

Florida Aquaculture

Summary of public workshops concerning amendments to Chapter 18-21, FAC

Public workshops were conducted on December 12, 13, 17, 18, and 19, 2007 in Cedar Key, Pine Island, Tallahassee, Carrabelle and Cocoa, respectively. These locations were recommended by the Clam Industry Task Force as regional locations to accommodate interested parties on the Gulf and Atlantic Coasts. Four locations (except Tallahassee) represent regions where hard clam farming on sovereign submerged lands is an important aquacultural business.

The workshops were conducted to present information about the Department's intent to ask the Board of Trustees to amend Chapter 18-21, Florida Administra-

tive Code, relating to the delegation of authority, forms of authorizations, and consolidation of the standards, policies, criteria, applications and fees into new rule sections.

There were very few public comments relating to the technical aspects of the proposed rule amendments, and most questions focused on whether the proposed changes would affect current policies and procedures. Several attendees were familiar with the previous actions to amend Chapter 18-21, F.A.C.

There was general agreement that amending Chapter 18-21 to partition the policies related to aquaculture into specific rule sec-

tions was a good idea. Most of the attendees were already leaseholders and some felt that they probably would not be affected by the proposed amendments. However, industry representatives understood that the consent of use would be very advantageous to small producers seeking authority to use sovereign submerged lands. Most of the interest involved the letter on consent for aquaculture docks. Many nurseries around the state are operating under a "conditional consent of use" and there is agreement that a new form of authorization for these activities must be established.

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If there are no substantive changes to the proposed rule, the Department will prepare a Rule Adoption Package for final approval before seeking consideration by the Board of Trustees. For additional information, contact Mark Berrigan, 850-488-4033 or berrigm@doacs.state.fl.us.

FSU's Winston Menzel planted hard clams 50 years ago

During March 1958, Dr. R. Winston Menzel, Florida State University, planted several hundred thousand laboratory-reared northern hard clams, *Mercenaria mercenaria*, from Long Island New York in Alligator Harbor, Franklin County. The clam seed was provided by



in Milford Connecticut. Loosanoff had solved technical problems

Dr. Victor Loosanoff from the U.S. Fish and Wildlife Service laboratory

with spawning and producing hard clam seed in the early 1950s.

Dr. Menzel reported this first test planting in a 1961 paper that contrasted comparative growth rates between the northern and southern hard

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Menzel's clams (cont'd)

clams, *M. campechiensis*. He noted that the northern hard clam grew much faster in Florida waters than growth rates reported from Maine, Massachusetts, New Jersey, Virginia, or North Carolina, and that the southern hard clam grew faster than the northern clam.

In an effort probably inspired by Dr. Menzel's work, Kenneth Woodburn, Florida State Board of Conservation, coordinated a 1960-61 test planting of northern hard clams and a northern and southern hard clam hybrid produced by Dr. Loosanoff's lab at eight Florida locations: Alligator Harbor, Crystal River, Boca Ciega Bay, Little Sarasota Bay, Sugarloaf Key, Miami, Sebastian, and northern end of Mosquito Lagoon. Growth and survivorship were good for all of the locations except Miami and Crystal River where poor clam handling may have contributed to their demise.

Dr. Menzel and a co-author reported experimental hard clam farming in 1962 paper where

they may have been the first people to use the term "mariculture." In this paper they described constructing pens surrounded by six-foot-high fences of one-half inch mesh plastic coated wire or nylon webbing to prevent predators from entering the 100 to 625 square foot areas. Blue crabs that did enter were removed with baited traps. Clams were planted at 10 to 75 per square foot.



Despite problems from a nearby dredging operation, growth rates were similar those reported in 1961, mortality was between 5% to 18%, and 18,000 out of 25,000 planted clams were sold. Several recommendations were offered that included a minimum 12.5 mm clam seed size, predator protection, and constant attention.

In a 1968 report for the Food and Agriculture Organization of the United Nations, Dr. Menzel summarized his work and the potential for hard clam culture in the Caribbean. He noted that the two species' ranges overlapped in Florida and that a hy-

brid of the two species was easy to produce, the hybrid had the better growth rate of the southern hard clam, and it had similar good out-of-water storage qualities like the northern hard clam.

In 1976, Dr. Menzel and his students reported on the outcome of their test plantings of hybrid hard clams at the Alligator Harbor location through the early 1970s using parental stocks from Maine to Texas. Their goal was to improve growth rate and they reported the fastest growing clams were those selected from backcrosses of first generation hybrids to the southern hard clam.

Dr. Menzel enjoyed a distinguished career at FSU with students that included Dr. Bob Stickney, current Director of the Texas Sea Grant Program, and Dugan Whiteside, a farmer of hybrid striped bass in Hastings Florida. He died in 1989 just before the publication of a book he edited and wrote entitled: *Estuarine and Marine Bivalve Mollusk Culture*.

Images of Dr. Menzel courtesy of FSU Oceanography, Newsletter No. 20, Spring/Summer 2000, and Menzel, W. 1971. The mariculture potential of clam farming. The American Fish Farmer, July issue.

Apalachicola kiosk celebrates 120 years of planting oyster cultch

In partnership with the Apalachicola Bay Aquatic Preserve, the Division of Aquaculture installed an educational display at the City of Apalachicola Battery Park Marina. The display features two panels. The first panel recognizes the long history of planting oyster cultch in the Bay that was begun by oyster cannery owners in the 1880s and continued through a



one of the Nation's valuable biological and ecological treasures.

variety of state agencies up until today.

