meters deep in the center at the river.

Sediment Types: All sediments observed were very fine grained, soft, unconsolidated and easily resuspended. At the river banks, divers could penetrate the bottom by hand to .5 meter. In the center of the river a relatively thick shell base predominated the bottom. This shell material, principally composed of Argopecten, Crassostrea and Spisula, was overlaid by a veneer of very soft unconsolidated sediment. Surficial sediments appeared oxygenated with the redx layer generally evident at a 1 – 2 cm depth.

Topography: The banks of the river were flat, featureless muddy bottom. Shell debris, apparently from earlier seeding efforts, were concentrated in the center of the river.

Biological

Observations: Relatively few macroalgal specimens observed. Most were attached to hard substrates (i.e. rock, shell). Ulva was the only species identified. Xanthid crabs, probably Neopanope taxana sayi were observed occupying cover provided by shell debris; 15+ specimens observed during the 30 minute dive). Two expanded (feeding) siphons of ark shells (probably Cyrtopleura costata) were observed in shell debris. Bivalve pseudo feces (species ?) were ubiquitously distributed.

Approximately 20 extant oysters were observed during the transect. The live individuals were most often vertically oriented and partially buried

with greater than 50% of the shell covered by sediment. Small anemones (probably Metridium sp) commonly colonized shell material.

Transect 2 – midpoint between highway and Amtrak bridges

Area Surveyed: 25 meter transect from west bank to east bank of river.

Depth: Approximately 1 meter

Sediment Type: All sediments observed were very soft, fine grained, unconsolidated and easily resuspended. Divers could easily penetrate the bottom by oxygenated with redox layer evident at 1 – 2 cm mostly Crassostrea, observed.

Topography: Entire transect area was flat, featureless muddy bottom. No vertical relief noted through entire transect.

Biological

Observations: The bottom was predominantly covered by a single species of green filamentous algae (unidentified). This species provided approximately 60% of the aerial coverage over the transect. Three or four individual band shrimp, Crangon septemspinosa, were seen during the 30 minute dive.

Transect 3 – 50 meters north of the Amtrak bridge

Area Surveyed: Approximately 25 meters in the center of the river proceeding west to east.

Depth: 1 meter

Sediment type: All sediments observed were very fine grained, soft, unconsolidated and easily resuspended. Divers could easily penetrate the bottom by hand to 1 meter with little resistance. No hard substrates were located. The surficial layer of sediment was oxygenated to approximately 1 cm. characteristic H₂S odor was produced when sediments below the redox layer were disturbed.

Topography: Flat, featureless, soft muddy bottom over entire transect.

Biological

Observations:

No attached macroalgae observed. Little evidence of benthic or epibenthic activity. A few excavations, possibly caused by mud shrimp, were noted. The sand shrimp Crangon septemspinosa was the only live organism noted.

Rekeyed by Susan Weber

September 24, 2012

**AN OYSTER BED RESTORATION PROGRAM FOR THE EAST RIVER
TOWN OF GUILFORD, CONNECTICUT**

MITIGATION OF DREDGING IMPACTS TO OYSTER POPULATIONS

TIMOTHY C. VISEL

Sea Grant Marine Advisory Program

The University of Connecticut at Avery Point

Groton, Connecticut 06340

Abstract: Maintenance and extensive dredging in coastal areas along the Northeast and Mid-Atlantic coasts have altered the population dynamics of oysters. In most instances, oyster production has been reduced by removing shell bases and reefs upon which spat could set. Mitigation of dredging impacts can be made through a variety of re-shelling programs. For example, in Guilford, Connecticut, periodic maintenance dredging since 1957 continues to increase mortality of seed oysters and removes the shell base upon which seed oysters set. In 1983, plans for increased dredging were questioned by the newly formed Guilford Shellfish Commission as well as local oystermen. In 1984, taking into account the Army Corps dredging schedule and emplacement of private moorings, the Shellfish Commission acted upon a Sea Grant proposal and made an agreement with a local oyster company to manage oyster bed restoration in this area. The oyster company was required to maintain the depth of the channel by cultivating and removing oysters with oyster dredges. Eight thousand bushels of crushed oyster and clamshell were planted in 1985 to form a shell base. In July 1986, 8,000 bushels of shell were planted over the shell base, which obtained a set of 0-year oysters. A harvest of several thousand bushels of seed oysters is anticipated in 1987. Mitigation agreements which are small in scale and do not interfere with other coastal activities can be expanded to improve oyster resources.

