

# FLORIDA AQUACULTURE

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## DAMAGING FREEZES LIKELY

The Southeast Climate Consortium reports the Pacific Ocean is in a *Neutral* phase (neither El Niño nor La Niña) now and for the foreseeable future. Over the last century or more, there have been a dozen or so severe freezes that had catastrophic impacts on Florida's citrus industry and other agriculture across the Southeast. Of these dozen events, all of

them occurred during periods of Neutral conditions in the Pacific Ocean. Their studies have shown that such severe freezes are up to three times more likely during Neutral conditions than during El Niño or La Niña. They are forecasting the increased risk of damaging freezes for the winter of 2005/2006.

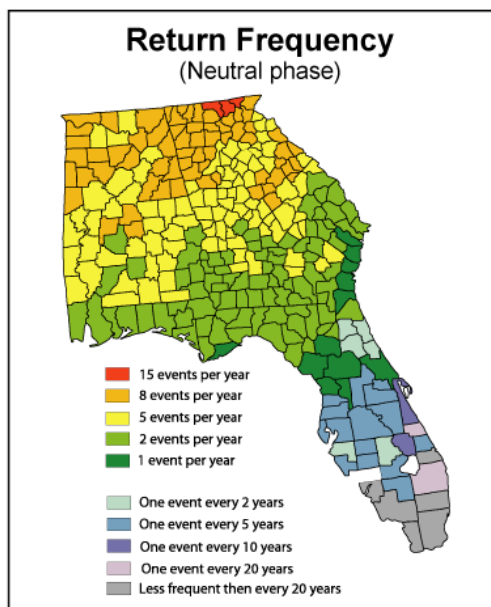
The freeze forecast map shows how many times you can expect to have three consecutive nights with temperatures equal or below 32°F in your county.

For additional information visit the Southeast Climate Consortium at <http://www.agclimate.org/>.

### Special points of interest

- The endangered oyster?
- FDA approves irradiated oysters.
- Small turtle sales are illegal.
- Clam Industry Task Force formed.

**Freeze forecast for Winter of 2005/2006**  
*Extended Freeze Events*  
(three or more days in a row at or below 32 degrees)

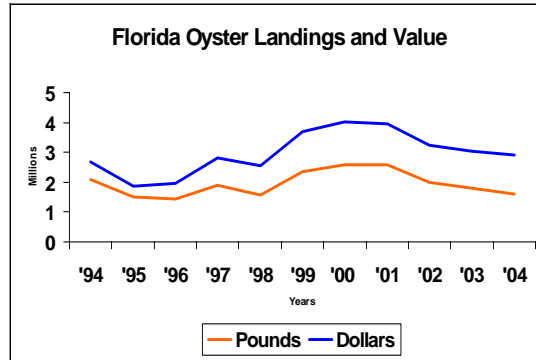


## THE ENDANGERED OYSTER?

The National Marine Fisheries Service (NMFS), Office of Protected Resources, has requested biological information on the eastern oyster, *Crassostrea virginica* in response to a petition to list the oyster as an endangered species.

Listing the oyster as an endangered species may appear ridiculous given its abundance along Florida's Coasts; however, the petitioner argued annual Atlantic Coast landings have decreased to less than 2 percent of their historic values. In addition, the petitioner cites poor water quality, introduced oyster pathogens, dredging, and coastal development as reasons for the oyster's decline in the Northeast and especially Chesapeake Bay.

NMFS requested information from all the states within the oyster's natural range and convened a 12-



member expert review team to compile information and consider whether there are subspecies that might qualify for an endangered listing.

Florida oyster landings have been impacted by changing consumer preferences and year-to-year weather (rainfall and storms). The average annual landings for the last 11 years was 1.9 million pounds.

Oysters may not be found in the same abundance throughout Florida but overall oysters are doing well and should be available for oyster lovers to enjoy for many years to come.

**Editor's Note:** On October 19th NMFS received a request from the petition author to withdraw his petition. As of newsletter publication, NMFS had not decided how to respond to this request.

## FDA APPROVES IRRADIATED OYSTER

In response to a petition filed in 1999 by the National Fisheries Institute and the Louisiana Department of Department of Agriculture and Forestry, the U.S. Food and Drug Administration (FDA) recently amended their regulation entitled, *Irradiation in the Production, Processing and Handling of Food*, to provide for the safe use of ionizing radiation to treat refrigerated or frozen molluscs (oysters, clams or mussels) for the control of *Vibrio* species and other food borne pathogens. Irradiation is currently permitted by FDA for pathogen reduction in a variety of foods (meat, fruits, vegetables, herbs and eggs) to reduce microbial pathogens, delay the onset of ripening, or kill insect pests.

A variety of naturally occurring marine bacterial *Vibrio* species can cause severe illness and death when people are exposed through wounds or consumption of uncooked seafood. Of the 12 *Vibrio*

species known to cause human infection, eight have been associated with food. *Vibrio vulnificus*, and *V. parahaemolyticus* are most commonly isolated from oysters. *V. vulnificus* is associated with 95 percent of all seafood-related deaths in the United States.