The second panel describes the value and importance of Apalachicola Bay as

During kiosk construction the large, nearby boat ramp was busy with oyster harvesters landing fresh product. They reported good harvests and salty oysters.

Funding for the kiosk was provided by the National Oceanic and Atmospheric Administration, Florida Coastal Management Program, and Florida Department of Agriculture and Consumer Services.

Triploid grass carp risk analysis completed

At least three biotypes of a nonnative aquatic plant, hydrilla (*Hydrilla verticillata*), in 20 water bodies throughout Central Florida have developed a resistance to fluridone. Lakes Tohopekaliga, Cypress, Hatchineha, and Istokpoga can support fluridone resistant hydrilla with as high as 60 to 90 percent surface acreage coverage. These lakes and other fluridone resistant hydrilla impacted water bodies are connected to other water bodies such that triploid (sterile) grass carp stocked to consume hydrilla can leave. Stocking triploid grass carp in open waters, i.e., connected water bodies, is prohibited by the Florida Fish and Wildlife Conservation Commission (FWC).

To address these complex issues, a steering committee of representatives from the FWC, U.S. Fish and Wildlife Service, Lee County Hyacinth Control, and the Division were successful in gaining funding support from the Florida Department of Environmental Protection, Bureau of Invasive Plant Management. The funds were used to partially support a risk analysis to re-evaluate the risks of introducing triploid grass carp into State of Florida freshwater resources, determining the risk management steps required to mitigate risk, and developing a risk management operational plan.

The expertise of 13 aquatic plant, grass carp, angler, waterfowl, freshwater

ecology and freshwater fishery experts were recruited from state or federal agencies; national or state universities; and triploid grass carp producers to participate in two intensive workshops held on April 2, 2007 at the University of Florida-Tropical Aquaculture Laboratory and June 29, 2007 at the UF-Department of Fisheries and Aquatic Sciences.

A Florida State University student, Tina Weirs-Evers, completed a thorough grass carp/triploid grass carp biology and aquatic plant management literature review that served as a foundation for the analysis.

The participants focused on five aquatic vegetation management options and determined that the third option, an initial herbicide application to achieve hydrilla management objectives followed by stocking low levels of triploid grass carp to maintain hydrilla management objectives, offered the lowest risks for either of the unacceptable outcomes: 1) all vegetation eliminated for three years or more or 2) no vegetation control with coverage exceeding 50 percent of a water body.

The members then identified the management requirements that must be included to implement the practice and the lake or vegetation conditions under which this management option might be considered.

Specific lake conditions must be considered before implementing the herbicide and carp stocking management option. Lake characteristics favorable to this management scheme include: shallow, eutrophic lakes or lakes with sandy or low organic containing sediments and good light penetration are favorable to re-establishment of native vegetation.

Unfavorable lake characteristics include: 1) smaller or shallow lakes, with a tendency to dry out, can concentrate carp that will consume all vegetation, 2) high flow will trigger fish to leave the water body, 3) highly flocculated sediments, in lakes with enough fetch, will result in wind-mixed turbidity that will independently and negatively affect vegetation coverage over an extended period of time, and 4) surface water inflow from surrounding lands can introduce long-term water chemistry changes (i.e., color) that will inhibit plant growth or recovery.

A final report describing the risk analysis process and including the literature review and an in-depth analysis provided by the participants is available at: http://www.floridaaquaculture.com/publications/P-01537_Report-TGC%20final.pdf or a hard copy can be obtained by contacting Paul Zajicek at 850-488-4033 or zajicep@doacs.state.fl.us.

Live haul trailer available

During 1999 the Florida Legislature funded the purchase of a 48-foot flat bed trailer equipped with 10 fiberglass tanks (exterior dimensions 4'X4'X6') and associated aeration equipment to be used for the North Florida Aquaculture Economic Development Program. For the past eight or nine years the West Florida Regional Fish Growers Cooperative, Inc has leased the trailer to transport live catfish to South Alabama processing

plants. The Cooperative no longer needs the trailer and has returned it to the Department.

The trailer is now available for lease to not-for-profit Florida-based aquaculture associations or cooperatives. If interested please contact Kal Knickerbocker, 850-488-4033 or



knick@doacs.state.fl.us for additional information. Disposition of the trailer will be made no later than March 31, 2008.

Charles H. Bronson
Commissioner of Agriculture



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**Benefiting commercial aquaculture,
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DACS-P-00082

The Division of Aquaculture's responsibilities include certifying all legitimate aquaculturists through an annual registration, implementing on-farm Aquaculture Best Management Practices to meet the State of Florida's environmental goals, managing 1.4 million acres of coastal waters for the harvest or culture of wholesome shellfish, implementing the National Shellfish Sanitation Program through periodic inspection of shellfish processing plants and product, and managing submerged sovereign land leases for aquacultural purposes.

Additional information about Florida aquaculture or Division programs can be obtained from the following offices.

Apalachicola Shellfish Center:	850-653-8317
Bartow Field Office:	863-519-8459
Cedar Key Field Lab:	352-543-5181
Palm Bay Field Lab:	321-984-4890
Punta Gorda Field Lab:	941-833-2552
Panama City Field Lab:	850-236-2200
Tallahassee Office:	850-488-4033 or 488-5471

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