Division of Aquaculture
Florida Department of Agriculture
and Consumer Services

Charles H. Bronson
Commissioner of Agriculture

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Florida Aquaculture

Inside this issue:

Commissioner Bronson praises 2006-07 budget

Governor Jeb Bush signed a $73.9 billion budget for the State of Florida on May 26 for fiscal year 2006 - 2007. The State's budget starts on July 1, 2006 and ends on June 30, 2007. In the budget, the State has funded five Aquaculture Review Council (ARC) Projects, hurricane cleanup for clam farmers, increased funding for oyster relay, and provided funds for two of the University of Florida aquaculture operations.

"The Florida Legislature and Governor were very generous this year when it came to aquaculture" said Commissioner of Agriculture Charles Bronson. "For the first time in my tenure as Commissioner, aquaculture funding was not an issue. I believe it is due to the hard work of the aquaculture industry demonstrating that they are an important part of the agricultural community. While we did not get everything we needed, especially given the devastation the last two hurricanes seasons have brought us, it starts us down the path to recovery."

The ARC projects funded are: 1) Florida Aquaculture Association workshop to explore current and potential opportunities in Florida; 2) Designing and evaluating marine fish and live feeds recirculating systems for inland aquaculture to be performed by Mote Marine Lab; 3) Development of small scale aquaculture farms in North Florida by Florida Agricultural and Mechanical University; 4) Establishing a center for live feeds for aquaculture at Florida State University; and 5) An instructional video guide to hurricane preparedness will be produced at Harbor Branch Oceanographic Institute.

The Division of Aquaculture is currently working with the Clam Industry Task Force to establish the guidelines on how the hurricane cleanup funding for clam farmers will be handled.

If another hurricane season occurs like the last two seasons, oyster relay projects will be able to be continued and money is available to assist local oyster communities this year.

Didemnum spp. covers shellfish farming gear in British Columbia, Canada.

Exotic tunicate found in Massachusetts, California, and Washington

Within the past few years, several species of a colonial tunicate genus *Didemnum,* from different parts of the world, have drawn attention as pest species because they reproduce rapidly and foul marine habitats, shellfish aquaculture gear, ship hulls, and maritime structures. Two species have been formally named: *Didemnum vexillum* from the North and South Islands of New Zealand; and *Didemnum vestum*, from Portsmouth Harbor, New Hampshire.

Species of the genus *Didemnum* that are possibly different but related to *D. vexillum* and *D. vestum* have been recorded from Europe, the U.S. west coast, British Columbia, and coastal and offshore regions of New England.

The rapid spread of *Didemnum* colonies alters marine habitats and threatens to interfere with fishing,

(cont'd on page three)

Florida farm fighting world hunger by Jon Sheppard, Morning Star Fishermen

A unique fish farm and training center, Morning Star Fishermen, is using aquaculture, aquaponics and education to fight world hunger. Founded in 1993 by Hans and Sigrid Geissler, Morning Star Fishermen teaches people suffering from hunger and malnutrition sustainable aquaculture and aquaponics as means of becoming nutritionally self sufficient.

Love a Child Founder, Bobby Burnette, with tilapia at the Fond Parisien site in Haiti.

Morning Star Fishermen trains teachers and mission workers how to teach the needy to raise tilapia and use the waste water from tilapia production to raise vegetables. Within an interconnected, recirculating tank system the growing vegetables remove nutrients and cleaned water is reused to culture fish. This method allows for two crops from a single system, fish for protein, and vegetables for vitamins.

Their goal is for individual households and communities to raise their own food, freeing these communities from dependence on external aid. One example is the Love a Child orphanage and school complex in Fond Parisien, Haiti, where their fish farm, built in 2004, is producing large (1-2 lb.) tilapia.

Through a cooperative venture with USAID, Georgetown University, and Hillsborough Community College's Aquaculture program, Morning Star Fishermen recently trained over 30 students from seven Central American countries. These students are now involved with projects to improve the lives of the people in their home communities.

For more information visit www.morningstarfishermen.org or call their office at (352) 523-2722.

