

Florida Aquaculture

State budget kind to aquaculture

This was not one of those "good" years. For the third time this year, Legislators were cutting budgets and making very difficult, unpopular decisions. Members of the Florida Legislature are elected and work during their tenure to solve problems identified by their constituents. Florida is a large and growing state with many needs. Legislators were besieged by constituents demanding that their particular interest be protected. This was one of those years where no one was happy.

Revenue shortfalls due to declining sales tax collections, decreased home pur-

chases, and higher operating costs forced the State Legislature to cut over \$5 billion from the state budget for fiscal year 08-09, which starts on July 1.



Despite the troubled economy, the Florida

Legislature determined that the aquaculture industry was so important to Florida and its future that they found enough funds to fully support the division, the Ruskin Tropical Aquaculture Lab, the Indian River Research Education Center Aquaculture Program and the Aquaculture Review Council's priority projects list.

"The aquaculture industry is very fortunate," said Commissioner Charles H. Bronson, "to have received funding at this level at this time really points out the commitment of the Legislature." The Commissioner is well aware that many Floridians do not think about agriculture when they live in coastal counties, gated communities, or growing urban areas.

While the Governor has not yet been given the budget for his approval making these items open for veto, every effort is being made to educate the Governor and his staff on these issues.

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Above average Atlantic hurricane activity predicted

The Colorado State University team of Philip Klotzbach and William Gray released on April 9th their 2008 Atlantic hurricane season prediction. They have revised their analysis methodology to achieve improved accuracy and reported that there will be more activity

this season than the average 1950-2000 hurricane season.

They estimate that 2008 will have about 8 hurricanes (average is 5.9); 15 named storms (average is 9.6); 80 named storm days (average is 49.1); 40 hurricane days (average is 24.5);

4 intense (Category 3-4-5) hurricanes (average is 2.3); and 9 intense hurricane days (average is 5.0). The probability of U.S. major hurricane landfall is estimated to be about 135 percent of the long-period average. They also expect Atlantic basin Net Tropical

Cyclone (NTC) activity in 2008 to be approximately 160 percent of the long-term average.

For the complete forecast, visit <http://typhoon.atmos.colostate.edu/forecasts/>. Their next forecast will be published June 3rd.

Watch for that snake! by Danny Merryman, Bartow Field Office

This article is the first of a series focusing on naturally occurring hazards on Florida aquafarms.

Snakes play a vital role in maintaining balance in our ecosystems. Living in aquatic and terrestrial habitats, snakes feed on a variety of rodents and other mammals, amphibians, insects, and reptiles. Many of Florida's aquaculture facilities provide temporary and permanent homes for all types of wildlife. And with 45 species of snakes endemic to Florida it's not uncommon to encounter one on the farm.

Of the 45 species of snakes in Florida, there are six which are venomous. Of the six that are venomous, there are four that are widespread throughout the state. Therefore, if you come upon a snake there will be a pretty good chance that it will be nonvenomous. However, if you are not skilled in snake identification it would be best to remain at a safe distance. A snake has the ability to strike at a distance of up to two thirds its body length.

There are two families to which Florida's venomous snakes belong: Vi-

peridae (pit vipers) and Elapidae (cobras, mambas, kraits, and coral snakes). Members of Viperidae in Florida include the eastern diamondback rattlesnake, timber (canebrake) rattlesnake, pigmy rattlesnake, cottonmouth (water moccasin), and the copperhead. A



pit viper's venom is haemotoxic meaning it damages blood and blood vessels leading to tissue destruction, organ degeneration, and hemorrhaging. Pit vipers can strike from any position, especially when threatened, and they don't always rattle before striking. In fact, cottonmouths and copperheads do not have rattles.

The coral snake is the only Florida venomous snake in the family Elapidae. A coral snake's venom is neurotoxic; attacking the nervous system and brain, causing paralysis, shutting down the respiratory system, and interfering with heart functions. The good news about the coral snake is it is difficult to be bitten by one. It has short fangs, a small mouth, and they

typically need to chew on the skin to inject venom. The coral snake is very colorful with red, black, and yellow bands. It can be easily confused with the nonvenomous scarlet kingsnake, which has the same color bands, but a different pattern. The best way to identify a coral snake is to note its color band pattern and remember: "Red touches yellow, kill a fellow; red touches black, friend of Jack." Also, the coral snake will always have a black nose, while their nonvenomous look alike have a red nose.



Copperheads are found in a small area of the Panhandle west of Tallahassee and timber rattlers are found in North Florida only as far south as Gainesville and in some parts of the Panhandle. The other four venomous snakes exist throughout Florida.

Part two of this article will discuss snake behavior, what to do in the event of an encounter, and where to find more information.

Snake images courtesy Steven A. Johnson.

Register with USDA APHIS to ship live fish/fish eggs to the EU

Effective immediately, aquaculture facilities must become registered with USDA Animal and Plant Health Inspection Service (APHIS) in order for APHIS Veterinary Services to endorse export health certificates issued for live fish or fish eggs exported to the 27 Member States of the European Union.

Aquaculture facilities wishing to export these products to countries belonging to the European Union must

be registered with APHIS as an aquaculture facility prior to animal export.

For a complete list of EU countries visit: http://europa.eu/abc/european_countries/index_en.htm.

Facility registration is voluntary; however, it is required in order for APHIS to endorse health certificates being presented for fish being exported to the European Union. In order for a facility to be registered the facility must have a valid veterinary-client-patient relationship with an APHIS accredited veterinarian and the facility must keep

updated records on animal inventory, movement, suppliers and health that are available for review by APHIS if needed.