The random sampling previously described yielded many two-year olds and set from last year's spatfall on these shells. The oysters all appeared healthy and growing rapidly. The average number of oysters per bushel of sampled cultch was found to be 74 and ranged from a high of 13/bushel to a low of 27/bushel. No distinction was made between the 1985 and 1986 spatfalls. Several shells contained both year classes and had multiple spat, some up to 10 per shell. It should be noted that from the appearance of the shell surfaces many of the clam shells were partially buried and had formed a shell base. It was not possible to determine to what extent the cultch planted thus far acted as a shell base or as a possible setting surface. Underwater photography of the bed is scheduled in the late fall of 1988 and

should show bed configuration and profile. To date, approximately 26,000 bushels of clam shells have been planted.

Discussion

It was felt that the East River was a good candidate for a small restoration project; oyster setting was frequent, the Shellfish Commission and the industry both supported the effort and conflicting uses were seasonal. Under no circumstances was the growth of seed and adult oysters to impact upon navigation.

In this case implementation of new shellfish management policies could possibly eliminate or reduce the need for continued maintenance dredging. If channel depths can be controlled by removing excess oysters or shell, navigation dredging costs would be reduced and the environmental impacts associated with upland disposal of dredge spoils lessened. Follow-up studies of the East River restoration and bed management programs could provide valuable information to other resource managers. Similar small scale projects should be investigated and in my opinion, warrant further research.

LOCAL

Milford approves plan to dredge Oyster River

By Christian Miller
Register Staff

West Haven officials have cleared the final hurdle to prevent flooding along the Oyster River, following approval by Milford officials of a plan to dredge the river.

Milford's Inlands/Wetlands Commission Wednesday night approved West Haven's plan for the river that borders the two communities. Dredging of the river on the West Haven section of Woodmont Road is expected to begin in July and estimated to cost \$100,000, officials said.

That's good news for William Henninger, whose West Haven property abuts the river and floods with each heavy rain.

"It's like a floodplain down here right now," Henninger said referring to the back of his property on Woodvale Road. "They kept developing land and not making provisions for the water to get to the (Long Island) Sound."

The Oyster River winds through Orange near Marsh Hill Road and eventually empties into the Sound. The river acts as the border between West Haven and Milford's Woodmont section.

Where the river flows under Woodmont Road in West Haven, a buildup of silt has developed under a culvert. As a result, the two five-foot wide culverts under the bridge are clogged.

"It's like trying to put a size-50 foot into a size-12 shoe," Henninger said.

Crews will scoop up the silt in the river, as well as widen the existing culvert. West Haven City Engineer Abdul Quadir said.

The work can be done only between July 1 and Sept. 15, Quadir said. The restriction protects the schools of alewife fish and swims out of the Sound in the spring and spawn in fresh water.

West Haven Mayor H. Richard Borer Jr. said only approval from Milford was needed before the project could begin. Orange, West Haven, the state Department of Environmental Protection and the U.S. Army Corps of Engineers all have approved the plan.

At Wednesday's meeting, Milford's city engineer John Casey said he's concerned about water runoff affecting the river if the giant Stew Leonard's dairy store is approved in Orange.

Casey's concerns were passed on to the Orange Town Plan and Zoning Commission, which currently is reviewing the Stew Leonard's proposal.

Rekeyed by Susan Weber, September 25, 2012