Asian swamp eel diet studied

The Asian swamp eel has been described as a voracious predator of fish that could threaten Florida's $60 million aquarium fish industry, but the exotic eel is not a major problem after all, according to a University of Florida study.

"When we started this research about two years ago, we were concerned that these eels might affect the state's ornamental fish industry, especially if they invaded outdoor ponds and began feeding on fish produced for the aquarium trade," said Jeff Hill, an assistant professor with UF's Institute of Food and Agricultural Sciences. "These small ponds are densely stocked with valuable fish, so we need to protect them."

An extensive analysis of the eels' diet at UF's Tropical Aquaculture Laboratory in Ruskin shows that they ate few ornamental fish being raised in ponds, but preferred a mix of insects, small crustaceans, tadpoles, and worms.

Jeff Carter, Carter's Fish Hatchery in Wimauma, said the UF research has helped answer a worrisome question.

"When we found a swamp eel at our tropical fish farm about three years ago, we had no idea what was going to happen – if they were going to eat our fish, mass reproduce and take over our farm," Carter said. "Now we know that they do not eat enough fish to hurt our crop or mass reproduce. We have been able to continue business without concern about our future being jeopardized by this aquatic animal."

Results of the study, which was funded by the U.S. Department of Agriculture's Cooperative State Research, Education and Extension Service, will be published later this year in the North American Journal of Aquaculture.

For additional information, contact Dr. Jeff Hill at 813-671-5230 ext 118 or jehill@ifas.ufl.edu.

Governor signs electricity tax exemption

On June 22nd the Governor signed House Bill 7075 which consisted of a variety of agricultural related issues. Of interest to farmers is an electricity tax exemption that became effective July 1st and amends Chapter 212, The Florida Revenue Act, Florida Statutes. The new law reads:

"212.08 Sales, rental, use, consumption, distribution, and storage tax; specified exemptions.--The sale at retail, the rental, the use, the consumption, the distribution, and the storage to be used or consumed in this state of the following are hereby specifically exempt from the tax imposed by this chapter.

(5) EXEMPTIONS; ACCOUNT OF USE.--

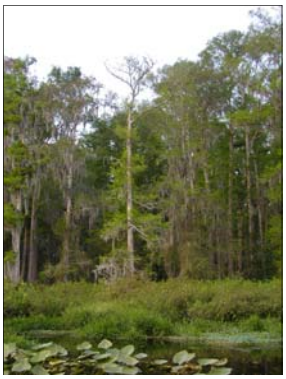
(e)2. Electricity used for certain agricultural purposes.--

Electricity used directly and exclusively for production or processing of agricultural products on the farm is exempt from the tax imposed by this chapter. This exemption applies only if the electricity used for the exempt purposes is separately metered. If the electricity is not separately metered, it is conclusively presumed that some portion of the electricity is used for a nonexempt purpose, and all of the electricity used for such purposes is taxable."

Visit http://www.myflorida.com/dor/ for information and a tax exemption form.

Why wetlands? By Suzie Hershberger, Division of Aquaculture, Bartow Office

This article will help answer wetland-related questions and explain why wetland protection is such an important part of the Aquaculture Best Management Practices.



Defining Wetlands

First of all, what exactly is a wetland?

According to Florida Statutes (subsection 373.019 (17)), wetlands are "those areas that are inundated or saturated by surface water or groundwater at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils." In simpler terms, wetlands are characterized by the presence of 1) water for at least part of the year, 2) wetland plants, and 3) wetland, or hydric, soils. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps, and other similar areas.

Wetland Losses

In early United States history, very little was understood about the ecological and economic importance of wetlands. Among other things, wetlands were seen as barriers to development. With the support of the U.S. government, an estimated 46% of Florida's original wetlands were drained and filled, which at one point covered about half of the state's area. Even after the Clean Water Act of 1972 placed major restrictions on impacts to wetlands, the state of Florida is one of five states to have experienced the most extensive wetland losses.