For more information about the registration process please contact Dr. Kathleen Hartman at 813-671-5230 x 119 or via email at Kathleen.h.hartman@aphis.usda.gov.



Marine ornamental trade risk analysis completed

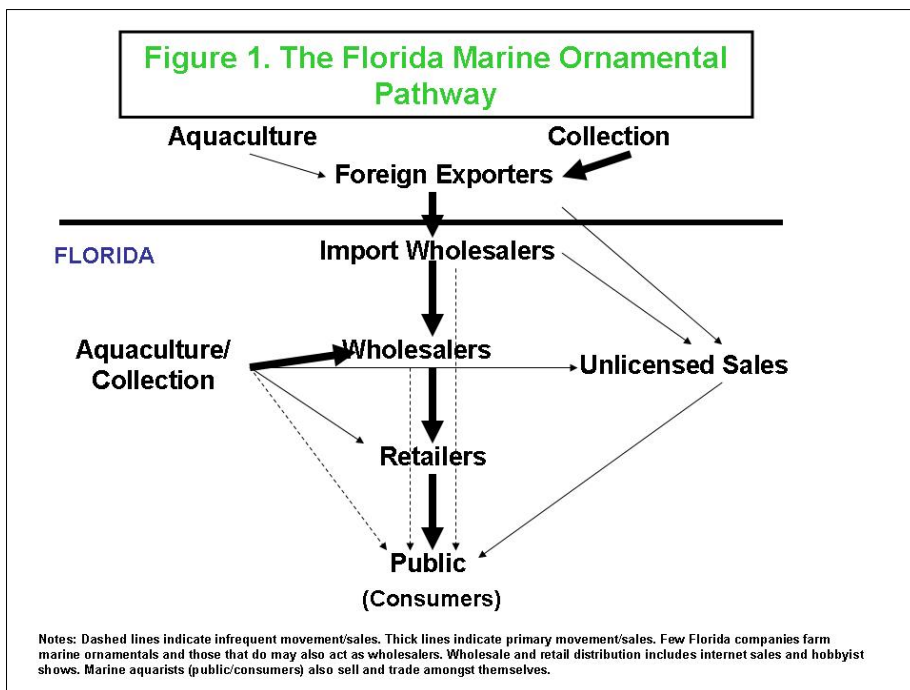
The Division of Aquaculture, Florida Fish and Wildlife Conservation Commission, and University of Florida have completed a marine ornamental trade pathway risk analysis.

To carry out the analysis the agencies recruited an expert panel of 18 import, wholesale, retail, producer, harvester, research, extension, and agency representatives. They produced a literature review, marine ornamental



trade pathway description, and assessed ecological risks.

In brief, annual global trade in marine ornamentals has an estimated retail value in the hundreds of millions of U.S. dollars with approximately 20 million fish specimens, 10 million invertebrate specimens (excluding coral), and 10 million coral pieces traded annually. Source regions are Indonesia, Philippines, South Pacific, Red Sea, Caribbean, South Atlantic, and Indian Ocean. Currently, 22 exotic ornamental marine fish species



have been observed in Florida waters. One species, the Indo-Pacific lionfish, is reproducing in South and mid-Atlantic waters.

Participants described the Florida marine ornamental pathway links and nodes from sources to consumers (Figure 1) and examined the potential for economic, environmental or perceived (social or political) effects.

They were very certain the potential economic costs were low and the

economic benefits high. Potential and real environmental effects were also judged to be low risk. However, the participants were very certain the perceived consequences, social and political, were high. A variety of risk mitigation activities were suggested.

Visit http://www.floridaaquaculture.com/publications/Ornamental_Marine_Species_Pathway_Risk_Analysis_01553.pdf for the full report.

Florida hard clam economic survey on-going; Get connected, use CLAM-L

Florida certified shellfish dealers received a survey in early April that the University of Florida will use to produce an update to a 1999 statewide economic impact analysis. At that time the total economic impact of hard clam production and sales was determined to be \$33.9 million.

The Statewide Clam Industry Task Force, an ad hoc industry group, requested that the survey be conducted. The Division of Aquaculture is providing logistical and financial

support to distribute the survey to 54 dealers and follow-up phone calls to complete the analysis. All dealer responses will be held confidential and dealers are strongly encouraged to participate.

For additional information, contact Dr. Charles Adams, Marine Economist, at the University of Florida at 352-392-1826 or cmadams@ufl.edu.

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The Florida Clam Industry Forum is an electronic mailing list and discus-

sion group that connects business, technology, and science.

Subscribe by sending a message to LISTSERV@LISTS.UFL.EDU with a message in the body of your email that says: **SUBSCRIBE CLAM-L**.

To send a message to the clam forum, use CLAM-L@LISTS.UFL.EDU as the email address.

If you have questions, contact the list owner Dr. Shirley Baker at sbaker25@ufl.edu or Leslie Sturmer at Inst@ufl.edu.

Charles H. Bronson
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Challenges remain for culturing biofuel algae



Rising gasoline and diesel prices have rekindled interest in alternative fuels. Freshwater microalgae create and store oil as an energy source. Scientists during the late 1970s investigated the use of intensive algae culture as a means to remove carbon dioxide from power plant flue gases and noticed this oil storage capability.

Currently, research efforts are directed to efficiently harvest small algae, reducing farm size, and finding species that will store larger amounts of oil. The Division of Aquaculture has certified several algae farms as legitimate aquaculture facilities.

For additional information concerning biofuel algae production, read or download a summary of the U.S. Department of Energy's research efforts: <http://www.nrel.gov/docs/legosti/fy98/24190.pdf> or visit <http://www.floridafarmtofuel.com/>.

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