*Vibrio* bacteria are highly sensitive to ionizing radiation and are usually eliminated by doses as low as 0.5 kiloGray (kGy), the FDA has allowed up to 5.5 kGy for use with on molluscan shellfish. Ionizing radiation has enough energy to remove electrons from atoms or molecules (groups of atoms) when it passes through or collides with some material. This energy disrupts the molecules to disable bacterial functioning. The amount of energy absorbed per unit weight of tissue is called "absorbed dose" and is expressed in units of gray (Gy). One gray dose is equivalent to one joule radiation energy absorbed per kilogram of tissue weight.

FDA referenced numerous studies with shellfish and other foods which indicated irradiation treatments can be effective in reducing and eliminating potential harmful bacteria without harming the food or causing other food safety problems. The treated food is not radioactive or altered in any manner to pose any food safety concerns.

The ability of ionizing radiation to control *Vibrio* and other pathogens has been experimentally proven. How the process will be applied to shellstock or shucked meats is unclear at this time as well as the potential impact of the process on product quality (flavor and color), consumer perception, and shellstock shelf life. For additional information, contact Dr. Gary Rodrick at the University of Florida's Aquatic Food Products Lab, telephone 353-392-4221.

## SMALL TURTLE SALES ARE ILLEGAL

Florida turtle producers should be aware that turtle farming is considered aquaculture, and an Aquaculture Certificate of Registration, from the Florida Department of Agriculture, is required to operate in the State. Certified producers must follow the Aquaculture Best Management Practices, especially with regard to the discharge of production water and release of non-native species.

The sale of turtles with a carapace length of less than 4 inches has been banned in the U.S. since 1975 because of the public health impact of turtle-associated salmonellosis. This regulation is enforced by the Food and Drug Administration (FDA) in cooperation with State and local health jurisdictions. Experts estimate that the regulation has prevented about 100,000 cases of salmonellosis per year.

Salmonellosis is an infection of the intestines caused by bacteria called *Salmonella*. Anyone can get *Sal-*



Juvenile Red-Eared Slider  
Picture courtesy the USGS San Diego Field Station

*monella* infection, but the risk is highest in infants and young children as well as the elderly, and people who have lowered natural

resistance to disease due to pregnancy, cancer, chemotherapy, organ transplants, diabetes, liver problems, or other diseases. Symptoms of the disease may include diarrhea, stomach

pain, nausea, vomiting, fever and headache. Symptoms usually start within 6 to 72 hours after a person is exposed to *Salmonella*, and they generally last for 2 to 7 days.

*Salmonella* are naturally occurring bacteria in turtles and those with *Salmonella* usually do not appear sick in any way. In addition, turtles do not shed *Salmonella* all of the time. So, just because a turtle might have one negative test for *Salmonella* doesn't mean that they are not infected. It could mean that the turtle was not shedding *Salmonella* on the day it was tested.

The public should recognize that turtles are a possible source of salmonellosis for humans; and that turtles are not suitable pets in households with young children or immunocompromised persons.

The FDA rule states:

Viable turtles eggs or live turtles with a carapace length of less than 4 inches shall not be sold, held for sale, or offered for any other type of commercial or public distribution.

The following exemptions apply:

- The sale, holding for sale and distribution of live turtles and viable turtle eggs for bona fide scientific, educational, or exhibitional purposes, other than use as pets.
- Sales intended solely for export from the U.S.
- Sale of turtles and turtle eggs not in connection with a business.

The illegal sale of turtles with a carapace length of less than 4 inches is subject to a fine of not more than \$1,000 or imprisonment for not more than a year, or both, for each violation.

## CLAM INDUSTRY TASK FORCE FORMED

The Division of Aquaculture has acted on a suggestion by Dan Solano, Shellfish Industry Representative to the Aquaculture Review Council, to create a forum for shellfish culture issues. The Division is organizing a statewide Clam Industry Task Force. The Task



Force will consist of 13 representatives: 12 from the growing areas in the state, Cedar Key, Charlotte Harbor, Franklin County and the Indian

River; and the shellfish representative on the Aquaculture Review

Council. Representation from the four areas will be determined according to the number of leases in each area. The Director of the Division of Aquaculture and at least one other division staff mem-

ber will be present at each meeting. Minutes will be taken and maintained by the division. Meetings will begin quarterly and will be held in a

different growing area each time. One meeting each year will be held in Tallahassee during the Florida Legislative session. Changing meeting locations will provide broader access of the Task Force and the division to the clam growers in each growing area. Task Force members will be responsible for representing the views of the growers from their area and for advising the division on all aspects of the clam farming industry in Florida.

For additional information, contact Sherman Wilhelm, telephone 850-488-4033, wilhels@doacs.state.fl.us.

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*Benefiting commercial aquaculture,  
Conserving natural resources*



**Florida's Price Gouging Statute**

During a state of emergency the State of Florida may invoke a price-gouging statute. This statute makes it illegal to charge excessive or exorbitant prices for essential items, including shelter, gasoline, food, water, ice, lumber or generators unless the increases in the amount charged are attributable to additional costs incurred by retailers.

Individuals or businesses found to have engaged in price gouging face fines of up to \$1,000 per violation, or up to a maximum fine of \$25,000 per day.

Commissioner of Agriculture Charles H. Bronson is encouraging residents who witness what they believe are any price gouging incidents to report it at once to his department's price-gouging hotline - **1 800 HELP FLA (435-7352)**.

*Visit our web site,  
[www.FloridaAquaculture.com](http://www.FloridaAquaculture.com),  
for aquaculture, shellfish, and Division program information*

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