



Commissioner Bronson Announces Aqua Projects

The Commissioner of Agriculture, Charles H. Bronson, is pleased to have approved contracts for three projects totaling \$727,293 following passage of the fiscal year appropriations that went into effect on July 1, 2002.



The Florida Aquaculture Association will organize and conduct a two-day educational training workshop to inform and train prospective and current aquaculturists about the latest technological, marketing, regulatory, and production techniques. The workshop will be held November 8-9, at the Hillsborough Community College campus in Tampa. For additional information contact David Boozer at 863-293-5710.

Mote Marine Laboratory will be developing pompano hatchery and nursery culture techniques. Components of the work include a spawning protocol, optimal conditioning diet for larval rearing, appropriate live feeds, larval rearing protocol, nursery culture protocols and rearing costs. Mote Marine has partnered with Florida State University (FSU) and Florida International University (FIU). Experimental larval rearing systems and large-scale broodstock tanks are under construction at Mote Marine. Pompano broodstock and wild collected juvenile pompano are being collected and conditioned in this recirculating tank system. FSU is identifying several copepod prey species to determine pompano larval preferences and performance. FIU is installing a saltwater well and will be conditioning additional broodstock before the end of the year. Contact Dr. Kevan Main at 941-388-4441 for additional information.

The University of Florida's Indian River Research and Education Center will construct and operate a commercial scale marine shrimp, *Litopenaeus vannamei*, demonstration project in freshwater. A pond production system will be built and stocked for growout. Stocking and growout will be evaluated for environmental sustainability and economic feasibility. The current aquaculture Best Management Practice for effluent treatment will be evaluated against techniques to recycle production water. Contact Leroy Creswell at 772-462-1660 for additional information.

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2002-03 Florida Winter Prediction—Wet and Mild

No one can accurately predict several months in advance if we will have a serious freeze this winter. However, there have been some interesting correlations among certain climatic events and the probability of major freezes in Florida.

Warm water off the coast of Peru around Christmas are named El Niño. El Niño is associated with anomalously warm sea surface temperatures (SST) in the tropical Pacific Ocean which spreads eastward to the South American coast.

Typically, El Niño impacts are strongest in the winter and early spring. El Niños are associated with higher than normal rainfall in Florida in the winter. A strong El Niño occurred during the winter of 1997-98, and heavy rains caused localized flooding then.

Colder than normal SSTs are associated with La Niña, which often promotes lower than normal rainfall during Florida winters. A persistent La Niña started in 1998 and this helped promote our recent drought.

We are predicted to experience a weak El Niño during the winter of 2002-03.

This El Niño will be weaker than that of the strong 1997-98 El Niño. Already, the Climate Prediction Center is estimating that rainfall in Florida from November 2002 to March 2003 will be as much as 30% greater than normal.

El Niño and La Niña influence the jet stream. A strong subtropical jet accompanies El Niño and this brings greater rainfall to Texas and the southeastern states. This subtropical jet helps “block” arctic air masses that can push down from Canada and bring freezes to Florida. La Niña affects the Polar jet movement over the U.S. and helps steer strong cold fronts and winter storms north of Florida. In neutral conditions, the Polar jet is more variable, and large troughs in the jet stream that blow arctic air into the southern U.S. can develop.

Scientists at the University of Florida and Florida State University have studied the relationship between the El Niño and freezes in Florida. Dr. David Martsof noted that severe freezes during the 20-year period from 1980 to 2000 occurred only when the SST departures were near neutral. During that 20-year period, no serious freezes occurred dur-

ing either strong El Niño or La Niña phases. Hence, during a strong El Niño or La Niña, the chances of a severe freeze are small. During a near neutral phase, the chances of a strong freeze increase to 50%. Drs. David Zierden and Jim O’Brien showed that freezes are up to three times more likely to occur during near neutral conditions than during an El Niño or La Niña. El Niño winters are characterized as being cooler than normal, but this is usually because of the cloudy and rainy conditions. Conversely, La Niña winters are usually warmer than normal, due to the sunnier, drier conditions.

If the 1980-2000 trend continues, one could predict that this winter’s weak El Niño would create a low probability of a major freeze. While we might be comforted by this suggestion, freeze prediction is an inexact science, and we need to be prepared in case a freeze does come.

Our thanks to Dr. Larry Parsons of the University of Florida, IFAS, Citrus Research and Education Center, and the Florida Grower for providing this article. For an expanded version of this report, please refer to the November issue of Florida Grower.

Virginia Temporarily Bans Southern Clam Seed

Research completed by the Virginia Institute of Marine Science (VIMS) indicates hard clam seed produced from broodstock that are from QPX-free waters are not as resistant to the disease. These findings triggered the Virginia Marine Resources Commission (VMRC) to ban the importation of hard clam seed from southern states until mid-February 2003. Atlantic coast states located south of Virginia do not have QPX.

September is a clam seed planting month in Virginia and many Florida clam seed suppliers were immediately impacted by the ban. The Division’s Aquaculture Best Management Practices Program Manager, Kal Knickerbocker, attended the VMRC’s September meeting to describe Florida’s bivalve genetics best management practice (BMP). The bivalve genetics BMP requires that: 1)



hard clam seed producers use broodstock from Florida waters and 2) oyster seed producers segregate Atlantic and Gulf coast broodstock, label the seed that is destined for either coast from the appropriate stocks and maintain a paper trail to prove the genetic identity. A similar program could be applied to northern broodstock that, apparently, resist QPX and the seed produced from those stocks that might be sold in Virginia.