These losses continue; agricultural land uses alone resulted in the loss of 488,200 acres of wetlands in the U.S. between 1998 and 2004 (an area slightly larger than Lake Okeechobee).

Wetland Functions and Values

Though every wetland is unique, they all serve a purpose as part of the natural environment, and provide several benefits to humans as well. Here are just a few examples:

Wildlife habitat: The U.S. Fish & Wildlife Service estimates that up to 43% of federally threatened and endangered species rely directly or indirectly on wetlands for their survival.

Flood protection & Groundwater Recharge: An acre of wetland can store up to 1.5 million gallons of floodwater, preventing the water logging of agricultural lands and contributing to groundwater supplies. One study calculated that if a 5-acre cypress swamp in Florida was drained by 80%, available groundwater would be reduced by 45%.

Pollution Filtration: Wetlands trap and filter pollutants, including heavy metals, toxins, and excess nutrients, preventing them from washing into other bodies of water. Wetland plants and microorganisms can remove more than half of the phosphorous and 75% of the nitrogen from incoming water.

Shoreline Protection: Four miles of shoreline wetlands can absorb enough water to knock down the height of a storm surge by one foot, protecting homes and properties from damage.

Best Management Practices

As an Aquaculture Best Management Practice, aquaculture producers must contact the Division of Aquaculture to confirm the presence or absence of on-site and adjacent wetlands before beginning any construction activities. All new construction must maintain a minimum 50 foot buffer from the boundary of all wetlands and/or natural water bodies, unless applicable permits have been obtained through the Department of Environmental Protection or the local Water Management District.

If in doubt, contact the Division of Aquaculture for guidance. Not only will you avoid problems with other regulatory agencies, you will also help determine the future of Florida's landscape. As we well know, the "real" Florida is not made of hotels, golf courses, and shopping malls; it is a tapestry of swamps, citrus groves, lakes, marshes, sugarcane fields, pastures, and, of course, fish farms.

Exotic tunicate (continued from page one)

aquaculture, and other coastal and offshore activities. The colonies attach to hard substrates, including dock structures and floats, wood and metal pilings, moorings and ropes, steel chain, automobile tires, polythene plastic, rock outcrops, gravel seabed (pebbles, cobbles, boulders), and ship hulls. They overgrow organisms such as tunicates, sponges, macroalgae, hydroids, anemones, bryozoans, scallops, mussels, and oysters. Where these colonies occur on the seabed, they likely cover the siphons of infaunal bivalves. The colonies have been found at water depths ranging from intertidal to continental shelf depths of 65m (213 ft).

The U.S. Geological Survey and Woods Hole Oceanographic Institution are cooperating on *Didemnum* research. Shellfish farmers that notice new and unusual fouling that look like the images attached to this article, should visit http://woodshole.er.usgs.gov/project-pages/stellwagen/didemnum/index.htm for information and notify Dr. Page Valentine at pvalentine@usgs.gov.

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USDA-APHIS Modifies Aquatic Snail Permit Policy

USDA-Animal and Plant Health Inspection Service has modified their policy concerning aquatic snail permits. Their current approach is that anyone importing or moving in interstate commerce live marine or freshwater snails must apply for a permit. A permit will be granted for *Pomacea bridgesii* (mystery or spike-topped apple snail). However, these members of the Family Ampullaridae (apple snails) will not be granted a permit: *Pomacea canaliculata, P. glauca, P. haustrum, P. lineate, P. paludosa, P. urceus, Marisa cornuarietis, Pila ampullaceal, Pila conica, Pila polita*, and *Lanistes varicus.* A permit request for any other genera or species in this family will be considered by APHIS on a case-by-case basis. All other marine or freshwater aquatic snail applications will receive a letter of no jurisdiction.

To register and apply for an electronic permit visit http://www.aphis.usda.gov/ppq/permits/. Use Form 526 to apply. There is no cost and the permit is valid for three years. For additional information, contact Dr. Carmen Soileau, USDA-APHIS, at telephone 301-734-5302 or lena.c.soileau@aphis.usda.gov.

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