In a surprising change of direction, the VMRC adopted emergency regulations during their October 22nd meeting that will allow the importation of seed produced from northern broodstock held in the Florida and South Carolina. Details on this new rule are available at <http://www.mrc.state.va.us>. Interested farmers can also contact Kal Knickerbocker at 850-488-4033 for information regarding steps to satisfy Virginia’s new requirements.

Chinese Delegation Visits Florida

Seven Chinese fishery and aquaculture specialists visited Florida for two days to gather information on farming methods, species, production equipment, animal health programs and government policies. The delegates represented the Jiangsu Provincial government's Bureau of Ocean and Fisheries and five different technical extension stations.

The Jiangsu Province is located in eastern China at the lower reaches of the Yangtze River. It has a coastline of 645 miles, tidal area of 1.6 million acres and offshore fishing grounds of 38 million acres. Fisheries and aquaculture output during 2001 totaled 3.2 million tons with a value of \$3.7 billion.



Dr. Riggs explaining recirculating systems.

Hurricane Isidore canceled a planned tour of catfish farming in Escambia County. As a substitute activity, Drs. Allen Riggs and Chuck Cichra provided a tour and presentation of the University of Florida's aquaculture facilities and programs in Gainesville. A second day of presentations by Mote Marine Laboratory, Harbor Branch Oceanographic Institute, Aquatic Eco-Systems, Inc. and AREA, Inc. rounded out their visit with information and contacts regarding research, education, equipment and technical assistance.

Freeze Protection Video Available

The Division and the University of Florida's Tropical Aquaculture Laboratory were provided funds by the USDA-Risk Management Agency to produce a workshop and video describing management strategies and equipment to mitigate the disastrous impact of extended freeze events.



The last several winters have been particularly cold, or included long cold periods, that reduced outside pond water temperatures below 50° F. This temperature is lethal to ornamental tropical fish or stresses fish bringing on diseases that can result in extensive mortality within a few days. Tropical fish and tilapia farms have lost their entire crop or suffered extensive winter temperature-associated crop losses during the last several winters.

In an effort to provide the latest information regarding farm management techniques and equipment to avoid winter crop losses, the Division and Tropical Aquaculture Laboratory hosted a freeze protection workshop last year. This year a freeze management video has been produced and will be mailed to all certified tropical fish producers. Other farmers interested in receiving a copy can contact Ceda Rudd at 850-488-4033 or ruddc@doacs.state.fl.us.



BMP Notes

Technical Assistance Available from DACS Aquatic Veterinarian

The Florida Department of Agriculture and Consumer Services has hired a veterinarian, Dr. Denise Petty, to provide technical assistance to the aquaculture industry. Technical assistance may include the reporting of disease outbreaks for specific diseases or pathogens or unusual events, sources of professional assistance from qualified veterinarians, input to national and state aquatic animal health policy issues, and the development and release of notices, fact sheets and other information. Dr. Petty's contact information is:

Denise Petty, DVM
Florida Department of Agriculture and Consumer Services
Division of Animal Industry
605 East Main Street
Bartow, Florida 33830-4831
Phone: 863-519-8663
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Draft EPA Rule Supports Florida Approach

The U.S. Environmental Protection Agency's (EPA) proposed effluent limitation guidelines and standards for aquaculture implicitly recognize the foresight of the Florida Legislature in adopting a Best Management Practices approach to environmental protection.

EPA has proposed that flow-through, recirculating and net pen systems producing more than 100,000 pounds of live product are to implement BMPs to address mortalities, non-native species, drugs and chemical storage. Sampling by EPA revealed that much of the potential environmental problems associated with discharges are within the Total Soluble Solids (TSS) component. To remedy this aspect, EPA has proposed TSS effluent limits for these systems. Pond, floating and bottom shellfish culture, and alligator production systems have been exempted from the proposed regulations.

EPA chose not to include facilities below the National Pollution Discharge Elimination System (NPDES) threshold because the agency has determined that: 1) small facilities, as a group, discharge less than 18% of the TSS and less than 18% of the nutrients and Biological Oxygen Demand when compared to all discharges from concentrated aquatic animal production, 2) EPA determined that only a limited amount of loadings removal would be accomplished by improved treatment, and 3) that compliance costs for small facilities would be higher relative to larger operations.

The proposed rule was released September 12th. A public comment period ends December 11th. Growers are urged to comment during this period or at the three public workshops being hosted by EPA. One of the workshops will be in Atlanta, Georgia on November 12th. Copies of the proposed rule can be downloaded from <http://www.epa.gov/fedrgstr/EPA-WATER/2002/September/Day-12/w21673.htm>.

Division of Aquaculture

The Division of Aquaculture's primary responsibilities include certifying all legitimate aquaculturists through an annual registration, implementing a program of 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 issuing sovereignty submerged land leases for the culture of shellfish or live rock.

The aquaculture and shellfish industry can acquire assistance through a variety of means. The Division can be contacted by telephone, 850-488-4033 and 488-5471, or fax 850-410-0893. Tallahassee and the seven state offices are open five days a week from 8:00 AM to 5:00 PM. Offices are located in Apalachicola, Bartow, Cedar Key, Murdock, Orlando, Palm Bay and Panama City. Internet users can visit the Division's web site at <http://www.FloridaAquaculture.com> for industry and program information.

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